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#### **DOCUMENT CHANGE RECORD:**

REV. NO	DESCRIPTION OF CHANGE	EFFECTIVE DATE
01	Initial Version	July, 2010
02	Changes done as per Revised NEPRA Power Safety Code 2021	October 01, 2021
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## 1.0 PURPOSE:

The purpose of this CHSEQ Manual is to lay down a management framework which serves as a reference for implementation of the safety management system. It provides directions to management at all levels for implementing Occupational Health, Safety, Environment and Fire Safety to achieve compliance with legal and regulatory requirements. It establishes a safety management structure built upon safety procedures and practices for K-Electric especially focusing on electrical work related to Power Generation, Transmission and Distribution.

This Safety Manual is for the guidance of employees/workers, in the prevention of accidents, which may result in injury or death of the workers, their fellow employees, workers of contractors or the public, or damage to KE property or equipment. However, most of the instructions will help prevent injuries and suffering in normal life too. It applies to all the employees at work and the contractors working for KE.

This manual is designed in accordance with the NEPRA Power Safety Code 2024 and intended to ensure compliance with the same.

## 2.0 SCOPE:

This CHSEQ Manual shall apply to all KE Business Units (Distribution, Generation, Transmission and Enabling) of the company and electrical network system managed by the company as on date. The objective is to ensure control of operations and management of safety outcomes.

The KE HSEQ Management System provides a mechanism for Occupational Health & Safety, Environment and Quality Management throughout all areas and departments of KE.

The HSEQ Management System is designed to cover:

- a) Environmental Aspects and Impacts
- b) Occupational Health & Safety Hazards and Risks

**CHSEQ and BU HSE shall develop and revise their procedures based on the guidelines given in this manual.**





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### 3.0 DEFINITIONS:

The terms and expressions used but not defined in this manual shall have the meaning assigned to them in the Act.

- **Act:**

The term "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997).

- **Annual:**

The period of one Fiscal year, starting from July 01 and ending on June 30.

- **Authority:**

The term "Authority" means the National Electric Power Regulatory Authority (NEPRA) established under Section 3 of the NEPRA Act.

- **Arc Flash**

An electrical arc flash is a sudden, intense release of energy due to a fault or short circuit in an electrical system, generates intense heat, light, and pressure waves, posing a significant hazard to personnel and equipment within the vicinity. The arc flash may occur during electrical isolation, operating breakers, switches or starters, racking breakers in or out, testing electrical circuits, and applying temporary earthing, etc.

An arc flash is sometimes inappropriately called a "flashover." Flashover is associated with fires and combustion within enclosed spaces, with a sudden burst of flames from combustible materials that are ignited rapidly and filling the space, often accompanied by a significant increase in temperature.

- **Building:**

A structure with a roof and walls.

- **Calibration:**

Calibration is the process of configuring an instrument to provide a result for a sample within an acceptable range.

- **Consumer Premises**

Consumer premises refer to the physical location where a consumer or end-user directly receives and uses electrical services

- **Contractor:**

An independent external organization/company that has been awarded a contract by the company for providing services or carrying out specific activities under the agreed contract specifications, terms and conditions. Sub-contractor is an external contracting organization/company designated by the Contractor to perform parts of the scope of work and with prior written approval by the company.

- **Contractor Employee:**

A person employed by a contractor or sub-contractor to perform specific tasks or services for the company as per contract.

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- **Competent Person:**

A medically and physically fit person who is assigned, designated and authorized in writing to perform a specific type of duty or to be at a specific location, having necessary training, experience, technical skills, as well as relevant qualifications, certifications or licenses to perform assigned roles and responsibilities safely.

- **Distribution:**

The term "Distribution" means ownership, operation, management or control of distribution facilities for the movement or delivery to consumers of electric power but shall not include the ownership, operation, management and control of distribution facilities located on private property and used solely to move or deliver electric power to the person owning, operating, managing and controlling those facilities or to tenants thereof.

- **Distribution Company:**

The term "Distribution Company" means a person engaged in the distribution of electric power.

- **Distribution Facilities:**

The term "Distribution Facilities" means electrical facilities operating at the distribution voltage and used for the movement or delivery of electric power.

- **Distributed Control System (DCS):**

DCS is used in Power Plants, a computerized process control system for operation usually with many control loops, used for system management and data collection.

- **Electrical Worker:**

An Electrical Worker received general electrical training, performing routine tasks like basic maintenance, repairs, and installations. They understand basic electrical principles, hazards, and safety practices, and typically possess standard certifications or licenses for general electrical work. They handle common electrical systems in residential, commercial, and light industrial settings. These workers often work under the supervision of experienced or specialized electrical personnel for more complex tasks.

- **Specialized Electrical Worker:**

A Specialized Electrical Worker receives advanced or specialized electrical training, enabling them to handle complex and high-risk electrical tasks. They possess in-depth knowledge of advanced electrical concepts and high voltage safety protocols. Holding advanced certifications, specialized licenses or specific training certifications in areas like high voltage systems, hazardous locations, or specialized industrial machinery. They can work independently on complex assignments and handle specialized electrical systems in high-risk environments.

- **Employee:**

A person who performs tasks assigned by the organization/company. Employment can be regular, contractual or daily wages. Examples of employees include:

- Regular Employee
- Contract Employee
- Daily Wage Worker



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- **Environment:**

Surroundings in which organizations operate, including air, water, land, natural resources, flora, fauna, humans and their interrelation.

- **Environmental Impact Assessment:**

Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, considering inter-related socioeconomic, cultural and human-health impacts, both beneficial and adverse.

- **Environmental Aspect:**

An element of licensee activities, products and services that can and/or does interact with the environment. Examples of environmental aspects categories are:

- a) Air Emissions,
- b) Energy,
- c) Soil contamination,
- d) Water contamination,
- e) Biodiversity,
- f) Materials (Procurement),
- g) Materials (Storage and Use),
- h) Effluent discharges,
- i) Solid Waste Generation,
- j) Sludge Generation,
- k) Freshwater/Seawater consumption,
- l) Crude Oil consumption (consumption of non-renewable resources),
- m) Noise.

- **Environmental Impact:**

Any change to the environment, whether adverse or beneficial, resulting from Licensee's activities, product, and services.

- **Exposure:**

Presence of a hazardous substance (Solid, Liquid or Gas), or physical factors (noise, temperature, vibration, non-ionizing, and ionizing radiation) in an area where a person works.

- **Excavation:**

Any man-made cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal. This could be carried out manually, by power tools or a mechanical excavator.

- **Facilities:**

Space or equipment necessary for doing an operation or process.

- **Fire:**

*Fire is a chemical reaction that occurs when a combustible substance/fuel combines oxygen in the presence of heat, typically producing smoke, flame, heat, and light. It is a rapid oxidation process that releases energy in the form of heat and light.*



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- **First Aid Injury or illness:**

First aid case is limited to any one-time treatment and any follow up visit for the purpose of observation of minor scratches, cuts, burns, splinters and so forth, which do not ordinarily require prescription medication / medical care.

- **First Party**

*The first party is the primary entity or department involved in an internal audit or inspection of its own system or site. The second party is the entity or other department(s) that interact directly with the first party within an organization to conduct an internal audit or inspection. The third party is an external entity or organization that is not directly involved in the primary interaction between the first and second parties but may conduct audits or inspections.*

- **Fatigue**

*Fatigue can be defined as a state of impairment that can include physical and/or mental elements, associated with lower alertness and reduced performance. Signs of fatigue include tiredness even after sleep, psychological disturbances, loss of energy, and inability to concentrate. Fatigue can lead to incidents because employees/workers are not alert and are less able to respond to changing circumstances. As well as these immediate problems, fatigue can lead to long-term health problems.*

- **Generation:**

The term "Generation" means the ownership, operation, management, or control of generation facilities for delivery or sale of electric power and not solely for consumption by the person owning, operating, managing, and controlling those facilities.

- **Generation Company:**

The term "Generation Company" means a person engaged in the generation of electric power.

- **Generation Facility:**

The term "Generation Facility" means the electrical facility used to produce electric power.

- **Goal:**

Goals are general guidelines that explain what needs to be achieved in the organization with management intervention, providing resources and support. Goals should be specific, measurable, attainable, realistic, and time-bound (SMART).

- **Guarded:**

Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach or contact by persons or objects to a point of danger.

- **Hazard:**

*A hazard is any source or situation that has the potential to cause harm, injury, damage, or adverse health effects on people, animals, property, the environment, or any combination thereof. Source or situation could be physical, chemical, biological, ergonomic, psychosocial, and environmental hazards.*

- **Heavy Equipment:**

*Any type of heavy equipment or construction machinery used for digging, lifting, moving, and shaping*

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materials such as forklift, excavator, bulldozer, wheel loader, backhoe, grader, crane, dump truck, bucket mounted vehicles and more.

- **HSE Management System**

The HSE (Health, Safety, and Environment) Management System is a structured framework and documented approach implemented by organizations to manage the health, safety, and environmental risks associated with their activities, providing detailed and clear action steps. It defines the scope, roles, responsibilities, policies, procedures, processes, and practices aimed at promoting a safe working environment, prevent incidents and ensure compliance with NEPRA Power Safety Code requirements. An HSE management system typically covers a range of documents including organization Plans, Policies, Manuals, Guidelines, Procedures, SOPs, General Instructions, Work Instructions, Forms, Checklists, Log Sheets, Data Sheets, Specifications, Reports, Training Material, Handbook, Poster, Alerts, flyer, Leaflet, and Brochure, among others. It outlines job steps for all end users to perform tasks safely, efficiently, and effectively, describing “who, what, when, where, why, and how” the task should be initiated, conducted, executed, and completed to achieve the desired outcome.

- **HSE Performance:**

Health, Safety, and Environmental (HSE) performance refers to an organization's overall effectiveness in managing and achieving its objectives related to HSE culture, protecting the health and safety of its employees, contractors, and the public, as well as minimizing its impact on the environment and preventing asset damages.

- **Immediate Cause and Root Cause:**

An immediate cause (also known as a "Causal Factor" or "Direct Cause") is a human error/ mistake, equipment failure, material failure or natural phenomena that directly leads to the incident, a specific outcome or consequence. For example, in a workplace accident where an employee slips and falls, the immediate cause may be the wet floor (e.g., due to a spill). However, to prevent future accidents, other root causes should be addressed such as failure in maintenance processes, etc.

The root cause, often referred to as the "basic cause" or "initial factor" that started the chain of events leading to a problem, issue, incident, or undesired outcome. When root cause is properly fixed, it will prevent recurrence or significantly reduce the likelihood of similar problems or incidents in future.

- **In-charge:**

The person in-charge holds a position for control and management of specific equipment, devices, activities, operations and performing, directing, or authorizing tasks.

- **Incident / Accident:**

An unplanned event which results or could have resulted in an adverse or undesirable consequence of workplace injury, fire, explosion, damage, or an environmental impact. Undesirable consequences related to such incidents include but are not limited to the following:

- a) Fires
- b) Work-related injuries
- c) Process safety incidents
- d) Property or equipment damage.
- e) Unfavorable impact on the public.

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- f) Shortness of breath due to oxygen deficiency in a confined space
- g) Toxic gases exposure resulting in dizziness
- h) Release of chemical or hydrocarbon from a tank
- i) Arc flash
- j) Spills
- k) Near miss

- **Incident Direct Cost:**

Incident Direct Cost refers to the cost of direct damage, repairs or replacement, clean-up, material disposal and environmental remedy resulting from the incident.

Direct Cost does not include indirect costs such as operational loss, business opportunity loss, business interruption and feedstock/electricity losses, loss of profits due to equipment outages, cost of obtaining/operating temporary facilities.

- **Inspection:**

An examination of a product, process, service, installation or their design and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements at the time of purchase or in-service inspection.

- **Insulated**

Separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of current.

- **Key Performance Indicator:**

A Key Performance Indicator (KPI) is a measurable value that demonstrates how effectively an organization is achieving goals and objectives. Key Performance Indicators (KPIs) are in numbers for the goals and objectives to review and monitor their status for effective implementation.

- **Legal Requirements:**

National and provincial laws including the NEPRA Act, rules, regulations, standards, codes, consumer service manual, SOP's, directives, license terms & conditions, agreements, and other applicable documents.

- **Licensee:**

The term "Licensee" means a holder of a license under the Act.

- **Likelihood:**

Frequency of occurrence of an event/incident.

- **Live Parts (Energized):**

Any electrical conductors, conductive materials or components within an electrical system that are connected and actively carrying an electric current or are electrically charged in normal operating conditions.

- **Machinery:**

An apparatus using or applying mechanical power to perform a particular task.

- **Material:**

Raw material used in the primary production or manufacturing of goods.

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- **Medical Treatment Injury or illness:**

Any work-related injury in which treatment (other than first aid) is administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first-aid treatment, even though provided by physicians or registered professional personnel.

Examples of Medical Treatment Case.

- Abrasions - Treatment of abrasions that occur deeper than full skin depth.
- Bruises - Treatment of a bruise by drainage of blood.
- Burns - The treatments of second- and third-degree burns
- Casts - Application of a cast or other professional means of immobilizing an injured part of the body.
- Debridement - Surgical Debridement, that is, the removal of dead or damaged skin. Fractures - Treatment of fractures
- Infections - Treatment of infections arising out of an injury.
- Prescriptions - Administration of prescriptions medicines
- Sutures - The suturing (stitching of the edges) of any wound

- **Near Miss:**

Near miss is an incident which does not result in injury, illness or loss, but which has the potential for injury, or illness or loss. *For example, if a worker nearly slips on a wet floor but prevents a fall, it's an incident, near miss or close call, having potential to result in a real accident/injury.*

- **NEPRA's Concurrence:**

*Concurrence refers to the approval granted by NEPRA to power generation companies, indicating that they have met the regulatory requirements to operate. It ensures that the companies comply with NEPRA's standards for safety, efficiency, and regulatory compliance, allowing them to generate electricity legally.*

- **Objective:**

Objectives define strategies or implementation steps to attain the identified goals. They are more specific and outline the "who, what, when, where, and how" of reaching the goals.

- **OHSE:**

Occupational Health, Safety & Environment

- **Occupational Health & Safety:**

Intended to the conditions and factors that affect, or could affect, the health and safety of employees, temporary workers, contractor personnel, visitors or any other person in the workplace.

- **On-job Fatality:**

An on-job injury or illness that results in death.

- **On-the-job Injuries or illnesses:**

On-the-job Injuries or illnesses should be categorized as follows:

- **Restricted Duty Injury or Illness:**

Any work-related injury that results in restricting the employee to perform all or any part of his/her normal assignment during all or any part of the workday or shift. Recordability of restricted duty at times will be dependent upon the nature of the work performed by the employee. For example, a sprained ankle may not

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be 'Lost Workday' for an office assistant working at a desk since he/she can perform all his/her duties, but it probably would be for an operator, mechanic or warehouse man.

- **Lost Time Injury or Illness:**

Any injury or illness which prevents the employee from performing all the duties of his/her regularly assigned job on any calendar workday followed by the day of the incident.

- **Overcurrent:**

*An overcurrent refers to an electrical current that exceeds the normal rated operating level of an equipment or a conductor, leading to potential damage or hazards. Overcurrent may occur due to overload, short circuit, or ground fault and lightning strikes.*

- **Residual Risk**

*Residual risk refers to the level of risk that remains after implementing and maintaining existing control measures for risk mitigation.*

- **Permissible Exposure Limit (PEL):**

PEL is the occupational exposure standard that refers to the maximum permissible exposure to air-borne chemicals to which nearly all healthy persons can be exposed to an average 8hour period per day (TWA) without adverse health effects. Detail information about PEL is primarily found in the Material Safety Data Sheet (MSDS).

- **Periodic Plan**

*A periodic plan or schedule that is structured to occur at regular intervals over a defined period of time, such as yearly, bi-annually, quarterly, monthly, or weekly. These plans are designed to help individuals or organizations systematically manage and achieve their goals over time.*

- **Power Safety Code**

*The NEPRA Power Safety Code is a set of unified and standard HSE guidelines, specifying requirements for an Occupational Health, Safety, and Environment (HSE) management system that licensee, NEPRA's concurrence holder, generation company, registered person, or a network owner with a connection agreement, power purchase agreement, or relevant contract to comply with these requirements.*

- **Property Damage Incident:**

All safety incidents that result in damage to the licensee property/structure/equipment, however, exclude damage to the property/structure/equipment due to fire, or wear and tear. Property damage incidents may be caused by traffic crashes, cranes related incidents, forklift hitting or damaging equipment, resulting in direct cost as per criteria set by licensee.

- **Process:**


A series of actions or steps taken to achieve an end result.

- **Product:**

The goods or energy produced/generated/manufactured for sale.

- **Risk:**

Combination of the frequency (likelihood) of occurrence of event/incident and the consequences (severity) of

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that event/incident.

- **Risk Assessment/Treatment:**

Overall process of Hazard identification, analysis, evaluation of risk level and application of controls.

- **Safety Critical Protection Devices:**

Safety critical protection devices, limit or stop the abnormal condition in system or flow of current in the event of a ground fault, overload, or short circuit in the circuit/ wiring system, whose failure can result in serious injuries, significant property damage or environmental impacts.

- **Short Term Exposure Limit (STEL):**

The maximum concentration to which workers may be exposed for a period of time up to 15 minutes continuously without suffering irritation, chronic tissue damage, or narcosis which may lead to accidental injury. In addition, exposure to STEL shall not be repeated more than 4 times per day. Information about STEL is found in Material Safety Data Sheet (MSDS).

- **Severity:**

Level of consequences/outcomes of an event/incident.

- **Shall:**

The term "shall" indicate a mandatory requirement.

- **Should:**

The term "should" indicate a suggested/ optional recommendation.

- **System:**

A set of components working together as parts of a mechanism or an interconnecting network.

- **Task:**

A piece of work activity to be completed or undertaken.

- **Task Steps:**

Each separate part of a work activity.

- **Time Weighted Average (TWA):**

Time-weighted average concentration for a normal 8-hour working day, and a 40-hour working week, to which nearly all workers may be repeatedly exposed day after day, without adverse effects. Information about TWA is found in Material Safety Data Sheet (MSDS).

- **Tools:**

A device, one held in the hand, used to carry out a particular task.

- **Transformer:**

An equipment to regulate electric energy to step up (increase) or step down (decrease) voltage levels.

- **Transmission:**

The term "Transmission" means the ownership, operation, management or control of transmission facilities.

- **Transmission Facilities:**

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The term "Transmission Facilities" means electrical transmission facilities including electrical circuits, transformers and sub-stations operating at or above the minimum transmission voltage but shall not include:

- Electrical circuits forming the immediate connection between generation facilities and the transmission grid to the extent that those circuits are owned by a generation company and are directly associated with that company's generation facilities.
- Specified facilities operating at or above the minimum transmission voltage which the Authority, upon an application by a licensee under Section 20 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, shall be owned and operated by a distribution licensee.

- **Turnaround:**

Turnaround is scheduled, planned stoppage of part or all of a plant, Grid/ sub-station operations for maintenance, repair, improvement, replacement or upgradation of equipment.

- **Utilities:**

Essential facilities that support the operation and maintenance such as fuel, water, steam, electricity, compressed air and telecommunication, etc.

- **Vehicles:**

A mode of transportation that carries passengers, goods, or equipment from one location to another, powered by an engine, motor, or human effort, and is used across various domains, including land, water, air, and rail.

- **Visitor:**

Visitor means a person, other than an employee or contractor, permitted to enter a work area under permission by the authorized person.

- **Waste:**

A substance, material, or by-product generated during operation in solid, liquid, or gaseous form that is no longer useful or needed, required to be disposed.

- **Working on Live Parts:**


Coming into contact with the live electrical components with hands, feet, other body parts, tools, probes or test equipment, etc.

- **Workplace:**

Place under the control of the licensee where a person needs to be or to go for work purposes.

- **Worksites:**

Includes licensee owned and directly managed properties.

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#### 4.0 **ABBREVIATIONS:**

- ABC Aerial Bundle Cable
- AC Alternating Current
- AE Assistant Engineer
- BU HSE HSE-G&T, HSE-D, Safety Coordinators of Support and Other Departments
- CXO Chief Officer
- D Distribution
- DC Direct Current
- DT Distribution Transformer
- EHT Extra High Tension-66/132/220/500 kV
- ELCB Electric Leak Circuit Breaker
- FAC First Aid Case
- G Generation
- G&T Generation and Transmission
- GFCI Ground Fault Circuit Interrupter
- GHS Globally Harmonized System of Classification and Labelling of Chemicals
- GSOMO Grid System Maintenance & Operation
- HSEQ Health Safety Environment & Quality
- HT High Tension-11kV
- JSA Job Safety Analysis
- KE K – Electric Limited
- LDC Load Dispatch Control
- LM Lineman
- LOTOTOTO Lock Out Tag Out Try Out Test Out
- LT Low Tension-400V
- LWI Lost Workday Injury
- MCP Manual Call Point
- MOC Management of Change
- MSA Management Safety Audits
- MTC Medical Treatment Case
- NEBOSH National Examination Board in Occupational Safety and Health
- NEPRA National Electric Power Regulatory Authority
- NIOSH National Institute of Occupational Safety & Health
- OSHA Occupational Safety & Health Administration
- PCB Polychlorinated Biphenyls
- PDCA Plan Do Check Act Cycle
- PMT Pole Mounted Transformer
- PNRA Pakistan Nuclear Regulatory Authority
- PPE Personal Protective Equipment
- PPM Parts per million
- PSM Process Safety Management

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- PSSR Pre Startup Safety Review
- PT Power Transformer
- PTG Portable Temporary Guard
- PTW Permit to Work
- RCCDs Residual Current Circuit Breakers
- RCDs Residual Current Devices
- RT Radiography Test
- RWC Restricted Work Case
- S/S Sub-Station
- SBM Standby Man
- SDS Safety Data Sheet
- SEPA Sindh Environmental Protection Agency
- SEQS Sindh Environmental Quality Standards
- SOP Standard Operating Procedure
- SRL Self-Retractable Lifeline
- T Transmission
- TLD Thermo Luminescent Dosimeter
- TN Transmission Network
- TRA Task Risk Assessment
- TRIR Total Recordable Injury Rate
- WI Work Instructions

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## 5.0 INTRODUCTION TO KE:

### 5.1 Our Vision:

To restore and maintain pride in KE, Karachi and Pakistan.

### 5.2 Our Mission:


Brightening lives by building the capacity to deliver uninterrupted, safe and affordable power to Karachiites.

### 5.3 Our Values:


At K-Electric, our employees are the key driver of our success. This ethos is reflected in our values – CARES – which define our corporate culture.





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## 6.0 CORPORATE HSEQ POLICY:

		<b>CORPORATE HSEQ POLICY</b>			
<b>KE/CHSEQ/PO/001</b>	<b>08</b>	<b>June 2025</b>	<b>May 2028</b>	<b>1 of 1</b>	<b>Corporate HSEQ</b>
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We at KE believe in the continual improvement of our Occupational Health, Safety, Environmental and Quality performance, protection of human rights, the well-being of our employees, contractors, customers, visitors and the community, and transparent stakeholder engagement, while consistently meeting our customers' requirements. To achieve these goals, we are committed to:

- Comply with the applicable laws, regulations and permit requirements, applicable international conventions and standards, project specific environmental and social obligations and manage our operations consistent with Good International Industry Practice.
- Establish and maintain an Integrated HSEQ Management System which identifies measurable objectives and targets, hazards, risks and impacts, responsibilities, and includes systems of performance review, monitoring, evaluation and transparent reporting.
- Achieve a target of Zero Occupational Health, Safety and Environmental accidents by adopting a proactive system of hazard identification, risk management and timely provisioning of resources.
- Provide a safe and healthy work environment, including properly maintained equipment, tools and facilities, adequate personal protective equipment and regular training and induction programs.
- Promote a safe, equitable, and inclusive workplace with zero tolerance to child and forced labor, ensuring a work environment free of harassment or discrimination on the basis of gender, nationality, religion, sexual orientation, or any other personal or cultural attribute.
- Proactively assess the environmental impacts of our activities, conserve natural resources, prevent pollution, manage waste streams according to the waste mitigation hierarchy, protect biodiversity, reduce carbon footprint and manage climate change risks.
- Ensure community health and safety, support local development, promote women's rights, and maintain informed consultation and participation with stakeholders and affected communities.
- Adopt a risk-based approach to incorporate public safety considerations into business practices and decisions.
- Encourage dialogue with internal and external stakeholders to promote awareness and set up a grievance mechanism for workers and the community to express concerns without retaliation.
- Deliver consistent, reliable, and efficient services through compliance with international standards, customer satisfaction and continual improvement initiatives, and performance-driven quality assurance.

KE will monitor and review this Policy on a regular basis to ensure that it continues to support and encourage a high standard of HSEQ performance.

  
**Syed Moonis Abdullah Alvi**  
**CHIEF EXECUTIVE OFFICER**  
**Date: 05-June-2025**





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### 7.0 **SMOKE FREE WORKPLACE POLICY:**

#### 7.1 **Policy Statement:**

To promote a healthy working environment, all forms of smoking are prohibited at all KE locations Including (but not limited to) Office buildings, Power plants, Grids, Integrated Business Centers, Control centers, Learning and training institutions, workshops, stores, construction & project sites and all hired and owned vehicles of K-Electric except at the “Designated Smoking Area”.

#### 7.2 **Communication:**

- The policy shall be made available to all new employees during orientation.
- The policy shall be communicated to all employees, contractors and visitors to the company sites including external clients / vendors together for compliance.
- The company shall ensure demarcation of both designated smoking and smoke free areas.

#### 7.3 **Responsibility:**

- Responsibility for implementation of the policy lies with the location owner.
- All KE employees, including contractual staff are responsible to take reasonable care for health and safety of themselves and others and adhere to the requirements of smoke free workplace policy and cooperate with the management in creating a smoke free healthy working environment.

#### 7.4 **Visitors:**

It is the responsibility of all KE employees to ensure that visitors, guests including external clients, must adhere to smoke free workplace policy.

#### 7.5 **Smoking Prohibited Areas:**

- Smoking shall be prohibited at all Business units (BU) of KE (including all functional units related to BU).
- Smoking is also prohibited in company owned and contractor vehicles including MTLs and special vehicles
- Smoking is not permitted in the following areas:
  - Main entrances
  - Lifts
  - Corridors and stairways
  - Canteens/cafeteria
  - Rest room/toilets
  - Meeting rooms
  - Car Parks
  - Smoking is also not allowed outdoors in any of the grassy areas and near flammable objects.

#### 7.6 **Designated Place/Area for Smoking:**

Smoking shall only be allowed in a designated area with clearly displaying “Smoking Area”. Location owners designate the smoking area in coordination with relevant HSE professionals after reviewing the risk and safety measures.

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### 7.7 Violations:

To enable individuals to become accustomed to the restrictions on smoking, employees breaching the policy will be supported with counselling and education process. If the individual persists in breaking these rules, he / she will be subjected to disciplinary action.

### 7.8 Facilities for Smokers:

- a) Smoking area to be an area that is not substantially enclosed by a roof or walls, stairs or passage.
- b) It should be an outdoor area at least four meters away from any door or window into which smoke cannot drift.
- c) The “Smoking Area” should be equipped with ashtrays or non-combustible covered receptacles for the disposal of waste.


### 7.9 Applicability:

This policy is applicable to all the employees working for KE including contractual staff in all BU’s (Distribution, G & T, Support Departments) as well as Visitors.

**NOTE: This policy is applicable to all events planned by or for K-Electric.**

**Note:** For details of the above section, refer to below document(s):

- KE-SP-036 - Smoke Free Workplace Policy

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## **8.0 DRIVING AND TRANSPORT SAFETY POLICY:**

### **8.1 Scope:**

This section covers the policy to establish mitigation measures pertaining to traffic movement and transportation at all KE locations / sites.

Requirements of this policy apply to all company staff (KE or OSP), contractors, suppliers that drive any vehicle which is owned, leased, rented or contracted by K-Electric or by an employee for company business.

This policy applies to everyone in KE who operates a motorized vehicle (automobile, two-wheeler, MTL, special vehicles etc.) for company business. This includes workers who travel to and from their home to KE offices and work sites in personal transportation (automobiles and two-wheelers) or they are a passenger in a motorized vehicle.

### **8.2 Policy Statement:**

To minimize risk and ensure that procedures for driving qualification and practices are followed, this policy applies to all KE locations. The policy also provides the foundation for building a driver improvement program. The following shall be implemented in all locations in accordance with local standards and regulations. All relevant Legal/Regulatory and Statutory requirements are applicable.

#### **8.2.1 Driver Training & Qualification:**

Only qualified & approved drivers (as per Fleet Management Criteria) with a valid vehicle driving license and fulfill all requirements (such as training / certification) for the vehicle that the person is operating, are allowed to drive vehicles on behalf of KE including company-owned, leased vehicles or rented for business purposes.

Approval by Fleet Management will only be granted to those who possess a valid driving license that satisfies the federal, provincial and local government requirements to drive the specific vehicle in the area of operation.

For Special Vehicles, Operator and Equipment shall be certified by reputed certifying agency / institute.

**8.2.2** KE employees operating a vehicle at any KE location, will have an annual review of this Policy. KE employees operating a vehicle in Company Business more than 1500Km per year shall have the following training:

- Defensive Driving initial training – New Inductees (by FM through External Training firm)
- Defensive Driving refresher training every 3 years (by FM through External Training firm)
- KE driving and Transport Safety policy (By CHSEQ through Internal Resource)

**Note:** For Hired vehicle, KE Driving and Transport Safety requirements shall be made part of vendor P.O. contracts.

### **8.3 Vehicle Condition:**

All KE Vehicles, including company-owned, leased vehicles or rented for business purposes, must be inspected and confirmed to be in safe working conditions (fit for purpose) by the driver before using. Initial availability will be ensured by FM, while regular maintenance / availability will be ensured by the User Department. Vehicles accompanying the passengers for official trips should have the following mandatory items:

- Airbags,
- ABS system,

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- c) First aid box & Fire extinguisher,
- d) Seat belts,
- e) Safety Cones (Excluding Personal Cars),
- f) Reverse Alarm (Excluding Personal Cars).

**Note:**

- Existing KE Own, Hired and Leased vehicles, without provision of ABS and Airbags, are to be replaced with ABS and Airbags equipped vehicles within TEN (10) years from the date of issuance of KE Driving and Transport Safety Policy.
- All vehicles without Seat Belts are to be equipped with Seat Belts within three months from the date of issuance of this KE Driving and Transport Safety Policy.
- The vehicle in use by KE, whether owned or hired, should be used as per the recommended life span of OEM in term or KM or years, whichever comes earlier. Afterwards, it should be replaced upon completion of its useful life. As the first step, Salvage life for KE Own, Hired and Leased (Light Duty Vehicles) will be 25 years. Replacement shall be ensured within two (02) years, after promulgation of this SOP.
- Special Vehicles (Forklift, Lifters, Loaders and Cranes etc.) are subject to satisfactory third-party testing of compliance, hence salvage life requirement is not applicable to Special vehicles.

**Note:** For details of the above section, refer to below document(s):

- KE-SP-037 - Driving and Transport Safety Policy

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## 9.0 **NEPRA POWER SAFETY CODE-2024 REQUIREMENTS:**

### 9.1 **Compliance to The Legal and Other Requirements:**

S No	Law / Regulation / Standard	Area of Focus	Description	Applicability
<b>NEPRA Code / Regulations / Standard</b>				
1	NEPRA Power Safety Code - <u>2024</u>	HSE	A) Development and implementation of HSE Manual as prescribed in NEPRA PSC. B) Procedures through locally prepared, documented procedures and/or other systems	G&T, D
<b>Environmental Laws – National &amp; Local</b>				
1	Pakistan National Conservation Strategy (NCS) 1992	Environment	It is a broad-based policy statement aimed at achieving environmentally sustainable social and economic development in Pakistan.	General
2	National Environmental Policy 2005	Environment	Aims to protect, conserve, and restore Pakistan's environment to improve the quality of life of the citizens through sustainable development. It provides broad guidelines for addressing environmental concerns and ensuring effective management of their environmental resources.	General
3	The Sindh Environmental Quality Standards (SEQS) 2016	Environment	SEQS have uniform standards applicable to all kinds of industrial and municipal effluent. There are 32 parameters prescribing permissible levels of pollutants in liquid effluent while 16 parameters for gaseous emission.	Plants/construction on sites in Sindh
4	The Sindh Environmental Quality Standards Regulations 2014	Environment	<u>For hiring certified Environmental laboratory to test and analyze samples of air, water, soil, effluents or wastes to determine their compliance with the SEQS.</u>	Plants/construction on sites in Sindh
5	The Environmental Samples Rules 2014	Environment	For detailed sampling procedures, tests and analysis of effluent, air, and soil.	G&T
6	<u>The Sindh Environmental Quality Standards (Self-Monitoring and Reporting by</u>	<u>Environment</u>	<u>On the basis of the pollution level, industrial units are classified into Categories A, B and C; these are responsible for the timely submission of Environmental Monitoring Reports to the Environmental Protection Agency.</u>	<u>Power Plants</u>

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	<u>Industry) Rules 2014</u>			
7	<u>Key environmental guidelines present in Pakistan Environmental Assessment Procedures 1997</u>	<u>Environment</u>	<u>Policy and procedures for filing, review and approval of environmental assessments. b) Guidelines for the preparation and review of Environmental reports. c) Guidelines for Public Consultation. d) Guidelines for Sensitive and critical areas.</u>	<u>Project Planning (Generation, Transmission &amp; Distribution)</u>
8	<u>Sindh EPA Environmental Assessment Regulations, 2021</u>	<u>Environment</u>	<u>It categorizes development projects for Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA) or Environmental Checklists, provides guidelines on review process, public participation, communication and condition of approval.</u>	<u>Project Planning (Generation, Transmission &amp; Distribution)</u>
9	National Climate Change Policy 2012	Environment	It provides solid foundational framework for ensuing Climate Change Action Plans, Programs and Project. The vulnerabilities of various sectors (including energy sector) to climate change have been highlighted and appropriate adaptation measures spelled out	General
10	<u>National Climate Change Act 2017</u>	<u>Environment</u>	<u>The Act calls for establishment of independent Authority under the guidance of high-powered Pakistan Climate Change Council to provide a framework for mitigating and adapting to the effects of the changing climate on various sectors of the economy and developing response strategies to climate change.</u>	<u>General</u>
11	<u>Pakistan Environmental Protection Act (PEPA) 1997</u>	<u>Environment</u>	<u>To provide for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development. It is the apex environmental law of the country</u>	<u>All BUs</u>
12	<u>Balochistan Environmental Protection Act (BEPA) 2012</u>	<u>Environment</u>	<u>To provide for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development across the Province of Balochistan.</u>	<u>BUs located in Province of Baluchistan</u>
13	<u>NEPRA Licensing Regulations 1999</u>	<u>Environment</u>	<u>NEPRA Licensing Regulations and accompanying Schedule III enlists the documents to be submitted along with the</u>	<u>New thermal power generation/</u>

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			<u>application for license. These documents include an Environmental &amp; Social Soundness Assessment Report for new thermal power generation facilities, and emission values and environmental monitoring data for the last five years for existing thermal power generation facilities.</u>	<u>Special purpose transmission facilities</u>
14	<u>The National Environmental Quality Standards (NEQS) 1993</u>	<u>Environment</u>	<u>NEQS are uniform standards applicable to all kinds of industrial and municipal effluent. There are 32 parameters prescribing permissible levels of pollutants in liquid effluent while 16 parameters for gaseous emission.</u>	<u>Plants/construction on sites in Baluchistan</u>
15	<u>The National Environmental Quality Standards (NEQS)</u>	<u>Environment</u>	<u>Provides maximum concentration limits for ambient air, drinking water quality and noise.</u>	<u>Plants/construction on sites in Baluchistan</u>
16	The Hazardous Substances Rules 2014	Environment	<u>Provide guidelines for grant/renewal of license for Handling, Storage and Disposal of hazardous substance.</u>	Generation, Transmission, Distribution, Support
17	Port Qasim Authority Act 1973-Amendment made vide Port Qasim Authority Ordinance 2002.	Environment	<u>71B: The Authority shall be responsible for maintaining marine environments of the port's limit to ensure that sea, land, and air is free from pollution</u> <u>71C: No proponent of a project shall commence construction or operation unless he has filed with this Authority as IEE or EIA and has obtained approval.</u>	Plants & Grids established in PQA
18	The Antiquities Act 1975	Environment	To ensure that no activity is undertaken within 200 ft of a protected antiquity, and to report to the department of Archeology, Govt. of Pakistan, any archeological discovery made during the project.	Project Planning
19	<u>Sindh Cultural Heritage (Preservation) Act 1994</u>	<u>Environment</u>	<u>To preserve and protect ancient places and objects of architectural, historical, archaeological, artistic, enthonological, anthropological and national interest in the Province of Sindh.</u>	<u>Project Planning in Sindh</u>
20	National Energy Conservation Policy (NECP) 2006	Environment	To achieve energy efficiency improvement in industries by providing support to industry for energy audits; better housekeeping and	General

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			implementing low cost and fast payback energy conservation measures.	
21	<u>Sindh Wildlife Protection Ordinance 1972</u> Sindh Wildlife Protection (Amendment) Act 2008	Environment	The Sindh Wildlife Ordinance 1972 empowers the government to declare certain areas reserved for the protection of wildlife and to control activities within these areas. It also provides protection to endangered species of wildlife.	Project Planning Construction / O&M activities
22	<u>Factories Act 1934</u>	<u>Environment</u>	<u>These are not entirely environment related laws but do incorporate many clauses pertaining to general environmental conditions and occupational health and safety issues. It also provides regulations for handling and disposing of toxic and hazardous materials.</u>	<u>All BUs</u>
23	<u>Sindh Factories Act 2015</u>	<u>Environment</u>	<u>These are not entirely environment related laws but do incorporate many clauses pertaining to general environmental conditions and occupational health and safety issues. It also provides regulations for handling and disposing of toxic and hazardous materials.</u>	<u>All BUs</u>
24	<u>Sindh Occupational Safety and Health Act, 2017</u>	<u>Environment</u>	<u>The Act makes provision for Occupational Safety and Health conditions at all workplaces for the protection of persons at workplaces against risk of injury arising out of the activities at work places and the promotion of safe, healthy and decent working environment adapted to the physical, physiological and psychological needs of all persons at work.</u>	<u>All BUs</u>
25	<u>Sindh Occupational Safety and Health Rules, 2019</u>	<u>Environment</u>	<u>These rules have been framed under Sindh Occupational Safety and Health Act, 2017</u>	<u>All BUs</u>
26	Cutting of Trees (Prohibition) Act, 1975	Environment	This Act prohibits cutting or chopping trees without permission of the Forest Department.	Project Planning Construction / O&M activities
<b>National and Provincial Health and Safety Laws / Regulations</b>				

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1	The Sindh Factory Act 1934 as amended to 2015 (Chapter 3- Clause 25)	Fire Safety	<ul style="list-style-type: none"><li>- Precautions in case of fire. -</li><li>- Every factory shall be provided with such means of escape in case of fire</li><li>- In every factory the doors affording exit from any room shall not be locked or fastened so that they can be easily and immediately opened from insides and all times be kept free from any obstruction.</li><li>- In every factory every window, door or other exit affording means of escape in case of fire, other than means of exit in ordinary use, shall be distinctively marked in a language understood by the majority of the workers and in red letters of adequate size or by some other effective and clearly understood sign.</li><li>- In every factory there shall be provided effective and clearly audible means of giving warning in case of fire to every person employed therein.</li><li>- The Provincial Government may make rules prescribing in respect of any factory, or class or description of factories, the means of escape to be provided in case of fire and the nature and amount of firefighting apparatus to be provided and maintained</li></ul>	G&T, D
2	Building Code of Pakistan Fire Safety Provisions- 2016	Fire Safety	The Building Code provides rules for fire prevention, life safety in relation to fire and fire protection of buildings and structures.	G&T, D
3	The West Pakistan Factories Canteen Rules, 1959 read with Factories Act 1934(Chapter 3, Section 24) and The Sindh Factories Act, 2015(Chapter3, Section 27)	Health and Safety	House Keeping, Hygiene and Food safety in Canteens	G&T, D
4	West Pakistan Hazardous	Health and Safety	Special emphasis on Sand Blasting	G&T, D

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	Occupations rules, 1963			
5	The West Pakistan Labor Camps Rules, 1960 read with The Sindh factories Act, 2015 (Chapter 3)	Health and Safety	Lay-out, water supply, Contentions, and sanitation in Labor Camps at project sites	G&T, D
6	Pakistan Penal Code 1860	Health and Safety	It deals with the offences where public or private properties and/or human lives are affected due to intentional or accidental misconduct of an individual or body of people	G&T
7	Boilers Act 1923	Safety	Hydraulic Tests, Inspections, and overall safe operation of Boilers	G
8	The Boilers and Pressure Vessels Ordinance 2002	Safety	As above	G
9	Nuclear Safety & Radiation Protection Ordinance, 1984	Safety	Safe storage of radio isotopes and disposal of Radiography films	G
10	Pak Nuclear Regulatory Authority Ordinance 2001	Safety	Same as above	G
11	Motor Vehicles Rules 1969	Safety	Vehicles operations and Driving	G&T, D
12	Drugs Act 1976	Safety	safe Storage, distribution of drugs	G&T, D
13	Explosive Substance Act 1908 and The Petroleum Rules 1937	Safety	Transport, storage of furnace Oil, HSDO, petroleum, kerosene oil and other inflammable substances	G&T
14	The Electricity Act 1910, Electricity Rules 1937	Safety	It provides a legal base for power distribution and obligates licensee to pay compensation for any damage caused during the constructions and maintenance of any power distribution / transmission facilities.	G&T, D
15	Factories Act 1934 (Chapter 3; Sections 13 to 24 & N33.	Health and Safety	Provision for Drinking water, Lighting, housekeeping, First Aid, Firefighting Arrangements, Trainings, ventilations, Toilets, Lifting equipment's & gears inspections	G&T, D

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16	Sindh Factories Rule 2015 (Chapter 3. Sections from 15 to 27 & 51.)	Health and Safety	These are not entirely environment related laws but do incorporate many clauses pertaining to general environmental conditions and occupational health and safety issues. It also provides regulations for handling and disposing of toxic and hazardous materials.	G&T, D
17	Prohibition of Smoking and Protection of Non-smokers Health Ordinance – 2002	Health	Prohibition of smoking in public and workplaces and designation of exclusive smoking zones for smokers	G&T, D
18	Sindh Occupational Safety and Health Act, 2017 and Sindh Occupational Safety and Health Act, 2019	Health and Safety	It covers Safety, Health, and Fire Safety ensure safe and healthful working conditions for workers by setting and enforcing standards and by providing training, outreach, education and assistance.	G&T, D

**Note:** This legal Register is an immediate reference point for all the legal obligations that shall be applicable to KE (Every BU has developed Compliance Matrix of their department/locations)

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause 7.1
- KE-SP-016 - Environmental Legal Procedure.

## **9.2 HSEQ Management Team:**

### **9.2.1 General Requirements:**

KE is committed to promoting the highest standards of HSE for minimizing risks to human health and the workplace environment. KE has established a Safety Management System and has a dedicated HSE team across all business units (Generation, Transmission, Distribution, & Enabling) who are devoted to providing safe work conditions to its employees, contractors, customers and the public as well as preserving the integrity of our environment. The HSE requirements are specified in accordance with relevant national (NEPRA, Factory Ordinance, EPA) and international (DuPont Process Safety Management System, ISO 45001, ISO 14001 and ISO 9001) standards and legislation.

The maintenance and continual improvement of the HSEQ Management Systems shall be pursued by performing PDCA Cycle.

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### 9.2.2 Safety Personnel Responsibilities:

The safety professionals should:

- Verify implementation of Corporate HSEQ Policy in alignment with corporate intent.
- Verify implementation of HSE rules, standards, and procedures in operations & project activities including turnaround/annual outage.
- Provide consultation & technical knowledge to all levels of management in the areas of HSE & fire protection.
- Should assign (in coordination with IHU Doctor) a classification to each injury in accordance with OSHA requirements, develop and maintain records of all incidents. Track injury/incident data, analyzing & highlighting areas of concern.
- Steward & assist in mandatory safety training compliance
- Should screen all purchases of safety equipment other than reorders of equipment already approved by the site.
- Should assist in the orientation of new employees to inform them of their safety responsibilities.
- Should assist and lead the investigation of serious injuries and incidents.

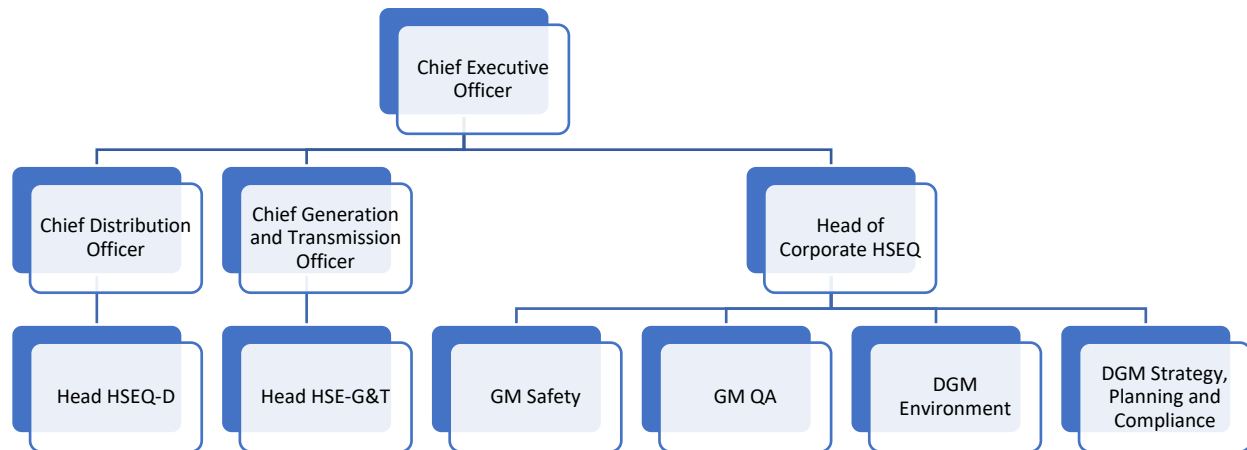
### 9.2.3 HSEQ Organization:

At K-Electric, each employee has a role to play since safety is a common responsibility; it is a deliberate & conscious commitment of every individual working for K-Electric that he or she shall endeavor to make a positive difference in the system, to make it safer.

BU HSE's shall take guidelines from Corporate HSEQ Manual to develop their own manual and HSE coordinators are responsible for ensuring the compliance of these manuals and procedures.

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#### 9.2.4 Organogram – CHSEQ:



#### Note:

KE management has established a corporate HSEQ department which directly reports to CEO, and furthermore KE has also established respective BU HSE departments under BU Distribution and BU G&T Business. There are also safety coordinators at each Plant / Transmission Departments / Distribution Cluster / Location etc.

#### 9.2.5 Minimum HSE Staffing in Project:

- The HSE management team is independent in all its functions under the direct control of Project Heads.
- HSE management team is deployed to oversee critical activities.
- Responsibilities and duties of the HSE management team are clearly defined.
- KE shall provide full-time and experienced, qualified and trained HSE staff to execute, coordinate and implement the HSE Management System / Manual.
- The minimum number of HSE personnel for generation, transmission, distribution activities and enabling functions shall be evaluated on a case-to-case basis, depending upon the level of risk, the criticality of activities, service territory & jurisdiction and the need for supervision. Moreover, HSE positions shall not be filled by irrelevant officials without relevant qualifications and certification. The appointed/deputed HSE personnel shall be experienced and competent with technical background for the defined roles and responsibilities and possess at least one of the approved safety qualifications, such as ISO-45001, CSP, ASP, NEBOSH, NVQ, NFPA 70E, or any other approved HSE qualifications, certificates, diplomas, or degrees including knowledge of international standards and codes such as ISO 14001, ANSI, ASTM, IEEE, IEC, NFPA and other applicable legal requirement.



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- f) The table below provides the minimum number of HSE staff required at construction project sites as per NEPRA:

Table: Contractor Minimum HSE Staff Requirements			
Total No. of Employees	HSE Manager or Equivalent Position Required	Minimum No. of HSE Supervisor(s) Required	Minimum No. of HSE Officers/Inspectors Required
1 to 9	No	No	Shall be supervised by Client
10 to 25	No	No	1
26 to 50	No	1 Supervisor	1
51-250	Yes	2 Supervisor	2
251 to 500	Yes	3 Supervisor	1 HSE Officer/Inspector for 50 Employees (or part thereof)
501 to 1,000	Yes	1 Supervisor for every 10 safety Officers/Inspectors (or part thereof)	1 HSE Officer/Inspector for 50 Employees (or part thereof)
1,001 to 5,000	Yes	1 Supervisor for every 10 safety Officers/Inspectors (or part thereof)	20 HSE Officers/ Inspectors plus additional 1 HSE Officer/Inspector for 100 Employees (or part thereof)
5,001+	Yes	1 Supervisor for every 10 safety Officers/Inspectors (or part thereof)	60 HSE Officers/ Inspectors plus additional 1 HSE Officer/Inspector for 150 Employees (or part thereof)

- g) KE shall upload HSE staff contact details to NEPRA's Data Exchange Portal as mentioned in Annexure-1 "HSE Team Contact Details" within seven (07) working days. KE shall also upload the revised and updated contact list, in case of new recruitment, transfer, resignation or in case of HSE organization change.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause 7.2
- KE-CHSEQ-PSM-03 - Integrated Organization Structure

### 9.3 Communication Plan:

#### 9.3.1 Purpose:

KE has maintained a high level of communication to establish an effective communication program. It includes:

- Development of a meaningful message.
- Delivery of that message.
- Verifying that the message is understood.

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Senior management plays an important role in developing the message; the entire line organization delivers the message and ensures that it is understood. To ensure effectiveness, communication flow covers both the management to employees and from employees back to management.

### 9.3.2 Scope:

It is applicable in all business units of KE i.e. Generation, Transmission, Distribution and Enabling functions.

### 9.3.3 Summary:

The basic goal of any safety program is to prevent injuries and illnesses to prevent damage to assets. It is important that people understand how to avoid injury and, more important, that they choose to do so. An essential element of any HSE program is good communication. Safety professionals must communicate the program's contents to supervisors and team leaders, who must, in turn, effectively communicate with their teams. They must be able to effectively explain their plans for preventing accidents and creating a safer workplace.

This section emphasizes & elaborates the importance of Effective Communication in prevention of occupational accidents / illnesses and achieving safety goals and objectives.

### 9.3.4 Method of Communication:

The three methods of communication are oral, written and nonverbal. Different methods are appropriate in different situations. Supervisors may choose to combine the methods. For example, they may explain job procedures face-to-face, pointing out the hazards and showing operators how to do the jobs safely. They may also give workers a job safety analysis form that reinforces these points.


- a) Oral Communication
- b) Written Communications
- c) Non-Verbal Communications

### 9.3.5 Safety Communication Goals:

The most significant safety communications are one-on-one communications from the supervisor to those people working for him or her. The communication is reinforced through:

- a) The safety policy statement
- b) Safety Induction
- c) Training
- d) Rules and procedures
- e) Safety goals and objectives
- f) Personal one-on-one messages
- g) Job safety analysis
- h) Toolbox meetings
- i) Work group safety meetings
- j) HSE Newsletters
- k) D-Level Safety Talks
- l) Supplementary paths of communication such as Safety signs, slogans, posters, and incentives.



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### 9.3.6 **External Communication Protocol:**

All major incidents / injuries at KE shall be reported to NEPRA or other Regulatory bodies as and when required through below protocol.

Description of Reporting	Responsibility	Submitted To	Timeline (Post Incident)	Communication Medium
(Work & Non-Work Related) and Public Incident				
<b>NEPRA Incident Notification form</b> <ul style="list-style-type: none"> <li>All Workforce reportable injuries (KE, OSP, PQC, EPCC or STC)</li> <li>All Process Safety Incident whose score is greater than equal to 130 or impact greater Public Impact.</li> </ul>	Line HSE Coordinator	BU HSE	12 hrs.	Email
<b>NEPRA Incident Notification form</b> <ul style="list-style-type: none"> <li>All Workforce reportable injuries (KE, OSP, PQC, EPCC, or STC)</li> <li>All Process Safety Incident whose score is greater than equal to 130 or impact greater Public Impact.</li> </ul>	BU HSE	CHSEQ	16 hrs.	Email
<b>NEPRA Incident Notification form</b> <ul style="list-style-type: none"> <li>All Workforce reportable injuries (KE, OSP, PQC, EPCC, or STC)</li> <li>All Process Safety Incident whose score is greater than equal to 130 or impact greater Public Impact.</li> </ul>	CHSEQ	Upload on NEPRA portal	24 hrs.	NEPRA Portal
<b>NEPRA Form C-4</b> <ul style="list-style-type: none"> <li>For all Workforce Fatal &amp; LWI Incidents (Electrical)</li> <li>For all Public Fatal &amp; Non-Fatal Incidents including Animal Incident</li> </ul>	Line HSE Coordinator	BU HSE	12 hrs.	Email
<b>NEPRA Form C-4</b> <ul style="list-style-type: none"> <li>For all Workforce Fatal &amp; LWI Incidents (Electrical)</li> <li>For all Public Fatal &amp; Non-Fatal Incidents including Animal Incident</li> </ul>	BU HSE	CHSEQ	16 hrs.	Email
<b>NEPRA Form C-4</b> <ul style="list-style-type: none"> <li>For all Public Fatal &amp; Non-Fatal Incidents including Animal Incident</li> </ul>	CHSEQ	Regulatory Affairs	24 hrs.	Email





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## 9.3.7 HSEQ Roles & Responsibilities:

S. #	Category	HSE-Distribution	HSE-G&T	Corporate HSEQ
1	Accident Reporting & investigations	Accident and incident reporting (Public & Employee) to CHSEQ (within 30 minutes) Form C-4 to be submitted by line to CHSEQ	Accident and incident reporting (Public & Employee) to CHSEQ (within 30 minutes) Form C-4 to be submitted by the line directly to CHSEQ	- Accident & Incident reporting to NEPRA (Form C4) - Incident Investigation Procedure (all BUs) C-4 Form CHSEQ is prime custodian
2	Investigation follow up for closures	Ensure timely closures of accident investigation recommendations	Ensure timely closures of accident investigation recommendations	Investigation follow up till closure shall be done by CHSEQ
3	HSE Audits	Conduct region/department safety audits (SLA)	Facilitate CHSEQ in conducting safety audits (SLA)	- Conduct process safety audit of HSE-D - Conduct safety audit of BU G&T & BU Support Services (SLA)
4	Safety Inspections and Management Safety Audits (MSA)	Conduct safety inspections/ BBS walks covering below elements; - Accident prevention plan (DAPP, PAPP) formulation & inspection - Ensure Regulatory & Legal Compliance through inspections	- Preparation & execution of Accident Prevention Plan covering both employees & public - Ensure timely closure of inspection observations with coordination of respective safety coordinator/Line management Corp HSEQ will provide DAPP Guidelines	- Spot check/ safety Inspections of BU G&T & SS - Oversight DAPP of BU G&T & BU Support Services
5	Policy & Procedures	Develop and review BU HSE Manual/ Procedures and ensure implementation	Develop and review BU HSE Manual/ Procedures and ensure implementation	Develop and review HSE Policy & Manual/ Procedures for implementation
6	Quality Oversight	-Shall conduct quality inspections -Quality is managed at Cluster Level	Shall facilitate CHSEQ in conducting Quality inspections	- Safety alerts & advisory notification - Lead organizational HSE Program through conduct of "Safety Leadership Committee"

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				<ul style="list-style-type: none"> <li>- Marketing Collateral, Media Campaign, Safety awareness campaign</li> <li>- Sample based oversight of Risk assessments (All BUs)</li> <li>- Review BU HSEQ plans for new/ major projects</li> <li>- Facilitate BU G&amp;T and BU Support Services for International HSEQ certification standards</li> </ul>
7	Safety Trainings	<ul style="list-style-type: none"> <li>- Plan and conduct safety trainings</li> <li>- Public awareness sessions</li> </ul>	Public awareness sessions	<ul style="list-style-type: none"> <li>- Plan &amp; conduct HSE training program for new inductees - MS (All BUs)</li> <li>- Conduct safety trainings and refreshers for BU G&amp;T and BU Support Services</li> </ul>
8	Internal Safety Awards	<ul style="list-style-type: none"> <li>- Conduct monthly safety awards within BU</li> <li>- Conduct annual safety awards (SLA)</li> </ul>	-	<ul style="list-style-type: none"> <li>- Conduct annual safety awards (SLA) for BU - G&amp;T &amp; BU Support Services</li> <li>- Conduct annual safety internal awards (EEA &amp; Fire Safety) for all BUs</li> <li>- Conduct monthly safety awards for BU G&amp;T and BU Support Services</li> </ul>
9	External Engagements	-	-	<ul style="list-style-type: none"> <li>- Plan &amp; participate for external HSE awards</li> <li>- Facilitate HSE due diligence for financial institutions</li> <li>- Regulatory &amp; Legal Compliance</li> </ul>
10	Emergency Response Mechanism	An emergency response mechanism shall remain under operational control.	Facilitate CHSEQ in development of Emergency plan and ensure implementation	<ul style="list-style-type: none"> <li>- Liaison with PMD and PDMA shall be with CHSEQ, who shall also be responsible for raising of "flag" under emergency rain/weather conditions/heat wave etc. This raising of flag shall activate BU's emergency plan as deemed appropriate by BU head</li> </ul>



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11	Environment Management	-	-	All BUs - Legal and Regulatory Compliance of Environmental laws - Plan and conduct biannually AEEA Audits - Environmental Awareness and Trainings - EIA / IEEs Management
12	IHU functions	-	-	All BUs - Compliance with legal requirements of Factories Act, SEPA Regulations or other National Occupational Health Laws - Issue health advisories to prevent epidemic & endemic diseases - Conduct Hygiene Inspections of work locations including canteens - First aid training & First Aid box provision & replenishment - Investigation & classification of injuries to victims in case of accidents
13	Fire Safety Management	-	-	All BUs - Provide Fire Prevention and Fire Safety guidelines to BUs - Provide advice to Works Department on installation of fire safety equipment in buildings - Provide and/or recommend fire safety training for BUs - Fire safety audit of organization. - Oversight of fire safety training and drills at selected locations - Training of Emergency Controllers - Review of ERP - Annual and on occurrence replenishment of fire extinguishers at all KE locations (except Generation plants, who maintain their own inventories)

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- NEPRA Power Safety Code 2024 Clause 7.3
- KE/CHSEQ/PSM/08 – Effective Communication
- KE/CHSEQ/PSM/11(1) - Incident Investigation Procedure
- KE Consolidated Business Continuity Plan

## **9.4 Risk & Impact Management:**

### **9.4.1 Purpose:**

The purpose of this procedure is to outline the process of HSE & Social Risk Management and its applicability to ensure that:

- HSE hazards of all activities and locations are identified, analyzed, risks are assessed, treated as required and controlled to “As Low as Reasonably Practicable (ALARP)” status.
- All social and community related issues are taken into consideration.
- HSE & social risk management process is properly documented to ensure periodic monitoring of risk and its traceability.

### **9.4.2 Scope:**

This procedure is applicable across all K-Electric (KE) facilities.

### **9.4.3 Risk Management Process:**

There is no one method for hazard identification and risk analysis. Generally, the type and rigor of the risk assessment process adopted shall depend on the potential severity of the harm that could occur and the likelihood of occurrence. For simplicity and standardization, we shall adopt the unified procedure with quantitative and qualitative analysis in parallel to each other in the following steps:

- Step 1 – Information Gathering
- Step 2 – Hazard Identification
- Step 3 – Review Existing Controls
- Step 4 – Assess the Risk
- Step 5 – Evaluate Risk and determine Acceptability

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause 7.4
- KE-SP-006 – HSE & Social Risk Management Procedure
- KE-SP-039 – Environment Aspect Impact Management Procedure

## **9.5 HSE Meetings:**

### **9.5.1 Purpose:**

The purpose of this section is to provide details of overall safety organization and its horizons with K-Electric

### **9.5.2 Scope:**

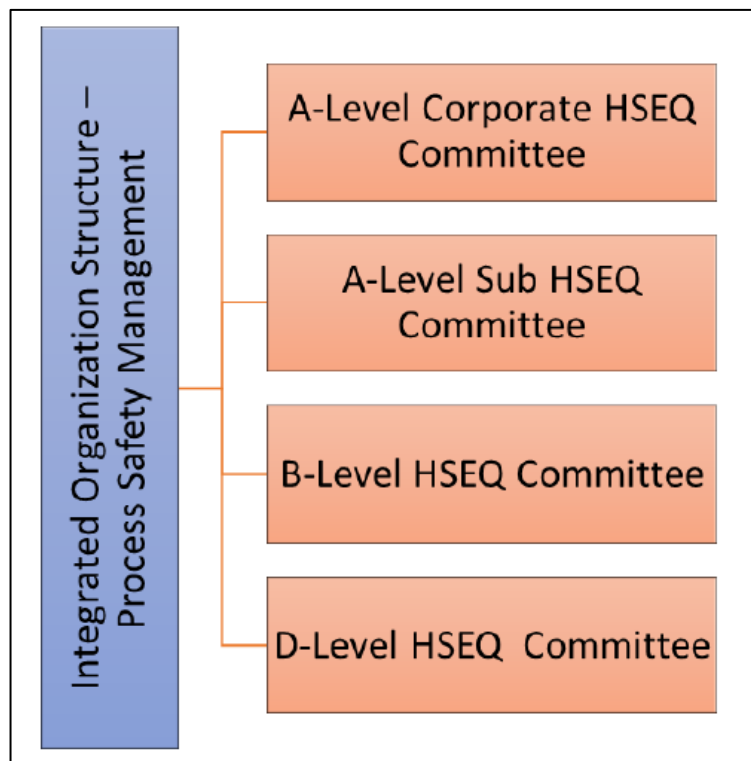
This section describes the requirement for complying with the Process Safety Management Element of Integrated Organization Structure and its applicability throughout K-Electric.

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### 9.5.3 Summary:

The purpose of the overall safety organization is to mobilize all available talent in the interest of safety, health, and environmental protection. It does not in any way relieve individual members of the line organization of their safety responsibilities; rather it provides additional resources upon which they can draw to execution of these responsibilities more effectively. Safety committees and safety meetings have proven to be effective means of formulating and carrying out company safety policies, gathering and disseminating safety information, enlisting employee participation in the safety effort, and generating and sustaining interest in safety. Committees are staffed principally by members of the line organization supplemented by safety staff members and other specialists. Below is the overview of the Integration Organization Structure.


SOP defines committee memberships, roles & responsibilities, functions, HSE goals, meeting frequency, sample framework/formulation of following.



- a) KE shall plan and conduct Safety Meetings at top management level (A level Corporate and A Sub-Level) on a quarterly basis to address the following:
- Review previous minutes of meeting.
  - Review the implementation and compliance of this Power Safety Code.
  - Review Annual HSE Goals, Objectives and KPI's for effective implementation.
  - Discuss HSE Performance and Statistics.
  - Discuss Near Miss/Incident Alert as lessons learnt.
  - Discuss critical Near Miss or Safety Suggestion, if any.
  - Review training plan and records.
  - Discuss safety issues related to operations, contractors, tools, equipment, work

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- Environment and work practices with proper resolution for mitigation.
- b) Attendance record shall be maintained for the period of one fiscal year.
- c) Meeting minutes shall be recorded, distributed and posted at notice board (*where applicable*) within three (03) working days.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.5
- KE/CHSEQ/PSM/03 - Integrated Organization Structure

## 9.6 **HSE Orientations:**

### 9.6.1 **Purpose:**

Safety induction / orientation plays a pivotal role at any organization to ensure employees, contractors and visitors are known to site safe work practices and its hazards. KE believes that **“ALL INJURIES ARE PREVENTABLE”**, then through this everyone will help KE to achieve its goal.

### 9.6.2 **Scope:**

This section is applicable to all KE locations.

### 9.6.3 **Summary:**

In KE, it is mandatory for all employees to get safety induction on on-boarding. However, contractors and visitors shall get safety inductions whenever they visit plants, regions, clusters, locations for any work or survey. While going through safety induction, the following areas should be covered during safety induction but not limited to:

- Corporate HSEQ Policy
- Smoke Free Workplace Policy
- Driving & Transport Safety Policy
- KE Cardinal Rules
- HSE Management System
- Emergency alarms and evacuation procedures
- Electrical safety
- Control of exit and entry to site and operating areas
- Personal Protective Equipment
- General safety rules and procedures at KE
- Major hazards & their subsequent controls
- Fire Emergency
- Incident Reporting etc.
- Introduction to Environment

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.6



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### 9.7 Job Specific Trainings:

#### 9.7.1 Purpose:

KE believes that all staff who are directly involved in maintaining safe operation of the plant/ regions/ cluster/ IBC/ departments must have and maintain the necessary knowledge and skills to safely execute their job functions. Through continuous training and coaching, we can make our operation safer and sustainable.

#### 9.7.2 Scope:

The section shall be applicable to all Business Units of K-Electric.

#### 9.7.3 Essential Features:

To ensure workplace safety and efficiency, the K-Electric must maintain a robust and regularly updated training program. This includes conducting training needs assessments and developing periodic plans for technical, job-specific training, especially for new employees, or those lacking required competencies. Short, skill-based courses should be designed for field staff, incorporating past incident case studies to enhance awareness. Trainers are selected based on expertise, and in-house trainers receive specialized training to improve their effectiveness. Refresher training is provided following major incidents, changes in processes or equipment, new risks, audit findings, or legal/technological updates.

KE shall provide Job Skills Competency Training primarily for new employees, or refresher training for those who have not been appointed as skilled, competent and authorized technician, electrician, wireman, or those who currently perform work beyond their obligatory scope of competence.

The Job Skills Competency Training /Activity Specific Training shall also comprise but not be limited to the following aspects as per job trade of a person:

##### a) HSE Principles:

- Identification, elimination, controlling of Hazards/Risks to avoid incidents,
- Identification of unsafe conditions/acts for safe operation.

##### b) Examples of Unsafe Acts:

- Operating without Authority or Warning,
- Working without PTW, when required,
- Operating or working at unsafe Speed,
- Making safety devices In-operative/bypassing,
- Use of unsafe equipment or improper use of equipment
- Unsafe Loading,
- Placing or Leaving Objects,
- Mixing improper Packing,
- Taking unsafe Position or Posture,
- Working on equipment without taking proper precautions,
- Non-vigilant and inattentive behavior,
- Distracting, Teasing or Startling,
- Failure to use safe clothing or protective equipment.

##### c) Examples of Unsafe Conditions:

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- Improper Guarding,
- Defective material or equipment,
- Hazardous arrangements,
- Hazardous weather,
- Hazardous place of work,
- Insufficient lighting,
- Improper ventilation,
- Unsafe Clothing,
- Unsafe Design & Construction.

### d) Operation & Maintenance:

- Operations & Maintenance Manual/ SOP's/ Work Instructions
- Shift Duties
- Reporting of duty in an unfit condition
- Assistance from employees not on duty
- Operation, Maintenance and Inspection of Equipment
- Fire Precautions
- Working in a confined space
- Working at height
- Working on the road
- Work in Substations! Grid! Hazardous Area
- Weather information
- Interference of animals
- Visitors
- Working of employees of other organizations
- Identification of operating equipment

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.7
- KE/CHSEQ/PSM/09 - Training & Development

## 9.8 HSE Awareness Trainings:


### 9.8.1 Purpose:

KE believes that all staff who are directly involved in maintaining safety of the plants/ regions/ clusters/ IBCs/ departments must have and maintain the necessary knowledge and skills to safely execute their job functions. Through continuous training and coaching, we can make our operation safer and sustainable.

### 9.8.2 Scope:

The section shall be applicable to all Business Units of K-Electric.



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### 9.8.3 Essential Features:

KE shall provide information, instruction, training and supervision to all their employees, to understand processes and risks, as governed by the national and provincial legal requirements, to ensure the safety of all personnel at the workplace.

Refresher training shall also be planned once every two (2) to five (5) years according to the validity of the training and nature of competency/ skill/ work area.

Following training but not limited to shall be part of HSE awareness sessions

- Safe Work Practices
- Working at Height & Scaffolding
- Confined Space Entry
- Excavation Safety
- Electrical Safety
- LOTOTOTO
- Process Safety Management
- Safety Induction
- First Aid & CPR
- Fire Protection & Prevention
- Emergency Response Plan
- Emergency Rescue
- Waste Management
- Spill Management
- Welding, Cutting & Grinding
- Crane & Lifting Equipment
- Radiography
- Sandblasting
- Manual Handling
- Hazard Communication / Safety Data Sheet (SDS)
- Office Safety & Ergonomics

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause 7.8
- KE/CHSEQ/PSM/09 - Training & Development


## 9.9 Control of Visitors & Animal Access:

### 9.9.1 Purpose:

The purpose of this section is to provide guidelines in establishing minimum safety standard for Control of Visitors and Animal Access to KE premises.

### 9.9.2 Scope:

This section is implemented on all Business Units/locations of KE.

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### 9.9.3 General Requirements:

All KE locations / departments / plants / regions / clusters / grid station / switchyard / substation / hazardous locations and IBC entry gates are secured or kept closed all the time to prevent unauthorized access of visitors, Animals and vehicles are restricted to KE operational areas. The following controls are in place at KE Locations:

- Visitors, employees of other departments and guests etc. are not permitted to access any KE location without prior intimation/ approval taken by concerned employee from security department and other stakeholders.
- Security Policy available and displayed at every location. No visitor/ employee is allowed to enter the KE Location/Premises without permission.
- All employees to accompany their guest/visitors.
- No visitor/ guest is allowed to visit any restricted/operational areas without the approval.
- All visitors shall be given orientation when entering Generation Plants and other KE locations
- Appropriate/ mandatory PPEs are provided to visitors for restricted and operational areas as per identified hazards and Risks/HSE requirements.
- All visitors/ contractors should be equipped with safety induction cards having information of site hazards, assembly points and emergency contact details whenever they visit KE Location and customers briefing on IBC desks.
- The panels and covers of energized equipment and circuits shall remain closed at all times until the system is declared dead, both for preventive and corrective maintenance purposes.
- All premises are secured and restricted for stray or street animals.

**Note:** For details of the above section, refer to below document(s):

- KE-Security-SP-001, Security Instructions
- KE-CHSEQ-RP-064 Access Control Guidelines
- NEPRA Power Safety Code 2024 Clause 7.9

## 9.10 Contractors, Sub-Contractors & Suppliers:

### 9.10.1 Purpose:

The purpose of this procedure is to ensure that contractor safety requirements of Process Safety Management are met. Further, the health and safety aspects of contractor employees are also managed in a systematic way.

KE believes that all jobs must be completed safely in accordance with established procedures and/or safe work practices consistent with KE's Process Safety Management (PSM) whether the tasks are completed by KE or Contractor Employees.

### 9.10.2 Scope:

This procedure is applicable across KE.

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### 9.10.3 Summary:

This section is intended to address the requirements and guidelines related to contractor safety, ensuring that:

- Contractors are capable of effectively managing the safety requirements
- KE Safety Expectations have been defined and shared with the contractor
- HSE plan has been defined for project
- Compliance status of HSE Plan is being monitored
- Good Compliance recognized
- Deviations are being corrected

### 9.10.4 Steps in Contractor Safety Management:

Steps in Contractor Safety Management are:

- Contractor HSE Pre-Assessment
- Contract Preparation
- Contract Awarding
- Orientation and Training
- Monitoring and Performance Management
- Contract Evaluations and Records

**Note:** For details of the above section, refer to below document(s):

- KE/CHSQ/PSM/12, Contractor Safety Management

## 9.11 Safety Instructions for Bulk Power / Single Point Supply Consumer:

### 9.11.1 Purpose:

To establish standardized safety practices for Bulk Power and Single Point Supply Consumers to ensure the safe operation, maintenance, and coordination of electrical systems in compliance with regulatory and utility requirements.

### 9.11.2 Scope:

This section is implemented on all Business Units/locations of KE.


### 9.11.3 Summary:

To ensure safe and reliable operations, all Bulk Power Consumers (BPC) and Single Point Supply Consumers (SPSC) connected to the KE distribution network shall:

- Adhere to all applicable safety regulations issued by KE, NEPRA, and relevant authorities.
- Include safety obligations in their connection agreements and participate in KE-led safety

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communications (letters, trainings, workshops, or online platforms).

- c) Designate authorized focal persons for effective coordination with KE.
- d) Ensure their electrical installations meet KE/NTDC design and safety standards.
- e) Employ qualified personnel for operation and maintenance activities.
- f) Follow approved SOPs, including lockout/tagout, job briefings, voltage testing, and proper use of PPE.
- g) Implement temporary earthing and use non-conductive safety gear in high-risk environments.
- h) Conduct annual inspections and testing of all electrical equipment and protective devices.
- i) Maintain proper grounding, avoid overloading, and ensure repairs are done at authorized facilities.
- j) Establish emergency response procedures and report incidents promptly.
- k) Keep safety training and compliance records for a minimum of three years.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 (Clause: 7.11)

## 9.12 **Management HSE Walk-Through/ Site Tours:**

### 9.12.1 Purpose:

OSHA defines that 96% of unsafe acts are the leading cause of an incident to occur. The purpose of this section is to ensure the recording and tracking of unsafe acts across KE with the involvement of top management.


### 9.12.2 Scope:

This section is applicable to all employees at KE and its administered locations. It describes the requirement for complying with the Management Safety Audit within the Process Safety Management element on Audits & Observations

### 9.12.3 Summary:

The Safety Contact audits approach is considered as one of the best audit techniques. During a one-on-one audit, a manager and a subordinate (if required) audit a portion of the subordinate's area together.

Management Safety Audit requires that all CXO's/ Directors/ Dy. Directors/ General Managers/ Dy. General Managers/ Managers/ DMs/ AMs/ Officers should formally visit, site tour, and audit the worksite as per PSM 10 Audit & Observation procedure. The visit should be planned well in advance and should not be postponed or canceled except for an extreme emergency, and even then, it should be postponed for only a day or two at the most. During this visit, the auditor should review the worksite's safety program, activities, and progress. While at the worksite, the auditor should spend at least 30 minutes meeting at least 03 staff and observing work habits and conditions. At the end of the visit, the auditor should give a brief review of the observations made during the day and his/her impressions of the worksite. An audit feedback form (Annexure 'A' - MSA Form) shall be submitted to area / department / location in charge (HoD) with copy to respective BU HSE. The focus of the audit should be to establish a safety contact with down-the-line staff. Additionally, all observations made should be concurred with the respective interface before filing an audit feedback form.

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**Note:** For details of the above section, refer to the below document(s)

- NEPRA Power Safety Code 2024 (Clause: 7.12)
- KE/CHSEQ/PSM/10 Audit & Observation

### **9.13 Standard Operating Procedure (SOP)/ Work Instructions:**

#### **9.13.1 Purpose:**

KE believes that the safe operation of our business is our foremost priority. For this intent, development of effective procedures and work instructions are mandatory. SOP and Work Instructions ensure that operations are being carried out in a safe and environmentally possible and protective way. This will help us to make a healthy and safer work environment for our employees, contractors and visitors.

#### **9.13.2 Scope:**

This section is applicable at all KE administered locations. It describes the basic requirements for the development of Standard Operating Procedures.

#### **9.13.3 Summary:**

SOP/ Work Instructions should include the following contents but not limited to,

- Purpose
- Scope
- Definitions & Abbreviations
- Roles & Responsibilities
- Operation Description
- Potential Hazards
- Safety, Health and Environmental Controls/Precautions
- Specific Administrative Controls
- Specific Engineering Controls
- Specific Personal Protective Equipment (PPE)
- Operation Modes (Temporary, Normal, Start-up, turnaround, Emergency), Operational Limits/Parameters, Maintenance, Records and Check Lists or Log Sheets.

To ensure safe operation, following procedure should be available with respect to each BU (but not limited to).

- Operation Procedure
- Maintenance Procedure
- Electrical Safety Manual
- Health Safety Environment Procedures and Checklists
- Risk Assessment Procedure
- Safe Work Practices



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- g) Site Safety Manual
- h) Safety Critical Procedure
- i) Safety & Fire Fighting
- j) Access Control
- k) Line Break and Equipment Opening Procedure
- l) Office Safety Protocols

### 9.13.4 Document Retention:

SOP/ WI shall be reviewed at least every three (03) years or, in case of a major incident or change in equipment, process, mechanical, electrical or chemical or new critical risk identified, and/or internal/ external audit recommendation.

### 9.13.5 Training:

Adequate training/ refresher training shall be provided to each employee (where applicable) to adhere safe operation and work practices at site.

**Note:** For details of the above section, refer to below document(s)

- NEPRA Power Safety Code 2024 (Clause: 7.13)
- KE/CHSEQ/RP/009 - Document Control Procedure
- KE/CHSEQ/PSM/15 Procedures and Performance Standards

## 9.14 Documents & Record Control:

### 9.14.1 Purpose:

This procedure describes the process for development, review, authorization, control, and distribution of controlled documents. Using this procedure will ensure that documents and records (also referred to as documented information) used in the QMS (Quality Management System) are created, approved, distributed, used, updated, retained, and disposed of according to ISO 9001:2015.

It also provides guidelines on the mechanism for developing the documents, records, forms, and checklists on one standard format across all Business Units of KE. The guidelines related to procedures/ documents must be clearly spelt out with standard format for nomenclature.

### 9.14.2 Scope:

This procedure is applicable to all existing documents and records stored in any possible media i.e., paper, electronic form, documents, and records are being developed and will be developed across all Business Units of KE.

### 9.14.3 Distribution:

Throughout all levels in the company.

### 9.14.4 Records Management Procedure:

#### a) Availability of Documents:

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- All controlled documents at KE must be easily accessible to employees in both hard copy and electronic formats. The Document Control Coordinator (DCC) is responsible for maintaining original approved documents, ensuring secure storage, and coordinating with IT for data backups, virus protection, and secure access. Documents must be properly labeled, indexed, and stored in protected environments, never on personal drives.*
- The use of integrated document management software is essential for efficient and secure information handling.*

**b) Document Retention:**

- All documents (procedures, records, forms, log sheets etc.) must be retained in hard file or soft copy for a minimum of 05-year period. This is a minimum retention period, and some documents may require retention for more than 5-year period, some even retained for lifetime (e.g., original equipment specifications, maintenance record of any equipment to be maintained till its useful life).*

**c) Document Disposal:**

- All Documents either in soft or hard copy which have passed their retention timeline shall be disposed off after getting authorization from relevant Department Document Owner.*
- The Document Control Coordinator (DCC) shall be responsible for disposal of document hard copies through appropriate method as advised by Document Owner.*
- DCC shall be responsible for disposal/ permanent deletion of Soft/ Electronic Documents through KE IT Scrap the record OR file the record in box file and shift to the archives for reference purposes in case of any requirements in the future*

**Note:** For details of the above section, refer to below document(s)

- NEPRA Power Safety Code Clause 7.14*
- KE/CHSEQ/RP/009 - Document Control Procedure

### **9.15 Site Supervision:**

#### **9.15.1 Purpose:**

*To ensure effective supervision of high-risk field activities by KE personnel through structured oversight, accountability, and proactive intervention, thereby minimizing unsafe acts, incidents, and operational risks.*

#### **9.15.2 Scope:**

*This section applies to all KE Line Management for overseeing field operations. It outlines their roles in verifying training, enforcing safety protocols, conducting field visits, monitoring worker behavior, and ensuring compliance with KE's HSE standards, SOPs, and NEPRA Power safety code 2024 requirements.*

#### **9.15.3 General Requirements:**

- a) *Line Management shall ensure close and direct supervision of high-risk activities, especially during plant/equipment shutdowns, start-ups, and shift changes, to prevent incidents/Near Misses occurred due to short cuts.*





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- b) Workers are more likely to take risks without supervision; effective site supervision helps correct unsafe behaviors and reduces accidents.
- c) Line Management must verify that their teams have received required training/refreshers courses as per the training plan.
- d) These supervisory roles are accountable for safety and work outcomes, whether supervising directly or indirectly.
- e) Supervisors must conduct regular field visits to identify and record unsafe conditions, acts, near misses, and other safety issues in a logbook for corrective action.
- f) Supervisors must take strict action against willful violations; counsel repeat offenders and remove unsafe workers from the site if necessary.
- g) Supervisors must ensure job briefings/toolbox talks before starting any job and enforce compliance with safety rules and SOPs.
- h) Supervisors must confirm that:
  - Lockout/tagout and isolation procedures are completed before work begins.
  - Voltage testing is done using appropriate devices.
  - Temporary earthing is applied on both sides of the line.
  - PPE such as rubber gloves, sleeves, and full-body harnesses are used.
  - Non-conductive harnesses are used in conductive environments.
- i) Supervisors must remain vigilant, monitor workers for unsafe acts, and remove non-compliant individuals from the team while arranging necessary retraining.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause: 7.15

## 9.16 Accountability:

### 9.16.1 Purpose:

The purpose of this section is to determine and explain HSE responsibility & accountability at each level of the organization.

### 9.16.2 Scope:

This procedure describes the requirement for complying with the Process Safety Element on the line Management Accountability & Responsibility which are applicable to all business units of KE

### 9.16.3 Summary


KE believes that HSE is a line management responsibility, and that each employee must accept and fulfill his HSE obligations. Line management controls all the resources, sets all the priorities, and resolves all programmatic conflicts. Only the line organization can effectively direct the HSE program. The only proven way to excel in HSE management is for all members of the line organization to accept responsibility for their personal safety and for the safety of the employees reporting to them. Members of the line management need to be accountable for the HSE performance of their own organizations through regular performance appraisals.

KE/CHSEQ/PSM/04 Line Management Accountability and Responsibility summarizes the HSE responsibilities and accountability of each level of organization to provide an understanding of how HSE responsibilities and accountability are integrated within the entire organization. KE will comply with the requirements mentioned

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*in the NEPRA Power Safety Code 2024 Section 7.16 Accountability*

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause: 7.16
- KE/CHSEQ/PSM/004 – Line Management Accountability and Responsibility

## **9.17 Engineering & Construction Management:**

### **9.17.1 Purpose:**

The purpose of this section is to provide guidelines in establishing minimum safety standards for all work activities which involve engineering & construction management.

### **9.17.2 Scope:**

This section is implemented in all Business Units of KE where applicable.

### **9.17.3 Summary:**

- KE shall establish, implement and maintain a section or unit which shall be responsible for managing engineering documents, conduct detailed engineering design, identify specific requirements for the application of Standards, Specifications, Rules, Regulations and Codes for Engineering & Construction works. To avoid substandard construction and installation, KE must specify the protection devices and schemes, prescribe mandatory design basis and performance criteria for electrical power systems, critical operational parameters, execution of electrical equipment and materials.
- Identify, install and maintain protective system/ distance relays for abnormal conditions (short-circuits, overloading, lines fall on rocks or any dry surface, which may cause damage to people or property, etc.) including grounding of circuits, apparatus and infrastructures. ELCBs (Earth Leakage Circuit Breakers), RCDs (Residual Current Devices) and RCCDs (Residual Current Circuit Breakers) shall be used as per design in circuits in order to prevent fires and shocks in electrical installations.
- Protective relays and protection schemes set points should be sufficient for the current rating to immediately 'blow' the fuse or trip the circuit breaker within the specified time, in case of fault or overcurrent.
- All design aspects/ design criteria shall be provided to NEPRA as and when required and complete record shall be maintained by KE.
- A safety corridor should be considered during the design phase to protect the transmission systems from the windfall, trees and branches and other potential hazards that may result in damage to the system, power failures or forest fires.

**Note:** ABC (Aerial Bundle Cables) Clearances shall be added after revision in instructions by NEPRA

- KE shall install insulated conductors (aerial bundled cables/ conductors) for new LT lines or while replacement of spoiled bare conductors, especially in narrower/ congested areas having less clearance from houses/ buildings. Insulated conductor will prevent accidental contact and can be stand in close proximity to trees/ houses/ buildings and will not generate sparks, if touched.



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- g) The minimum safe clearances from the ground surface for overhead bare conductors at maximum conductor sag to prevent induced voltage or flashover in areas exclusive to pedestrians having no access to vehicles, as well as on roads and streets with heavy vehicles such as trucks, trailers, buses, or cranes, shall be

No.	Voltage AC	Pedestrian Area	Streets	Roads & Highways
1.	400 Volts and below	15 feet (4.6 meters)	19 feet (5.8 meters)	26 feet (7.9 meters)
2.	11 kV	15 feet (4.6 meters)	20 feet (6.1 meters)	26 feet (7.9 meters)
3.	33 kV	18 feet (5.5 meters)	22 feet (6.7 meters)	26 feet (7.9 meters)
4.	66 kV	20 feet (6.1 meters)	24 feet (7.3 meters)	26 feet (7.9 meters)
5.	132 kV	23 feet (7 meters)	26 feet (7.9 meters)	26 feet (7.9 meters)
6.	220 kV	26 feet (7.9 meters)	30 feet (9.1 meters)	30 feet (9.1 meters)
7.	500 kV	30 feet (9.1 meters)	35 feet (10.7 meters)	35 feet (10.7 meters)

- h) The minimum safe clearances from the ground surface for overhead bare conductors at maximum conductor sag to prevent induced voltage or flashover in areas crossing railway tracks, shall be

No.	Voltage AC	Inside Stations	Outside Stations
1.	400 Volts and below	31 feet (9.5 meters)	24 feet (7.3 meters)
2.	11 kV	33 feet (10 meters)	25 feet (7.6 meters)
3.	33 kV	33 feet (10 meters)	25 feet (7.6 meters)
4.	66 kV	34 feet (10.4 meters)	26 feet (7.9 meters)
5.	132 kV	36 feet (11 meters)	28 feet (8.5 meters)
6.	220 kV	37 feet (11.3 meters)	29 feet (8.8 meters)
7.	500 kV	39 feet (11.9 meters)	30 feet (9.1 meters)

- i) The minimum safe clearances for overhead bare conductors at maximum conductor sag from the vertical clearance above rooftops or horizontal clearance from the house, building or structure side, shall be

No.	Voltage AC	Vertical	Horizontal
1.	400 Volts and below	8 feet (2.4 meters)	4 feet (1.2 meters)
2.	11 kV	12 feet (3.7 meters)	6 feet (1.8 meters)
3.	33 kV	12 feet (3.7 meters)	6 feet (1.8 meters)
4.	66 kV	15 feet (4.6 meters)	15 feet (4.6 meters)
5.	132 kV	20 feet (6.1 meters)	20 feet (6.1 meters)
6.	220 kV	21 feet (6.4 meters)	21 feet (6.4 meters)
7.	500 kV	25 feet (7.6 meters)	25 feet (7.6 meters)

Note: For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Section 7.17

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- KDTP-P11-21-01 - Safe Clearances of Electrical Power Lines Structure & Minimum Approach Distance
- KTDP-P649-19-00 - LT ABC Execution
- PID/TS/TLOH/1.0 - Technical Specification overhead transmission lines
- TS-Specs-overhead transmission line V2.0
- Anex-D8-A DISTRIBUTION PROJECTS EXECUTION MANUAL
- SC-W&E-01/11 - Civil Work manual

### **9.18 Operation & Maintenance:**

#### **9.18.1 Purpose:**

The purpose of this section is to provide guidelines in establishing safe work practices during planning and executing of maintenance and operational activities

#### **9.18.2 Scope:**

This section is implemented on all Business Units of KE and its administered location

#### **9.18.3 Summary:**

1. All critical high risk activities including boiler/ turbine operations, turnaround/ startup, access to high voltage system and high voltage switching operations, high voltage capacitor discharge, working in grid, substation, feeder, panels, transformer, overhead lines, regulator, single or multiple circuit, dead apparatus/ lines, working at height, solvents cleaning, handling of toxic or hazardous materials, fiberglass thermal insulation, explosives, radioactive material, pressure vessels, underground manholes shall be performed safely in compliance to KE Operation/ Maintenance Procedure, SOP, or Manufacturer's manual.
2. KE shall implement all necessary precautions to avoid any leakage of electrical current or hazardous energy from its system/ infrastructure to ensure safety of human life.
3. Bonding and grounding conductors shall be provided where needed to dissipate static charge accumulations.
4. Operation and maintenance activities shall be carried out by experienced, trained and authorized employees/ contractors. Alternatively, workers can work under the direct supervision of experienced, trained and authorized employees/ contractors, to gain the necessary training and hands on experience.
5. KE shall ensure effective coverage of critical high-risk activities under close and direct supervision to reduce incidents/ near misses. The chance of incidents is higher during shutdown and start-up of plant/ equipment during maintenance due to short cuts by employee/ contractor to finish jobs.
6. Voltage testing including Hi-pot tests (AC/ DC), power frequency, impulse voltage withstands tests, and high current tests shall be performed safely in compliance with KE Operation/ Maintenance Procedure, SOP, or Manufacturer's manual.
7. Protections/ controls/ interlocks shall be intact and shall not be bypassed or modified without the approved Management of Change (MOC).
8. Isolation shall be done for maintenance activities, whenever required.



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9. Switching operations for isolation of the transmission network shall be well coordinated with the relevant control center.
10. Safe working of remote and automatically controlled equipment shall be established.
11. Combustible and flammable materials shall be removed from the area.
12. Gas Testing shall be conducted as per Task Risk Assessment/ JSA/ Permit to Work at same/ above/ below elevation to test oxygen deficiency and/ or for flammable or toxic gases and vapors.
13. Gas cylinders shall be secured in an upright position with proper labels and a safety cap shall be installed when not in use.
14. Use cylinder trolleys, material baskets, cylinder racks, and other proper types of equipment to transport cylinders.
15. Use approved pressure-reducing regulators with a check valve connected to the cylinder valve on all cylinders.
16. Always close the cylinder valve before attempting to stop leaks.
17. Inspect cylinders for safe condition before use like gauges, valves, regulators, hoses, any damage and valid hydro test date.
18. Protect cylinders from direct flame, sunlight, and other heat sources.
19. Install flashback arrestors at O<sub>2</sub>, acetylene/other fuel type cylinder regulators.
20. Properly identify and label empty and full cylinders.
21. All power-driven tools, equipment and heavy equipment shall be inspected before use.
22. Every part of electric generators, turbines, motor or rotary converter, fly wheels or transmission machinery shall be securely guarded and fenced unless they are safe by position or construction.
23. Crane operation activity should be supervised by experienced, trained and authorized Crane Rigger against approved Permit to Work.
24. Crane lifts shall not be allowed at wind speeds above 32 km/h (20 mph-17.4/ knots- 9 meters/second).
25. The Crane Lift Plan should be prepared by experienced, trained and authorized Crane Rigger.
26. When heavy equipment, including cranes, aerial devices, mobile elevated aerial platforms, man-baskets, man-lifts, or bucket-mounted vehicles, is operating near live electrical circuits/energized power lines, shall maintain minimum clearance distances from these live electrical circuits/energized power lines, as mentioned in the table below. Only qualified and trained personnel shall be allowed to operate and work on equipment in close proximity to live electrical circuits/energized powerlines while wearing the necessary personal protective equipment (PPE). Insulated or uninsulated heavy equipment or construction machinery such as a forklift, excavator, bulldozer, wheel loader, backhoe, grader, crane, dump truck, man-baskets, man lifts, bucket mounted vehicles, etc. must be protected by providing grounding and bonding connections to dissipate any potential electrical charges when working in an electrically conductive, near live line or when protection is required against potential energization of the line or monopole/tower/structure or back-feeding from consumer double supply lines, generators, UPS systems, stored charges from capacitors, lightning strikes, or induced voltage



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from conductors/ cables/ transformers. Insulated heavy equipment, including those with rubber tires and wooden supports, is not foolproof. Over time, insulation may deteriorate or get damaged due to environmental exposure, wear, or physical damage. Even with insulation, there's still a risk of electrical charge to pass through, or heavy equipment large metal objects can accumulate induced voltages, especially under high voltage conditions. A person touching heavy equipment (touch potential) or standing near heavy equipment while touching the ground (step potential) could be electrocuted. Grounding and bonding provide an additional layer of protection to safely dissipate any electrical charge that might be transferred to the heavy equipment protecting both the equipment and nearby personnel from various electrical risks.

No.	Voltage AC	Minimum Safe Distance for Uninsulated Heavy Equipment	Minimum Approach Distance for Insulated Heavy Equipment
1.	400 Volts and below	3 Meters (10 Feet)	18 Inches
2.	11 kV	3 Meters (10 Feet)	4 Feet
3.	33 kV	4.3 Meters (14.2 Feet)	5 Feet
4.	66 kV	5 Meters (16.4 Feet)	6 Feet
5.	132 kV	6.9 Meters (22.8 Feet)	8 Feet
6.	220 kV	8.5 Meters (28 Feet)	12 Feet
7.	500 kV	12.2 Meters (40 Feet)	25 Feet

27. A designated supervisor and signalman shall ensure the following minimum safe distances shall be maintained all the time to prevent electrocution, equipment damage, and fires.

**Note 1:** Distances listed are for standard conditions, extra care must be taken, if standard conditions do not exist.

**Note 2:** When operating insulated heavy equipment near live electrical circuits/energized power lines, avoid using uninsulated lifting accessories, such as slings, hooks, or rigging equipment. Choose non-conductive lifting accessories made of materials that do not conduct electricity.

28. Use non-conductive insulated measuring stick to verify clearance distances.
29. All lifting equipment shall have a certified safe working load (SWL) and be inspected prior to the lift. The SWL shall not be exceeded during the lifting operations and equipment that is damaged shall not be used.
30. The crane operator shall hold a valid government license/Heavy Transport Vehicle (HTV) license, appropriate for the type and size of the heavy equipment and shall be certified and trained for the equipment he/she operates.
31. Crane Rigger shall ensure that no one shall be under a suspended load.
32. All electrical equipment and portable lighting, including flashlights shall be inspected as per defined frequency.
33. Use proper wiring within conduit along with Ground-Fault Circuit Interrupters (GFCIs) in wet areas to prevent shocks at construction sites or while using portable electrical tools, etc.



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34. The confined space shall be provided with illumination of not less than 50lux. The contractor can increase the number of lights to get enough lux level. Where flammable or potentially explosive atmospheres are likely, extra low voltage lighting (typically less than 25 Volt) shall be used.
35. Visitor access should be controlled.
36. Day and Night shifts representatives shall ensure proper hand overtake over, information of all on-going critical activities/ issues in writing and verbally to avoid any confusion.
37. Permit to Work system shall be followed for all activities.
38. Barricading and warning signs shall be provided, wherever required.
39. Fire protection systems shall be provided, inspected and maintained.
40. Full Body Harness with front work positioning belt along with double lanyard for 100% tie shall be used at height more than 6 feet/ 1.8 meter above the ground when climbing poles, towers and structures including working through mobile elevated aerial platform, man-baskets, man-lift or bucket mounted vehicles. Full Body Harness with front work positioning belt is to allow an employee to be supported on an elevated vertical surface such as a wall or pole and to work with both hands free. Use of a body belt alone for fall arrest is prohibited. Full Body Harness with PVC coated hardware should be used when working in an explosive or electrically conductive environment. Anchor the safety harness lanyard on rigged anchorage point at height, having fall clearance safety factor three (03) feet from impact level or ground level.
41. Use self-retractable lifelines (SRL) when working in elevated areas such as rooftops.
42. PPE shall be in good condition. PPE should be inspected before use. Remove and dispose defective PPE from the job site.
43. Employee/ contractor should be familiar with the nearest manual call point (MCP), safety shower, fire extinguisher, nearest safe escape route and assembly point.
44. Employee/ Contractor shall be familiar/ trained in incident reporting.
45. Housekeeping shall be conducted regularly.
46. HSE observations, unsafe conditions/ acts and violations shall be corrected immediately at site and necessary action shall be implemented for preventive action to avoid reoccurrence.

**Note:** For details of the above section, refer to below document(s):

SOP NO.	TITLE
-	<u>NEPRA Power Safety Code 2024 Section 7.18 Operation and Maintenance</u>
OP-GS-11 46.1	SOP for cleaning of Line insulator of 220KV, 132KV and 66KV transmission lines
KDTP-P604-16-00	Meter Reading on Height for Energy Meter in Boxes on Poles
KDTP-P610-20-01	Crossing LT ABC/Leads through PMT(s)
KDTP-P626-17-00	Installation of Single, Three Phase Energy Meters in KE Distribution Network
KDTP-P638-18-00	Transportation Loading Unloading of Distribution Equipment DTS
KDTP-P649-19-00	LT ABC Execution
KDTP-P651-20-00	Load Break Switch LBS
KDTP-P652-20-00	Installation of poles
KDTP-P653-21-01	HT LT Underground Cable Laying and Execution

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KDTP-P658-20-00	Installation Operation of Earth Fault Indicator (EFI)
KDTP-P659-20-00	Dismantling of poles
KDTP-P663-20-00	Installation - Removal of PMT
KDTP-P671-20-00	HT ABC Execution
KDTP-P615-17-00	Installation of Automatic Splices (for OH Conductors) in KE Distribution Network
KDTP-P616-16-00	Preparation and Operation of 11 KV Cable Spiker Kit
KDTP-P617-17-00	Standardization of Installing LV Distribution Boxes (DBs) at Pole Mounted Transformer (PMT) of K-Electric Distribution Network
KDTP-P618-10-00	REPLACEMENT OF DAMAGED DISTRIBUTION TRANSFORMERS
KDTP-P619-19-02	Earthing of HT/LT Equipment(s) and Poles – Revision 02
KDTP-P620-17-00	Tree Pruning at Existing HT/LT OH Mains of KE Distribution Network
KE/TPRE/SOP/621	Proactive Preventive Maintenance of Distribution Transformer
KDTP-P623-18-00	Installation and Operation of Reconnection/Disconnection (RCDC) Boxes
KDTP-P630-13-00	Protection & Maintenance of Distribution Transformer
KE/TPRE/SOP/637 (Rev.00)	Anchor Bolt Sealing (Twist Wire) For Single & Three Phase Static Meters
KDTP-P640-18-00	Use of anchoring structure (A-type Fiber Glass Ladder) for the purpose of working at LT O/H of KE Distribution Network especially for Service Bracket in Rural Area
KDTP-P644-18-00	Cable termination at RMU
KDTP-P645-20-01	Installation and Operation of Ring Main Unit (RMU)
KDTP-647-19-00	Installation of service connection & Meters
KDTP-P657-20-0	Multistory Busbar (MSBB) Execution
KDTP-P660-20-00	INSTALLATION AND MAINTENANCE OF DRY TYPE TRANSFORMER
KDTP-P661-20-00	OPERATION OF HT DO CUT OUT FUSE CARTRIDGE THROUGH HOT STICK (FUSE CLAW)
KDTP-P665-20-00	HT/LT BARE AND XLPE COVERED HT CONDUCTOR EXECUTION
KDTP-P666-20-00	Installation & Operation of VCB Trolley Type Substation Panel
KDTP-P667-20-00	Installation & Operation of VCB Cassette Type Substation Panel
KDTP-P668-20-0	STREET LIGHT CONNECTION
KDTP-P669-20-00	EQUIPMENT PLACEMENT / INSTALLATION IN 11 KV SUBSTATION
KDTP-P670-21-01	Pad Mounted Unit (PMU with RMU) Installation
KDTP-P672-20-00	Guidelines for Removal of Illegal Street Light Connections
KDTP-P677-21-00	Installation of HT Polymer Type Drop Out Cutout's Covers
KDTP-P678-21-00	Feeder Pillar Box Installation
KDTP-679-21-00	Installation, Operation & Troubleshooting of DCRC Panel


## 9.19 Asset Integrity Management:

### 9.19.1 Purpose:

KE believes that a comprehensive Asset Integrity program is necessary to ensure that the system's integrity is maintained throughout the life of equipment / facility. Asset Integrity program contains the following tests, inspections, & procedures:

- Equipment tests and inspections - predictive and preventive maintenance.

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- b) Reliability engineering
- c) Maintenance procedures
- d) Quality control procedures
- e) Training and performance of maintenance personnel

Predictive and preventive maintenance and reliability engineering are important to ensure reliable and incident-free operation. It also avoids actual root cause of the problem to recur. Such programs help prevent premature failure and help ensure operability of the systems for emergency control.

### 9.19.2 Scope:

This section is applicable to all KE administered locations. It defines the requirement for complying with the Asset Integrity Management as mentioned in the NEPRA Power Safety Code 2024 and other best industrial practices.

### 9.19.3 Essential Features:

#### a. Inspection or Test Design:

A written or computer-based design or procedure for inspecting or testing each equipment piece or system must be prepared in advance. It shall include:

- The equipment or system identification
- Inspection or test frequency
- The inspection methods to be used, including measurement locations
- Codes and standards to be followed
- Acceptable limits
- A means for finding the design basis and previous history
- Any special safety considerations
- Instructions for those who are preparing the equipment or system for inspection

#### b. General Requirement:

- a) An equipment inspection program shall be established for safety critical equipment consisting of inspections and tests to detect impending or minor failures and procedures to mitigate their potential before they can develop into more serious failures.
- b) However, the respective BU management may also consider listing other equipment, taking into consideration:
  - Actual equipment replacement cost
  - Relationship to identified critical equipment, or
  - The cost of system / unit shut down for the repair of unsuspected equipment failure.
- c) The following essential features of the test and inspection program shall be included:
  - Application listing developed for the equipment and systems subject to tests and inspections.
  - Documentation of test objectives and method





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- d) The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices and more frequently if indicated by prior operating experience.
- e) KE and its administered locations/facilities shall document inspection and testing procedures with appropriate references to applicable codes, standards and vendors' recommendations that were used as a basis for good engineering practices.
- f) Variances from or substitutions for codes, standards, and recommended practices shall be documented, including the reason for variance or substitution and a description of the engineering practice used.
- g) Accuracy of testing and monitoring equipment used in the inspection process shall also be verified.
- h) All equipment testing shall be recorded and maintained. Instrument / interlock devices shall be tested from the primary sensor down to the final trip element connected to the process. All relays and control devices involved in the trip or alarm shall be exercised.
- i) If a safety critical device, interlock or equipment can't be handed over for preventive maintenance or dummy checkup (either one) waiver shall be obtained by the owner of the equipment.
- j) KE management and supervision shall analyze results to verify integrity.
- k) Condition of equipment and recommendations for repairs or replacement shall be documented and effectively communicated to the appropriate management. The results of the program shall be reviewed periodically by respective A Level Sub HSEQ Committee
- l) The recommendations accepted shall be tracked until maintenance is complete.
- m) Rationale for rejected recommendations or deferred maintenance shall be documented.

**c. Applicable Performance Limits:**

Performance limits shall be established that are consistent with limits established in process technology e.g. brittle fracture, hydrogen attack etc.


**d. Exception List:**

Exceptions lists shall be issued for corrective action and follow-up.

**e. Documentation Records:**

Documentation records shall be prepared showing that each inspection and test has been performed in accordance with this section. The documentation shall identify the following information:

- a) The date of the inspection or test.
- b) The name of the person who performed the inspection or test.
- c) The serial number or other identifier of the equipment on which the inspection or test was performed.
- d) A description of the inspection or test performed.
- e) Results of inspection or test, including whether a pass or fail condition.

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f) Recommended corrective action(s).

#### f. Record-Keeping Systems:

A record-keeping system shall be developed to document test results in a way that facilitates review and analysis of test data.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Section 7.19
- KE/CHSEQ/PSM/20 Asset Integrity
- KE/CHSEQ/PSM/13 Process Safety Information
- OP-GS-11 46.1 - SOP for cleaning of Line insulator of 220KV, 132KV and 66KV transmission lines
- G&T-HSE-11 - 132KV & 220KV transmission line insulators offline washing through line washing unit
- Annex D8-A Anex-D8-A DISTRIBUTION PROJECTS EXECUTION MANUAL

### 9.20 Management of Change:

#### 9.20.1 Purpose:

KE believes that the generation plant, grids, transmission and distribution networks and other facilities are designed as per standard engineering practices. The Changes to the documented PSI - Process Safety Information (e.g., hazard of material, equipment design basis & process design basis) can invalidate the prior hazard evaluations. Similarly, subtle or temporary changes can lead to catastrophic events. Therefore, these changes must be made in such a manner that the safety, integrity of the plant, other facilities and the environment is not compromised.

As changes whether to or within the documented process safety information package may potentially lead to an unsafe condition and/or incident, therefore, ALL changes must go through appropriate review and authorization before being implemented.

#### 9.20.2 Scope:

This section defines the requirement for Management of Change and its applicability across K-Electric.

#### 9.20.3 Change Types:

There are eight major classifications of changes as listed below.

- Technology Changes
- Facility Changes
  - Approved Project Changes
- Operation Changes
- Document Changes
- Analytical Method Changes
- Subtle Changes
- Test Run / Authorization (TA's)

**Note:** Replacement in kind is not part of the Management of Change process.

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#### 9.20.4 General Requirement for Implementing a Change:

In general, the following considerations should be addressed by KE Management through systems, prior to any change:

- a) Purpose of the change
- b) The technical basis for the proposed change
- c) Description
- d) Impact of change on health, safety and environmental aspects, including whether a Process Hazard Analysis (PHA) is required or not. In case a PHA is required, it shall be attached to management of change document
- e) Human factor impact
- f) Modifications to operating / maintenance procedures or work practices – these shall be completed before the implementation of change.
- g) Necessary time period for the change
- h) Employees involved in operating a process, and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of and trained in the change prior to start-up of the process or affected parts of the process.
- i) Update of Process Safety Information (PSI) package.
- j) Assessment of any possible effects on product quality.
- k) Approval and authorization requirements – to include operation, technical performance, maintenance personnel. Personnel approving and authorizing management of change documents should do so only after they are satisfied that all the elements of PSM have been satisfactorily addressed.
- l) KE management from each BU's shall establish a follows up, tracking and closure of these changes to ensure that close out report / document is issued in timely manner. At a minimum close out report of modifications and new projects shall capture the following:
  - Document the status of any open PHA recommendations and move them to a separate tracking system.
  - Document the status of any open Pre-Startup Safety Review (PSSR) and move them to a separate tracking system.
- m) KE management from each BU's shall plan periodic internal audits of the Management of Change system to verify it is being managed properly, particularly with respect to review, approval and documentation. The results of such audits shall be stewarded to the management on a periodic basis.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause 7.20
- KE/CHSEQ/PSM/16&17 Management of Change (Facility and Technology)

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## **9.21 Traffic Management:**

### **9.21.1 Purpose:**

The purpose of this section is to reduce accidents related to vehicles for both employees and the public and ensure compliance with all legal/ regulatory and statutory requirements. It also provides safe guidelines for traffic management across KE and its administrated locations/jobs.

### **9.21.2 Scope:**

This section applies to all company staff (KE/ OSP), contractors, suppliers, and visitors that drive any vehicle which is owned, leased, hired by K-Electric or by an employee for company business.

### **9.21.3 General Requirements:**

The following shall be implemented in all locations in accordance with local standards and regulations.

#### **a. Driver Training & Qualification:**

Only drivers with valid licenses are authorized to operate KE (owned, leased and hired) vehicles, subject to logistic approval.

Special vehicle operators must be certified as per KE-FM-SP-02.

KE employees driving for business purposes must complete:

- Initial Defensive Driving Training (for new inductees, arranged by Logistics via external firm)
- Defensive Driving Refresher Training every 3 years (by Logistics)
- KE Driving & Transport Safety Policy Refresher (conducted by BU HSE)

#### **b. Vehicle Condition**

All KE-owned or hired vehicles must be inspected by the driver before use to ensure they are safe and fit for purposes.

Vehicles used for official trips must be equipped with:

- Airbags
- ABS system
- Seat belts
- First aid box & fire extinguisher
- Safety cones (excluding personal/leased cars)
- Reverse alarm (excluding personal/leased cars)

Existing KE vehicles without ABS and airbags must be replaced with compliant with “KE Driving & Transport Safety Policy”.

Trucks/MTLs are exempt from ABS and airbag requirements due to market limitations.

All vehicles must be equipped with seat belts within three months of policy issuance.

#### **c. Two-Wheeler Vehicles/Motorcycle:**

Motorcycle riders are required to wear safety helmets while riding motorcycles at all KE locations or while coming to or going from KE offices or work sites.

Motorcycle headlights, backlights and turn indicators should be in working condition.

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Chain cover, Fenders, Safeguard and Side mirror shall be available and in maintained condition.

Motorcycle riders shall not carry more than one person in addition to himself on the motorcycle and pillion rider will also wear safety helmet while riding.

Motorcycle riders will not park or rest on any road/parking area in such a position/condition that may cause any danger to other users of the road.

#### d. Traffic Management

Traffic on the worksite will be minimized to avoid unnecessary hazards and congestion at the workplace, with entry onto worksite being controlled via the issue of vehicle passes.

Specific access and egresses for pedestrians will always be maintained, as will routings for emergency vehicles. Any vehicle wishing to block roads for any period of time will first obtain a road closure permit through respective BU.

Traffic Management Plan involves the safe access and movement of all vehicles (such as Cars, Pickups, Trucks, Tankers, Coaster and Buses), heavy equipment (such as Forklifts, Cranes, Excavators) and Pedestrians within, through and around sites where work is carried out.

KE shall develop its Traffic Management Plan which should include but not limited to:

- Pedestrian Routes,
- Traffic Routes,
- Traffic Movement,
- Bicycle/Tricycle Movement,
- Interaction or potential interaction between pedestrians and vehicles,
- Parking requirements,
- Bus arrivals or departures,
- Vehicles reversing and maneuvering,
- Maintenance activities and movements,
- Loading/ Unloading,
- Traffic existing control and the type of additional controls required,
- Site requirements for special vehicles such as crane (over-dimensional vehicles),
- Hitching or unhitching of Trailers/ Tankers,
- Mounting or dismounting refuse containers from vehicles,
- Safe access to site Fire & Safety Equipment,
- Maximum driving hours and rest time,
- Safest routes for the journey outside the facility,
- Emergency Support Services access.

When transporting bulky, oversized, overweight, or special large loads, it is essential to follow a comprehensive set of safety precautions to ensure secure and compliant movement.

The transportation route must be carefully planned in coordination with local authorities and traffic police, ensuring it can accommodate the load without obstructions.

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All necessary permits and approvals must be obtained in advance. Personnel involved must be trained in safety and emergency procedures, and an emergency response plan should be in place.

Escort vehicles should be deployed for large or heavy loads to assist with traffic control and enhance visibility. A responsible team or individual must oversee the entire process, maintaining records of inspections and approvals.

Transport should be postponed in adverse weather conditions, and clear communication must be maintained between drivers and escort teams using reliable communication devices.

The load must be properly secured, cushioned, and evenly distributed to prevent instability. Vehicles must undergo thorough pre-trip inspections, and appropriate warning signs, flags, and lights must be displayed to alert other road users.

Continuous monitoring during transit is crucial to promptly address any safety concerns.

**Note:** For details of the above section, refer to below document(s):

- KE/CHSEQ/ORP/037 - Driving & Transport Safety Policy
- NEPRA Power Safety Code Section 7.21 Traffic Management

### 9.22 **Task Risk Assessment/ Job Safety Analysis:**

#### 9.22.1 Purpose:

This section establishes a standard method for developing, using, and maintaining Task Risk Assessment/ Job Safety Analyses (JSA) of all non-routine and low frequency/ critical operation, maintenance and project jobs meeting the requirements of ISO 45001:2018.

#### 9.22.2 Scope:

It is applicable to all non-routine and low frequency /critical operation, maintenance, and project activities throughout K-Electric and its administered location.

#### 9.22.3 **Task Risk Assessment/ Job Safety Analysis:**

Also known as job hazard analysis, it is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

#### 9.22.4 Hazard:

Anything that has the potential to cause harm, ill health and injury to people, damage to property, products or the environment, production losses or increase liabilities, is considered as “HAZARD”.

#### 9.22.5 Risk:

The product of the probability of a hazard resulting in an adverse event, times the severity of the event.

**Risk = (probability of the occurring event) X (Severity of the event occurred)**

#### 9.22.6 Probability:

the extent to which something is likely to happen or be the case

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#### 9.22.7 Severity:

If an accident takes place, how horrific it will be in terms of loss of life and /or property loss and how big harm is to the natural environment.

#### 9.22.8 What jobs are appropriate for job safety analysis?

A job safety analysis can be conducted in many jobs in your workplace. Priority should go to the following types of jobs:

- Jobs with the highest injury or illness rates.
- Jobs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous accidents.
- Jobs in which one simple human error could lead to a severe accident or injury.
- Jobs that are new to your operation or have undergone changes in processes and procedures.
- Jobs are complex enough to require written instructions.

**Note: TRA/ JSA should be carried out for one-time activity. If the activity is repeated a procedure should be developed on the basis of previous JSA and gaps observed during job execution.**

**For all hot jobs JSA is mandatory (ref hot work permit)**

#### 9.22.9 Stages of Job Safety Analysis:

Job safety analysis has three main stages.

- Hazards identification
- Risk assessment
- Risk control

In many cases, in the early phase of writing sequence of steps we may in fact be looking to identify all the hazards/ risks associated with each step of activity, in which case the activity is more properly referred to as hazard identification, risk assessment and then risk control.

The aim of the process is to minimize the likelihood or consequence of a particular risk to a level that is minimal and that we are prepared to accept. The JSA process must include the following considerations:

- Hazard Identification
- Assessment of the risk - which includes:
  - The likelihood (frequency)
  - The consequence
  - Assigning a priority for rectification
- Control of the risk - using a hierarchy of control measures consisting of (in order of preference):
  - Elimination
  - Substitution
  - Engineering Controls
  - Administrative Controls
  - Personal Protective Equipment (PPE)



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**Note:** For details of the above section, refer to below document(s):

- KE-SP-006 HSE and Social Risk Management
- NEPRA Power Safety Code 2024 Section 7.22 Task Risk Assessment/ Job Safety Analysis

### **9.23 Temporary Grounding and Bonding for De-energized Circuit/Lines:**

#### **9.23.1 Purpose**

Temporary grounding and bonding for de-energized circuits or lines is a critical safety measure used to protect workers from electric shock due to accidental re-energization, induced voltages, or lightning. It creates a low-resistance path to the ground, ensuring any unexpected electrical energy is safely discharged. This process also equalizes voltage potential in the work area, reducing the risk of electrical injury and ensuring compliance with safety regulations


#### **9.23.2 Summary**

Before working on de-energized high-voltage lines, circuits must be isolated, locked, tagged, and properly grounded to prevent electric shock from stored or induced voltages. Temporary grounding should be placed to protect workers, using appropriate rods or transmission structures depending on voltage level. Single-point grounding is preferred for safety and efficiency, creating an equipotential zone. Workers must be trained, use voltage detectors, and wear protective gear. Grounding equipment must meet standards, remain secure, and be capable of handling faulty currents. All conductors near the work area must be grounded, and grounding sets should be barricaded to avoid stepping or touching hazards.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Section 7.25



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## 9.24 Personal Protective Equipment:

### 9.24.1 Purpose:

"Personal Protective Equipment" (29 CFR 1910.132) requires that workplaces be assessed for hazards that may require personal protective equipment. Moreover, it also addressed the training and upkeep of PPEs.

### 9.24.2 Scope:

This section shall be applicable to all employees, contractors and visitors at K-Electric and its administered locations

### 9.24.3 General Requirements:

- All requirements of the NEPRA Power Safety Code 2024 Section 7.23 Personal Protective Equipment shall be fulfilled.
- Personal Protective Equipment (PPE)/ Tools shall be in accordance with Hazard /Risk Category and/or PPE/ Tools Assessment study to provide protection from hazardous conditions
- KE shall maintain a list of approved Stock and Non-Stock Safety items including PPE/ Tools with material description and model number
- Those required to wear PPE must be trained and tested in the applications. Use and limitations of the PPE prior to exposure to the potentially hazardous area/ task.
- Maintain adequate amount of PPE/ Tools inventory at each site. Conduct visual inspection of PPE/ Tools before each use
- Identify task specific PPE/ Tools in Task Risk Assessment / JSA / Permit to Work/Job Cycle Check.
- PPE/Tools shall be stored and maintained in a safe working condition after completion of work
- Areas/ Equipment that requires PPEs must be sign posted which shall warn of the hazard and define the required PPEs.

### 9.24.4 PPE's Hazard Assessment:

- Relevant Manager/Area Owner in coordination with respective BU HSE Coordinators shall carry out Base Level Hazard assessment for their respective Plant/Regions/Clusters/IBC's based on location/work tasks. Hazard Assessment sheet
- All work tasks should be evaluated for task specific PPEs.
- All Operation and Maintenance procedures shall incorporate the Hazard Assessment and required PPEs.

HAZARDS	CONDITIONS
Head Hazard	Falling objects Moving objects Bumping into equipment
Foot Hazard	Falling or rolling objects Sole-piercing objects Slippery or uneven surfaces
Body/Torso	Flash fire

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	Hazardous liquids or vapors Molten metal/welding slag/sparks
Eye and Face	Flying particles Molten metal/welding slag/sparks Hazardous liquids or vapors Light radiation Flash fire
Hand	Hazardous liquids or vapors Abrasions Punctures Lacerations Temperature extremes
Electrical	Electrocution Arc Flash
Noise	High noise levels Impact noise
Respiratory	Harmful dust, fibers, fumes, mists, gases, smoke, vapors

**Note:** See the Hazard Assessment template as reference for respective BUs to develop as per their site/location hazards.

**Note:** *For details of the above section, refer to below document(s):*

- KE-SP-057 Personal Protective Equipment

KDTP-S50-15-03-Insulating Gloves	KDTP-S51-17-02-Leather Protector Gloves
KDTP-S239-16-02-Danger Board	KDTP-S336-19-02-Safety Helmet
KDTP-S343-17-00-Head Lamp for Helmet	KDTP-S346-17-00-LT Leather Gloves
KDTP-S347-18-01-Fiberglass Ladder	KDTP-S278-15-00-KE Uniforms
KDTP-S190-19-02-Earthing Grounding Kit	KDTP-S352-18-00-Safety Gum Boot
KDTP-S353-18-00-Safety Raincoat	KDTP-S406-18-00-Anti Flash Hood
KDTP-S413-18-00-Working Glove for Karkun	KDTP-S422-19-00-Safety Jacket Executive
KDTP-P603-16-00-Isolation Maintenance Work on HT LT Pole & OH Line	KDTP-P602-20-50, HT-LT Line Isolation Procedure



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### 9.25 De-Energized Circuits & Apparatus:

#### 9.25.1 Purpose:

The purpose of this section is to provide guidelines in establishing and implementing the minimum safe requirements when working on de energized circuits and apparatus.

#### 9.25.2 Scope:

This section is implemented in all Business Units of KE where operation or maintenance activity requires de-energization of transmission & distribution circuits and apparatus.

#### 9.25.3 General Requirements:

- KE shall ensure that only electrically experienced, trained and authorized employees/ contractors shall perform electrical work against the approved Permit to Work (for PTW).
- Install and maintain fixed earthing/grounding system for all equipment's, exposed metallic structures/ poles, stay wires/braces and both H-Type and Spun Type concrete poles that contain a reinforced iron bar, having designated point for the connection of earthing/grounding. Poles are grounded or earthed for several important reasons related to electrical safety, system reliability, and protection against electrical faults.
- Although Glass Fiber Reinforced Polymer (GFRP) poles are non-conductive, any conductive components mounted on the pole, such as transformers, metal cross arms, and lightning arrestors, should be properly grounded. This grounding provides a path to earth for lightning strikes and surges, protecting both the equipment and the surrounding area, and reducing the risk of electrical shocks and fires.
- Always make sure to install and maintain the earthing/grounding system (i.e., equipment, exposed steel structure/ pole along with stay wire).
- Fixed Earthing/ grounding resistance shall be as per design or manufacturer's instruction. In the absence of grounding instruction, the earthing resistance for EHT/ HT/ LT structures/ poles shall be not more than 5 Ohms and Distribution transformer shall be not more than 2.5 Ohms to determine the integrity of the grounding path to ensure protection from shock hazards. The earthing resistance for Grid Station/ Substation/ Switchyard equipment shall be not more than 2 Ohms.
- Verify integrity of fixed earthing/ grounding by continuity test and resistance measurement. In general, this cycle can range from 6 months to 3 years, depending on conditions and criticality. Wet locations testing should be 12 months, and critical care shall be 6 months. Provide name plate/ tag to all structures/ poles/ equipment's with numbers for tracking of earthing/ grounding testing record, etc. Original record of testing with structures! Poles/ equipment's numbers shall be retained and preserved by KE for three (03) years.
- Before working on circuits and apparatus, identify task specific PPE/ Tools in Permit to Work.
- Dry Insulated stick/ rod, tools and PPE/ Tools shall be used for applying and removing the earthing connection to lines or equipment.
- Follow safety procedure/SOP with required PPE to ensure safe execution of the job when it is confirmed that there is no induced voltage exists at the maintenance worksite or where workers work at an electrically safe distance outside the boundary of induced voltage.

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- j) Workers shall maintain an appropriate minimum working safe distance from uninsulated live conductors/energized apparatus at all times with required PPE to obtain the safest work environment and adequately to protect against electrical shock or burns.

No.	Voltage AC	General Public	Electrical Worker with Required Electrical PPE	Specialized Electrical Worker with Required
1.	400 Volts and below	3 Meters (10 Feet)	1 Meters (3.5 Feet)	0.3 Meter (1 Feet)
2.	11 kV	3 Meters (10 Feet)	1.5 Meters (5 Feet)	0.7 Meter (2.2 Feet)
3.	33 kV	3 Meters (10 Feet)	1.8 Meters (6 Feet)	0.8 Meter (2.9 Feet)
4.	66 kV	3 Meters (10 Feet)	2.5 Meters (8 Feet)	1 Meter (3.5 Feet)
5.	132 kV	3.4 Meters (11 Feet)	3 Meters (10 Feet)	1.2 Meters (3.9 Feet)
6.	220 kV	4 Meters (13 Feet)	4 Meters (13 Feet)	1.7 Meters (5.6 Feet)
7.	500 kV	5.8 Meters (19 Feet)	5.8 Meters (19 Feet)	3.6 Meters (11.8 Feet)

**Note-1:** Distances listed are for standard conditions, extra care must be taken, if standard conditions do not exist.

**Note-2:** An Electrical Worker received general electrical training, performing routine tasks like basic maintenance, repairs, and installations. They understand basic electrical principles, hazards, and safety practices, and typically possess standard certifications or licenses for general electrical work. They handle common electrical systems in residential, commercial, and light industrial settings. These workers often work under the supervision of experienced or specialized electrical personnel for more complex tasks.

**Note-3:** A Specialized Electrical Worker receives advanced or specialized electrical training, enabling them to handle complex and high-risk electrical tasks. They possess in-depth knowledge of advanced electrical concepts and high voltage safety protocols. Holding advanced certifications, specialized licenses or specific training certifications in areas like high voltage systems, hazardous locations, or specialized industrial machinery. They can work independently on complex assignments and handle specialized electrical systems in high-risk environments.

**Note-4:** A trained and authorized worker may "contact" live conductors/energized apparatus up to 33 kV using insulated electrical PPE. However, the worker must observe and maintain a minimum safe working distance between any uninsulated part of his/her body and the live conductors/energized apparatus. In cases where maintaining the minimum safe working distance is not feasible, the trained and authorized worker shall be insulated or guarded by portable voltage rated portable rubber insulated floor mats, insulated working supports or blankets, rubber/plastic plates, or any other non-conductive objects like plywood barriers that prevent accidental contact.

- k) Use non-conductive insulated measuring stick to verify clearance distances.
- l) If it may not be possible to maintain the appropriate minimum distance between power lines and equipment, it shall be requested to de-energized lines and equipment.
- m) When working on the lines, de-energize the lines, test all phases by beeper/ voltage detector and provide grounding set of same voltage level.



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- n) When circuits and apparatus are de-energized for work, they shall be grounded with grounding equipment on all sides of the location where the work is to be done, regardless of whether or not there is more than one source of supply.
- o) Before the grounding clamps are applied, check to determine that the circuit or apparatus has been de-energized, also check health of the grounding cable.
- p) The earth wires shall be connected to the temporary earthing rod and should be placed preferably 6 meters away from the point of work, inside the barricaded area, where no one is present or able to touch it.
- q) When working on the earthing lines or equipment by using Portable Temporary Grounds (PTG) kit, first connect to temporary earthing rod and then to lines or equipment, while for removing Portable Temporary Grounds (PTG), first remove from lines or equipment and then from the temporary earthing rod.
- r) Grounding cables shall be capable of conducting the same voltage level as the protective device supplying the conductor.
- s) All relevant BUs shall establish written procedures, training, audit and inspection programs to ensure that these minimum requirements are implemented by the line management

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.24)
- KDTP-P603-16-00 - Isolation Maintenance Work on HT LT Pole & OH Line
- KDTP-P602-20-05 - HT-LT Line Isolation Procedure
- KE-HSE-D-12 - HSE-D Manual
- KDTP-P11-21-01 - Safe Clearances of Electrical Power Lines Structure & Minimum Approach Distance

### **9.26 Working on Energized Conductors & Apparatus:**

#### **9.26.1 Purpose:**


This purpose of this section is to provide guidelines in establishing safety standards for all work activities which involve energized conductors or apparatus.

#### **9.26.2 Scope:**

This section is implemented in all Business Units of KE where operation or maintenance activity requires work on energized conductors and apparatus.

#### **9.26.3 General Requirements:**

- a) KE shall ensure that only electrically experienced, trained and authorized employees shall perform electrical work against the approved "Permit to Work" (For PTW, please see Reference section 9.27) under the continuous direction and supervision of the job in-charge.
- b) Before working on live line or in an electrically conductive/induced environment, conduct an exercise/drill with all involved parties for the job to test the preparation and to know the sequence of job steps. Execution of the actual job must be carried out by the same team.

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- c) Work on or handling of any energized electrical conductor, bus bar etc. shall not be permitted without an approved insulated tool, instrument or handle unless one of the following conditions is met:
- The employee is insulated or guarded from the energized part. (Insulated gloves with sleeves rated for the voltage involved shall be considered for insulation of the employee from the energized part.) Don't only wear leather (non-insulated) gloves when working on energized lines. Insulating sleeves shall be worn with insulating gloves in case exposing the employee elbow and upper arm to contact with other energized parts.
  - The energized part is insulated or guarded from the employee by voltage-rated portable rubber insulated floor mats, insulated working supports or blankets, rubber/plastic plates, or any other non-conductive objects like plywood barriers that prevent accidental contact
- d) The hazard of falling/ touching of tools on live circuits/ breakers shall be understood by all concerned and appropriate precautions shall be taken.
- e) If work is to be done on an energized electrical conductor, bus bar, etc. effective supervision of site senior in-charge shall be ensured.
- f) Identify task specific PPE/ Tool in Permit to Work/ Job Cycle Check/ Procedures especially Category 4 Arc flash resistant suit, Arc flash hood, Arc-rated gloves and Arc-rated Fall Protection while working on high voltages (more than 420 V).
- g) Hazards and appropriate protection for work on live circuits shall be effectively communicated to all concerned involved in the job. JSA must be included in the toolbox talk session with the workforce before the start of the activity.
- h) KE shall ensure that all related procedures are developed, maintained and implemented and staff are trained in these SOPs before they are assigned to this job. All BUs shall establish job cycle checks and audit program to verify that established requirements in this section are met.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.26)
- KDTP-P11-21-01 - Safe Clearances of Electrical Power Lines Structure & Minimum Approach Distance
- KDTP-P603-16-00 - Isolation Maintenance Work on HT LT Pole & OH Line
- KDTP-P602-20-05 - HT-LT Line Isolation Procedure
- LDC-SD-001 - LDC actions while arranging shutdown of power transformers
- LDC-WP-000/03 - Work permit system for Transmission line outages incorporated
- Generation Safety Rule Book

## **9.27 Safe Practices for Transformer & Capacitor Installations:**

### **9.27.1 Purpose:**

The purpose of this section is to provide guidelines in establishing safe work practices for transformer and capacitor installation activity.

### **9.27.2 Scope:**

This section is implemented in all Business Units of KE where applicable.



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### 9.27.3 General Requirements:

Only electrically experienced, trained and authorized employees/ contractors shall perform electrical work near energized equipment against approved Permit to Work.

- KE shall arrange sufficient quantity of spare distribution transformers for immediate replacement of damaged transformers and to get enough time for proper repair and testing through the manufacturer's facility, the Distribution Company's own workshop, or an authorized private workshop.
- Electrical equipment and transformers shall undergo routine preventive maintenance, periodic inspections, and testing as per the manufacturer's maintenance guidelines and the relevant SOP. Corrective and preventive maintenance or repairs for all such in-service equipment and transformers shall be carried out at the manufacturer's facility, the Distribution Company's own workshop, or an authorized private workshop, equipped with appropriate testing facilities to ensure reliability and integrity.
- A fitness certificate for electrical equipment and transformers shall be issued upon delivery of the repaired equipment and transformers and the certificate shall be retained and preserved at the relevant sub-division or office
- KE shall establish and maintain at least one transformer workshop in each district within its jurisdiction, either the Distribution Company's own workshop or an authorized private transformer workshop, equipped with all necessary repair and testing facilities in accordance with NTDC or company specifications.
- The Distribution Company shall make sure that no transformer repairs are carried out in unauthorized transformer workshops.
- During repairing the transformer, workers shall empty their pockets of loose articles such as mobiles phones, knives, keys, and watches. Do not allow tools, bolts, nuts, or similar objects to drop into the transformers.
- The Distribution Company shall adjust the transformer's output voltage using the transformer tap changer to provide 220 Volts  $\pm$  5% to the consumer, in accordance with PSDR 2005. The voltage must not fall below 209 Volts as stipulated in PSDR 2005. If the transformer tap changer is defective or unavailable, the Distribution Company shall replace the faulty transformer at no cost to the consumer and adjust the tap changer accordingly to ensure the consumer receives the appropriate voltage of 220 Volts  $\pm$  5%.
- Whenever physical protection is required because of close proximity, electrician's rubber protective equipment should be utilized to cover exposed electrical terminals such as transformer bushings, fuse cutouts, buses, etc. An alternative approach is to install portable rubber insulated mats or insulated working support/ blanket or any other non-conductive object such as plywood barriers that prevent accidental contact.
- Install the LT breaker on the low voltage side of the distribution transformer, either close to the transformer, within a distribution panel, or in an outdoor enclosure, along with appropriately sized and rated HT link fuses. The LT breaker shall provide immediate protection to the transformer and





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downstream circuits by quickly isolating the circuit in the event of an overload, short circuit, or other electrical faults originating from the consumer's side.

j) Only fuses with correct standard size and rating shall be used for transformers to protect human and animal lives. Substandard or "rora" type fuses are strictly prohibited

k) KE shall regularly assess the loading position of the distribution transformers and take appropriate measures in the form of augmentation of transformers to prevent overloads, breakdowns, and potential accidents.

l) Work on Energized Transformer:

- Every possible attempt shall be exercised to avoid working on energized equipment. TRA/ JSA shall be carried out before carrying out the job.
- Appropriate PPEs to be used for work.
- When replacing fuses on the high voltage side of transformer, all possible secondary loads shall be removed.
- Insulating tongs, similar to insulated switch sticks shall be used to remove and
- install fuses.
- Fuse cut-outs shall be opened or closed in a sure, positive manner by experienced, trained and authorized employees! contractors.

m) Work on De-Energized Transformer:

- **Dry Type Transformer**
  - TRA/ JSA shall be carried out before carrying out the job. Power transformers shall be de-energized, isolated and grounded.
- **Liquid-Immersed Transformer**
  - Insulation of oil shall be handled and stored where it will not be exposed to temperatures approaching the ignition point.
  - Static charges can be developed when transformer oil flows in pipes, hoses, and tanks. Oil leaving a filter press may be charged to over 50,000 volts. Filter press, metal hoses, and tanks shall be grounded during oil flow into any tank to accelerate dissipation of the charge in the oil.
  - All windings of a de-energized transformer that is having its oil circulated through a filter press or similar equipment shall be grounded for at least an hour after the oil flow has been completed.
  - After any oil filtration work, the accumulated air on the transformer shall be released by opening the Buchholz relay vent after the transformer is cooled down.
  - Terminals shall not be touched before they are adequately grounded.
  - When any quantity of oil is added to a transformer it should remain de energized for a period of at least 8 hours after filling is complete except while topping up transformer already filled with oil up to conservator or if the Unit is filled under vacuum the time period can be





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shortened to 1 hour, and when small quantities of oil are added in such a way as to eliminate the formation of air bubbles.

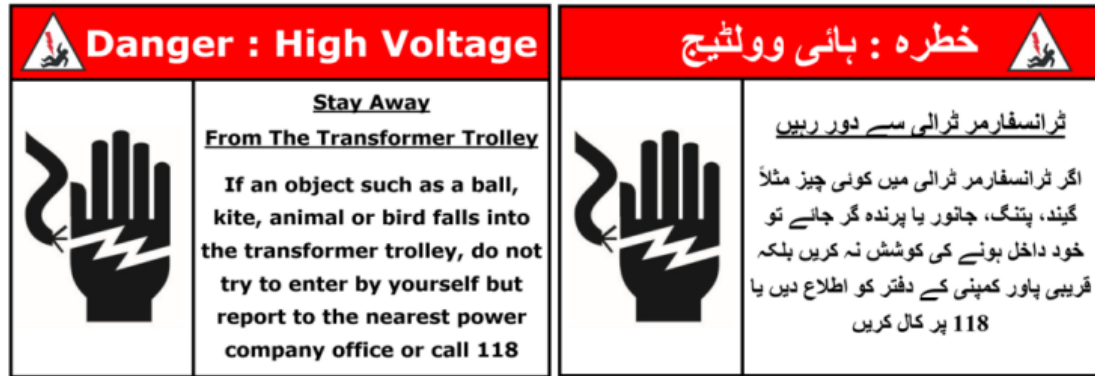
- Precautions shall be taken to avoid the development of static charges from oil flow in pipes, hoses, and tanks.
- Terminate the HT cable on HT bushings terminals, labeled as phases R, Y, and B. Simultaneously, the LT cable should be terminated on LT bushings terminals, labeled as phase r, y, b, and n, utilizing lugs of suitable sizes for LT termination. First connect ground connections, followed by LT connections, and finally connect HT connections.
- Transformers should not be energized until oil cools down to ambient temperature after oil circulation! filtration.

### n) Guidelines for Temporary Transformer Trolley


- Inspect the temporary transformer trolley, and associate parts for any visible damage. Do not proceed with installation if you notice any issues.
- Get PTW and provide temporary earthing on HT and LT line from both sides.
- Place temporary transformer trolley at proper level and stable location. It should be free from water accumulation, flammable materials, and potential contaminants. Clear the area of any obstacles or debris that could impede installation or maintenance.
- Install the transformer trolley at a safe place on the side of the road to avoid traffic/pedestrian congestion
- 11 kV side of the temporary transformer should be towards the 11 kV side of the faulty transformer at the time of installation.
- Earth the neutral of the transformer trolley with current earthing of the faulty transformer.
- Earth the body of the trolley of temporary transformer with the current earthing point of the faulty transformer body.
- Earth the trolley by connecting it to the same earthing of the faulty transformer and ensure that the earthing is correctly installed.  
i.e. Primary (HT) and secondary (LT) leads/cables shall be free of joints.
- Connecting the transformer's primary and secondary leads to the appropriate electrical connections on the trolley. Route input and output connections neatly and securely, avoiding sharp bends or kinks that can damage the lead.
- Temporary transformer trolley shall have proper fuses having standard size and rating.
- Uses shackle insulator, supports or clamps as needed to keep consumer service cables organized and in safe places.
- Maintain proper clearances around the transformer to allow for airflow and heat dissipation.
- After completion of the work, Line Superintendent/Supervisor shall perform a final inspection to ensure that the installation meets all safety and operational requirements to ensure that there is no possibility of leakage of current


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- Warning signs shall be printed/displayed on all sides of the temporary transformer trolley in Urdu, English, and/or any language understood by the local community. The signs shall be readable at a minimum distance of 5 feet.



- The network owner is responsible for overseeing the inspection and maintenance of in-service conductor/utility cable management at every pole/structure within their service territory and jurisdiction. It's essential to maintain proper clearance between conductors and surrounding infrastructure. The Line Management, Resident Engineer, and Sub-Divisional Officer shall ensure that all conductors/cables are properly managed, in good condition, correctly tensioned, and free of defects. When slack loops of additional cable are present on the pole/structure, they must be neatly and securely organized to avoid any potential damage.
- The Line Management, Resident Engineer, and Sub-Divisional Officer are responsible for securing all consumer service cables with shackle insulators, supports or clamps that are currently wrapped directly around the structure/pole without shackle insulator, supports or clamps to keep consumer service cables organized and ensure public and animals' safety. Consumer service cables shall not be directly wrapped around the structure/pole during new or re-connection. Over time, the service cable insulation can deteriorate and puncture due to weather conditions and wind exposure, leading to current leakage in the structure/pole and posing a risk of injury to the public and animals.
- All existing and new poles/structures more than 400 Volts and pole/structure mounted transformers shall have prominently displayed and maintained "Danger" sign to warn the general public about the risks of electrocution. These signs shall be clear and easy to understand. Wording on the signs should be in Urdu, English, and/or any language understood by the local community. The signs shall be placed at height of 8 feet (2.5 meters), facing towards the direction from which individuals are most expected to approach, and shall be readable at a minimum distance of 10 feet (3 meters)

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<b>Danger: High Voltage</b>  <b>خطرہ : ہائی وولٹیج</b>	
<p><b>When it rains, stay three meters (ten feet) away from power poles/structures and dropped conductors.</b></p>	<p><b>بارش کے دوران بجلی کے کھمبوں/اسٹرکچرز اور گری ہوئی تاروں سے تین میٹر (دس فٹ) دور رہیں۔</b></p>

r) High Voltage Static Capacitor Banks

- All high voltage capacitors, whether a single unit or a bank, shall be de-energized and grounded at their terminals before starting work.
- The discharged time constant of capacitors is given in the name plate data which must be considered to discharge the capacitor for safe working.

s) Transformer Installation

- PTW shall be by Concern Manager for transformer installation.
- AE/Supervisor/officer shall take PTW on the feeder and other safety PTWs if required where the transformer is to be installed.
- After taking PTW, AE/Supervisor/officer shall reach at the site where the transformer is to be installed.
- After seeing PTW, LM shall check the line by 11 kV tester or D-rod.
- After checking line, AE/Supervisor/officer shall earth the line on both sides as per earthing procedure.
- With the help of cranes, a transformer shall be placed at the platform.
- AE/Supervisor/officer shall tight the HT and LT jumpers and connect D-fuse links with the help of D-rod.

t) Procedure for Line Patrolling

- The objective of foot patrolling of transmission & distribution lines is to identify the mechanical and electrical defects and point out other problems that require further attention and corrective measures, for smooth and reliable performance of lines.

u) Procedure for Foot Patrolling

- Foot patrolling shall be done at least twice a year on all transmission & distribution lines.
- Line patrolling should be performed with caution. Patrollers shall be alerted to avoid walking into fallen wires or metal fences that may be energized.
- Patrollers should be alert and avoid stumbling hazards, poisonous plants and snakes.



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- Patrollers shall break all matches and crush all discarded smoking tobacco lying in the vicinity of lines.
  - The report of line patrolled shall be made on patrol books as per transmission & distribution lines maintenance package.
- v) Points to be noted during Line Patrolling
- During line patrolling, shortcomings/defects in the following important areas should be identified and noted by the patrollers:
  - Towers structures - footings, stubs/base plates, counterpoise, towers, structures members/braces, anti-climbing devices, step bolts, nuts & bolts, painting, warning and identification signs (such as number plates, danger plates and phase plates), guys end fittings, guy wire, anchor rods and other transmission & distribution lines hardware.
  - Careful check of alignment of structures and poles.
  - Careful check of leaning of structures & poles and backfilling.
  - Healthiness of the line conductors and their safe clearances from ground, phase to phase and from surrounding structures, trees and buildings etc. throughout the line length.
  - Construction of roads, buildings or other structures near the line.
  - Healthiness of insulators in all respects.
  - Erection of new telephone, telegraph or other lines by other departments near the KE lines.
  - Healthiness of cross arms in all respects.
  - Any other defect noted by the patrollers.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.27
- KDTP-P663-20-00 - Installation & Removal of Pole Mounted Transformer
- KDTP-P669-20-00 - Equipment Placement / Installation in 11KV Substation

### 9.28 Electrical Isolations:

#### 9.28.1 Purpose:

This section defines the mechanism and responsibilities of Lock Out Tag Out (LOTO). To establish, implement and maintain a process for the isolation, lock out and tag out of energy and equipment prior to commencing of works to prevent injury due to unexpected energization or startup of machines, equipment, and release of energy. Ultimate intent is to ensure safety of personnel working on equipment which have enough energy to cause injuries and / or major equipment damage.

#### 9.28.2 Scope:

This section shall be applicable to all KE and its administered location where electrical isolations are required during maintenance/ project activity

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### 9.28.3 Summary:


KE shall ensure electrical energy isolation before any employee/ contractor performs any servicing or maintenance on machinery or equipment or any electrical apparatus, where the unexpected energizing, start-up or release of any type of energy could occur, cause damage to equipment, injury to personnel and/or environment can be adversely impacted.

- a) Electrical energy isolation shall be conducted in compliance with the company isolation SOP/Procedure such as locking out and tagging out of electrical switches, circuit breakers, or other control devices including the opening of all relevant line isolators, as well as the closure of earth switches.
- b) Complete isolation shall be applied when performing corrective or preventive maintenance on any electrical equipment, apparatus or switchgear. Partial isolation of bus bars or connections is strictly prohibited.
- c) To ensure electrically safe work conditions, the following steps must be taken:
  - Clearly identify the exact work area, including the tag number of the equipment, pole, or structure.
  - Identify all potential sources of hazardous energy and define the working zone limits.
  - Completely disconnect the network from all possible sources of hazardous energy.
  - Secure the network against reconnection by applying lock and tag.
  - Test and verify disconnection by using voltage tester, detector, or beeper appropriate for the rated voltage to confirm that the line is dead.
  - Apply temporary earthing at all sides near to workplace to prevent back-feeding from consumer double supply lines, generators, UPS systems, stored charges from capacitors, lightning strikes, or induced voltage from conductors, apparatus, or transformers.
  - Protect against adjacent live parts by utilizing voltage-rated PPE/T&P along with portable rubber-insulated floor mats, insulated working supports or blankets, rubber or plastic plates, or any other non-conductive materials as needed for partitioning or shielding from potential electrical hazards.
  - Electrician/lineman shall carry a personal or proximity voltage detector (with voltage ranges from 120VAC to 500kV) all the time while working to detect induced voltage from adjacent conductors or circuit, particularly if the earthing clamp is loose or not electrically connected.

### 9.28.4 Energy-Isolating Device:

A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following:

- a) A manually operated electrical circuit breaker.
- b) A disconnect switch.
- c) A manually operated switch by which the conductors of a circuit can be disconnected
- d) from all ungrounded supply conductors and, in addition, no pole can be operated independently

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Note: Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.28)
- KE-CHSEQ-RP-062 PTW and LOTO Guidelines
- KDTP-P602-20-05 - HT/LT Isolation Procedure
- KDTP-P603-16-00 - Isolation Maintenance Work on HT LT Pole OH Lines
- KE/TPRE/SOP/624 - Lock-Out & Tag-Out of Indoor & Outdoor Equipment Used in KE Distribution Network
- LDC-SD-001 - LDC actions while arranging shutdown of power transformer
- LDC-WP-000/03 - Work permit system for Transmission line outages incorporated
- Generation Safety Rule Book

## **9.29 Mechanical Isolation:**

### **9.29.1 Purpose:**

Mechanical isolation is done before any employee/ contractor perform any servicing or maintenance on machinery, equipment, vessels or pipes where unexpected start up or release of any type of energy (kinetic, potential, thermal or chemical) can cause damage to equipment, injury to personnel and/or environment can be adversely impacted.

### **9.29.2 Scope:**

This section shall be applicable to all KE and its administered location where mechanical isolations are required during maintenance activity

### **9.29.3 General Requirements:**

All Business Units (where applicable) shall ensure that they have an up-to-date mechanical isolation procedure that covers the following before going for maintenance:

- Equipment owners shall be responsible for ensuring isolation, depressurizing, pouring and / or inserting of equipment as required.
- Equipment owner shall ensure that equipment is completely isolated, drained, purged, flushed and de-pressurized prior to opening a closed system.
- Put Tags or isolation devices on valves

To provide the most positive means of isolation the following shall be carried out.

- Disconnection of lines
- Insert Isolation Blinds / Spades
- Double Block and Bleed with use of blind
- Blinding shall be installed on the following, as a minimum:
  - Confined spaced entry
  - Removal of equipment
  - When the only isolation is a check valve

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e) Isolating plant processes

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.28)
- KDTP-P602-20-05 - HT/LT Isolation Procedure
- KDTP-P603-16-00 - Isolation Maintenance Work on HT LT Pole OH Lines
- LDC-SD-001 - LDC actions while arranging shutdown of power transformer
- LDC-WP-000/03 - Work permit system for Transmission line outages incorporated
- Generation Safety Rule Book

### **9.30 Permit to Work:**

#### **9.30.1 Purpose:**

The purpose of a work permit system is to ensure that jobs are safely planned, equipment is properly prepared, employees are adequately informed, and work is safely executed. The responsibility of safety is shared by all involved in the job covered by the work permit system.

#### **9.30.2 Scope:**

This section shall be applicable to all KE and its administered location where a permit is required for any routine, non-routine maintenance and project activity.

#### **9.30.3 General Requirements:**

“Work permit is an authorization given by approved, designated person of area owner to relevant interfaces to work in respective areas with a given time limit and as per specific conditions which were marked on the work permit.”

The work permit system must provide a work permit document or form(s) which are used as a tool to:

- Describe the type of work and specifically identify the area and equipment where the work is to be performed.
- Confirm that the work area has been properly prepared and inspected for the specific task before the work is issued.
- Work Permit System must follow Authorization Process for its various Roles including Work Permit Issuer, Work Permit Manager etc.
- The Work Permit system should separately address the permit requirements for different categories of work and cover the following aspects:
  - Lock out Tag Out of hazardous energy sources
  - LT/ HT Isolation for work
  - Control of ignition sources (Hot Work Permit). Permits shall be issued for all hot work, except for areas exempted by A Sub Level HSEQ Committee e.g., in mechanical workshops, canteen etc.
  - Entry into confined spaces.
  - Movement of heavy equipment relative to equipment containing hazardous materials (Including lifting over utility pipelines etc.)





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- Opening of Equipment and piping
  - Hot Work Permit like welding, cutting, grinding hydro-jetting etc.
  - Cold Work Permit, like routine maintenance activity (which does not involve ignition source), inspection, cleaning, scaffolding etc.
  - Vehicle Entry Permit
  - Excavation / Break-In Work Permit
  - Electrical Work Permit
  - Instrument Work Permit
  - Radiography Permit
  - Lifting Operation Permit
  - Diving Permit
- e) Specify the time limits of the permit.
- f) Evaluate the need for a TRA/ JSA.
- g) Designate if a gas test is needed type of test, time, and results of explosivity (LEL) etc.
- h) Specify standby equipment, personnel, and any special precautions, such as protective equipment, hazardous materials monitoring, etc.
- i) Provide space for signatures / initials of the parties responsible.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.29)
- General Safety Rule Book
- Work Permit System in BU Transmission (KE/TX/WPS/001)

### **9.31 Tools, Portable Power Tools & Heavy Equipment:**

#### **9.31.1 Purpose:**

The purpose of this section is to provide guidelines in establishing minimum safety requirements for all hands, Portable power tools and heavy equipment.

#### **9.31.2 Scope:**

This section is implemented in all Business Units of KE where operation or maintenance activity requires hand, Portable power tools and heavy equipment.

#### **9.31.3 General Requirements:**

- a) Correct tools for the required job are necessary. One must ensure that the tool being used for a job is the appropriate/recommended tool.
- b) Use guards/covers on all portable grinders & rotating machines.
- c) Inspect each tool prior to use to make sure that it is in good condition.
- d) Make sure each portable power tool, whether electrical or air powered, is in good condition prior to use and current inspection tape is attached.

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- e) Be sure all recommended safety devices and machinery guards are in place before
- f) using equipment and / or machinery.
- g) Do not tamper with, experiment with, or operate equipment that you are not
- h) authorized to use.
- i) Position hands and body carefully when using hand tools or portable power tools.
- j) Use hose approved for the service.
- k) Scissors and other sharp tools shall have ends blunted and when not in use must be
- l) stored in a sheath.
- m) Do not use spark-producing tools in classified areas without proper authorization.
- n) Use tool holders for chisels and punches.
- o) Do not hold tools or other items while climbing on monkey ladder.
- p) Defective and/or damaged tools must not be used.

Hand tools can cause accidents when a wrong, improvised or defective tool is used. Also, when the correct tool is used carelessly or not put away safely, there is danger of an accident. While using hand tools, the following rules should be observed:

- a) Make sure you select the correct type and size of tool for the job.
- b) Check the condition of the tools before you use them.
- c) Don't use tools that are worn out or damaged.
- d) Maintain your tools in good condition and remember that cutting and drilling tools need to be sharp to be safe.
- e) Make sure you use each tool in the correct manner.
- f) Store tools safely

### 9.31.4 Heavy Equipment:

- a) Prior to mobilization, KE/Contractor must assess crane/lift operators for competency and ensure that all certification is valid for the equipment, operator and riggers being used.
- b) Competent persons will conduct inspection of rigging equipment and label it. Use tag lines when lifting with hoist or cranes. Designated qualified crane riggers trained in approved hand signals will be required.
- c) An attendant must always be appointed and be available during crane/excavator work to assist and guide the operator
- d) Excavators with a swinging motion must have a clearance of at least 0.6 meters (2 feet) from any fixed object.
- e) Booms/hooks on excavators/Cranes must be latched before travel.
- f) Pedestrians should be instructed in safe pedestrian routes on site and the procedure for making drivers aware of their presence



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### 9.31.5 Inspection & Audit:

- KE shall establish a Risk Management audit program in which hand tools audit shall be carried out at set frequency.
- KE Line management shall ensure inspection of hand tools regime is developed and implemented and record is being maintained.
- Risks associated with lifting are significant and, coupled with the considerable scope of such activity, represent a substantial area of potential loss exposure. Consequently, the KE or its contractor will utilize stringent control on both the lifts themselves, and the hardware involved. Therefore, all cranes, lifting accessories/ tools, fork lifters, etc., will be inspected, load tested, and all certification checked by the KE/Contractor prior to entry onto the worksite. For critical lifting (above 20 T), rigging plan shall be submitted by contractors. Apart from the 3rd party certification of lifting equipment and tools, KE shall develop their internal inspection protocol.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.30)
- KE-HSE-D-12, HSE-D Manual
- G&T-HSE-2016 Safe operating procedure for using overhead cranes
- KDTP-P601-09-00 Care Maintenance & Use of Workman's Safety Devices and Tools

### 9.32 Work at Height:

#### 9.32.1 Purpose:

The purpose of this section is to provide guidelines for safe access at height and fall protection.

#### 9.32.2 Scope:

This section is implemented in all Business Units of KE.

#### 9.32.3 General Requirements:

Special care and awareness should always be practiced when working jobs on elevated structures or platforms. Even the smallest of objects dropped from an elevated structure has the potential of causing severe injury and death

Workers must always use certified scaffolding if permanent working platform is not available. Scaffolding erection staff must take care of and follow the standards identified in procedure mentioned above like use of double lanyard safety harness and installing red tag.

If possible, work should be scheduled that removes as much of this potential as possible. However, when this cannot be avoided good communication and work practice must ensure in protecting people from potential falling objects. Site supervisor must ensure the permit to work compliance and conducted TBT highlighting the hazards pertaining to scaffolding and working at height. Area should be barricaded, and warning labels attached to inform and warn anyone in the area of the ongoing elevated work. Ensure adequate toe boards are in place at all times while working on scaffolding. Use proper storage of tools and equipment to reduce the chance of falling objects. Use proper rigging techniques for handling of material/equipment.



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**Caution: “Do Not Use This Scaffolding”** tag should be displayed on the scaffold if it is incomplete, unsafe, substandard, expired or yet to be certified by Scaffolding Erecting job executor.

Contractor is responsible for ensuring that their scaffolding inspectors are 3rd party certified and maintaining their certification valid.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.31)
- KE-GEN-BQPS II - HSEQ-SOP-018, Work at Height

### 9.33 Ladders:

#### 9.33.1 Purpose:

The purpose of this section is to provide guidelines in establishing minimum safety requirements for while using ladders.

#### 9.33.2 Scope:

This section is implemented on all Business Units of KE and its administered location.

#### 9.33.3 General Requirements:

The safety of a ladder depends on four important factors: selection, condition, position and use.

- Inspection of all service ladders must be ensured before used and remove defective ladders, ladders shall be properly secured at the top and provide stable footing while being used.
- A ladder must be of the proper length for the job to be done. If it is to be used for access or as a working place, it shall rise to a height of 36 inches to 42 inches above the landing place or above the highest rung to be reached by the feet of the man using the ladder.
- Ensure ladders extend a minimum of 1 m (3 ft.) above the top landing point
- Metal ladders, ladders with metal reinforced side rails, and ladders which are wet shall not be used when working on or near electrical equipment with exposed live conductors, used only non-conductive ladders. (Metal ladders, ladders with metal reinforced side rails, and ladders which are wet) all such ladders shall have a warning notice attached to guard against use near electrical equipment.
- Each ladder shall be examined before use. Those with split or broken side rails, missing, broken, loose, decayed or damaged rungs or cleats, or with other faulty equipment shall be tagged and removed from service.
- Set ladders at a 4:1 slope. When climbing up or down any ladder, face the ladder and maintain three points of contact with hands free of materials. Only a single person can use it at a time.
- Fall protection must be provided for employees climbing or working on FIXED ladders above 24 feet.
- Fall protection is not required for employees while climbing or working on portable ladders unless it is anchored on a rigged anchorage point at height, having fall clearance safety factor three (03) feet from impact level or ground level.
- Rungs shall be properly mortised into side rails. Rung distance should be even and range between 12 to 18 inches.




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- j) The side rails of a ladder shall be equally supported on a firm level surface. Boxes, blocks, barrels, etc. shall not be used as a means of support. The area at the base of a ladder must be kept clear. Ladders shall not be used in a horizontal position as platforms, runways or scaffolds.
- k) Ladders shall not be supported on their rungs or cleats. Rungs or cleats shall not be used to support planks.
- l) All poles, towers and structure shall be carefully inspected before climbing to assure that they are in a safe condition for the work to be performed and that they are capable of sustaining the additional or unbalanced stresses to which they will be subjected. The types of abnormalities that should be checked are cracks, damages, and deteriorations in poles, towers and structure and its foundation.
- m) If poles, towers and structure are unsafe for climbing, they shall not be climbed until made safe by guying, bracing or use mobile elevated aerial platform, man-baskets, man-lift or bucket mounted vehicle instead of ladder.
- n) Whenever possible, ladders shall be set at an angle of 75° to horizontal ground.
- o) Obstruction should not be observed at backside of the rung to avoid foot slipping
- p) Both side rails of the ladder should be evenly placed on the surface.
- q) Before mounting a ladder, personnel shall check their shoes for freedom from grease, oil or mud. They shall always step through, not around, the rail extensions at the top of the ladder
- r) Personnel ascending or descending ladders shall not carry tools and materials in their hands.
- s) Step ladders should be extended to the fullest to provide integrity
- t) Ladders should not be painted.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.32)
- SOP/D/R&D/ESP/0601-2009 - Personnel Protective Equipment PPEs Ref. HSE D Manual)
- KE Specification NO. K/R&D/RG/50 - Requirement of safety devices and special tools (Ref. HSE D Manual)
- Daily inspection checklist MTL ladder safety SOP/FM/MTL-L5 & 16 Feet MTL ladder checklist
- Ladder daily inspection checklist - KDTP-S347-18-01-Fiberglass Ladder

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### 9.34 Excavation:

#### 9.34.1 Purpose:

The purpose of this section is to provide guidelines in establishing minimum safety requirements while planning excavation activities.

#### 9.34.2 Scope:

This section is implemented in all Business Units of KE and its administered locations.

#### 9.34.3 General Requirements:

Special care and awareness are required while performing civil jobs at site. Ensuring compaction of site before bringing in heavy equipment must be ensured to avoid vehicle toppling and / or sticking in field. Only Certified and fit equipment shall be brought into the job site.

It is imperative to ensure that before commencing excavation, standard requires to determine the approximate location(s) of underground utility installations — including sewer, telephone, water line, process pipelines, electrical cables, or grounding system. Follow excavation permit protocols and identify underground utilities on drawings which should be attached with permit. In case the piping or electrical cables are present, and excavation is still to be carried out, in this case mechanical excavators shall not be used until all obstructions have been exposed by manual digging or this should be done through excavation permit protocols, identify utilities on drawings which should be attached with permit and communication shall be done to all interfaces.


If electrical live cable de-energization is not feasible, the suitable protection measures should be applied such as providing a wooden box around the cable, providing protective sleeve for the cable, insulating personnel and equipment from possible electrical contact. Insulation of hand tools. Adopting test trenches excavation method by using hand tools to unveil underground pipes and electrical cables, etc.

Ensure proper communication done with local authorities for road closure. Where there is a likelihood of public, vehicles or equipment falling into an excavation, suitable barriers shall be erected including fencing of the excavation area, supervision, flagmen, traffic control and other measures required to ensure the safety of public at all times. Blinking warning lights should be used during dark to mark the limit of the work.

Restrict the movement of heavy machinery or vehicles in surroundings of excavated area, to avoid any collapse.

To protect workers from cave-ins, the following control measures must be taken:

- Sloping and benching the sides of the excavation.
- Supporting the sides of the excavation; or
- Placing a shield between the side of the excavation and the work area.
- The removed soil shall not be stockpiled closer than 2ft from the excavated edges
- If excavation/Trenches exceeding 4 feet (1.2 Meters) in depth should be treated as confined space and safe means of access shall be provided for entering and exiting any excavation following confined space work permit protocols.

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- f) A safe means of egress from trench such as ladder, ramp, or stairway shall be located with 25ft of workers present in the excavated area and provide suitable entry and exit points for the excavation.

**CAUTION:** As per OSHA, any excavation, sewers, pits more than 4ft depth shall be considered as Confined Space.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.33)
- KE/CHSEQ/RP/072 Excavation Safety Guidelines
- KE-Gen-BQPS-II-HSEQ-II/042 - Control of Digging

### 9.35 Welding & Cutting:

#### 9.35.1 Purpose:

The purpose of this section is to provide guidelines in establishing minimum safety requirements while planning/executing welding & cutting related activity.

#### 9.35.2 Scope:

This section is implemented in all Business Units of KE and its administered locations.

#### 9.35.3 General Requirements:

- All welding and cutting jobs shall be done following safety protocols and against Permit to Work System.
- Personnel working with welding, cutting, and grinding equipment shall be trained, competent, and provided with personal protective equipment such as Welder Face shield, Mask, Leather Gloves and Welding Shade Number.
- Welding goggles, helmets, screens, forced ventilation (for confined space) and similar equipment shall be provided for all workers and for trainees in the immediate area.
- TRA/ JSA shall be carried out before every hot job (except normal drilling activity) at same elevation and above/ below elevation to test accumulation of explosive mixture.
- All equipment should be examined immediately before use and regularly maintained.
- All welding operations shall be conducted in well ventilated areas.
- Hoses should be used for one type of gas only and color coded for identification. They should be examined before use for any signs of splitting which might give rise to leakage. All connections should be made by clips or crimps. The hoses used for acetylene and for oxygen shall not be interchangeable.
- Means of torch ignition should be readily available. A friction lighter shall be used for this purpose.
- Gas cylinders shall be color coded and stored in segregation. Color coding can be of great help but also a potential source of danger.
- Flash back arrestors shall be installed on both ends of hoses (torch side and cylinder side)
- Never put the heating torch to cylinder body contact.
- Acetylene can form explosive compounds in contact with certain metals or alloys, particularly unalloyed copper or silver. Joint fittings or lines made of copper should not be used and acetylene should not be allowed to come into contact with copper pipe work or tubing. Only approved materials shall be used for acetylene systems.
- Welding connections for arc welding should be properly tight.

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- n) The ventilation fan should be in working condition & equipment should be grounded properly.
- o) Welding cable insulation must not be damage. Always replace with new one if found damage. Cracked insulation is not acceptable.
- p) Welding and cutting sparks shall not fall on gas cylinders, flammable materials or operating equipment.
- q) Do not adjust the 'current control' while welding is in progress. This can damage the control.
- r) Always ensure that combustible material is removed at least 35 ft. surrounding the hot work, Oxygen and fuel cylinders should not be stored together.
- s) Use canopy made of fire blankets that should cover the welding, cutting and grinding activity.
- t) Arrange trained Fire watch with adequate number of fire extinguishers.
- u) Sufficient lighting to be provided once working at night.
- v) Use fixed guard on grinder machine.
- w) Properly rated disks should be used for grinding and cutting.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.34)
- KE-CHSEQ-RP-070 Hot Work Guidelines
- KE-Gen-BQPS-II-HSEQ-II/038 - Hot Work Safety
- Hot work permit - KDP-P619-19-02-Earthing of HT/LT Equipment

### 9.36 Hydro-Jetting:

#### 9.36.1 Purpose:

The purpose of this section is to provide guidelines in establishing minimum safety requirements while planning/executing hydro-jetting activity.

#### 9.36.2 Scope:

This section is implemented on all Business Units of KE and its administered locations.

#### 9.36.3 General Requirements:

Personnel engaged in high-pressure water cleaning operations will have satisfactorily completed a training course provided by the employer, which includes safety considerations and equipment operation before cleaning on company sites.

All contractor employees involved in high pressure water cleaning must be a full-time employee of the service company. Contractors must be able to provide all qualifying documentation to site personnel upon request. Following protocols shall be established before commencing hydro jetting activity:

- a) Activity shall be performed in accordance with Permit to Work System
- b) Hydro jetting checklist shall be filled along with permit.
- c) High pressure water cleaning activity shall require JSA prior to start the activity.
- d) Activity shall be completely cordoned off with sheets, concrete wall, tarpaulin, and appropriate safety signs shall be posted.
- e) Ensure proper working of Dead Man handle of the hydro-jetting equipment before start of work.

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- f) Before attempting to inspect or adjust any component of the hydro-jetting machine, the Foot-Control Valves (dump valves) must be not pressed.
- g) The anti-withdrawal device must be used on all flex lances, rigid lances and line moling activities. The anti-withdrawal device must be securely attached to the equipment being cleaned.
- h) Job shall be carried out by trained and designated person who shall wear:
- Helmet
  - Face Shield
  - Cut-resistant suit/Heavy Duty Hydro Jetting Suit
  - Respiratory protection (when require for confined space)
  - Rubber Gloves
  - Gum Boots
  - Ear Plugs / Earmuffs
  - Use specialized ultra-high pressure PPE suit for Ultra High pressure (40K Psi) for hydro jetting job.
- i) Pump unit shall be equipped with safety relief valve.
- j) All hoses shall be free of damaged wire braids and of correct pressure rating equipped with restraining (Whip Check) devices across couplings.
- k) When hose drops exceed ten (10) feet, the hose shall be securely tied off to a rigid support to limit the pull due to the weight of the hose. All hoses must be protected from damage due to vehicle traffic.
- l) Make arrangement for saddle holder for smaller equipment hydro-jetting, to prevent wrong holding of hydro-jetting gun.
- m) Install a Chicago coupling and attach a whip check safety device/arrestor (minimum of 1.5 times the hose's rated pressure) with one end of the hose and the other end is secured to a fixed object or another section of the hose. This ensures the high-pressure hose remains anchored, preventing violent dislodgment or movement.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.35)



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### 9.37 **Ionizing Radiation:**

#### 9.37.1 **Purpose:**

The purpose of this section is to provide guidelines in establishing minimum safety requirements while planning/executing ionization radiation (radiography).

#### 9.37.2 **Scope:**

This section is implemented on all Business Units of KE and its administered locations.

#### 9.37.3 **General Requirements:**

KE shall establish, implement, and maintain a program to ensure safe use, handling, managing, processing, operating, storing, transporting, and monitoring. This program shall also provide minimum safety requirements for radioactive materials, equipment, and its waste such as gamma rays, X-rays, alpha particles, and beta particles, or indirectly such as neutrons, used for industrial purpose. This procedure shall be in compliance with applicable national and provincial legal requirements to protect people and the environment from harmful effects of ionizing radiation. KE shall regularly monitor radiation workers, who are likely to receive an effective dose of radiation, for corrective and preventive actions.

*The company shall ensure that the relevant contractor is approved with Pakistan Nuclear Regulatory Authority.*

Communication between area owner and the contractor who is performing this service must be established and maintained throughout the activity. To ensure this, following protocols shall be established before commencing the activity:

- a) All radiography activity shall be performed through Permit to Work System.
- b) Activity plan shall be provided by contractor to KE (Activity Coordinator) who will then circulate it to all stakeholders for effective communication.
- c) The activity supervisor shall ensure the complete evacuation of the area before starting the radiation job.
- d) The Ionization Radiation contractor shall provide the following documents before starting the job:
  - Pakistan Nuclear Regulatory Authority (PNRA) Valid License
  - Decay Table of 3<sup>rd</sup> Party
  - Emergency Response Procedure
- e) Each Person engaged in the activity shall have a valid certificate.
- f) All individuals handling the radiation sources shall wear approved PPE and Film / TLD (Thermo Luminescent Dosimeter) Badges
- g) Each area where activity to be performed shall be barricaded with yellow and black tape mentioning "DANGER RADIATION" sign.
- h) Visual warning signs of radiation hazard posted at all sides of the restricted area. During night, flashlights should be installed to ensure communication at larger distance.
- i) Radiation activity supervisor shall establish a controlled area of radiation zone.



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- j) Radiography activity will be carried out during night or lunch time when minimum workforce will be present at plant area.
- k) All other work within the identified radiation hazard area must be stopped and all personnel must be evacuated from this area.
- l) Deputation of standby man surrounding the area especially at pedestrian passage if present.
- m) All radiography equipment especially the projector and survey meter shall be regularly inspected, calibrated, and kept in working condition.
- n) In case of Emergency:
  - In case of mishap, immediately inform Supervisor In-Charge of the area where Radiography Test (RT) is conducted and seek advice for proposed action.
  - Attempt to place source in Lead Container quickly if possible
  - Do not try to pick the source with bare hand.
  - The supervisor shall summon any other necessary help outside agency i.e. PNRA if required

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.36)
- KE-Gen-BQPS-II-HSEQ-II/043 - Ionization Radiation for Non-Destructive Testing

### 9.38 Hazard Communication Program:

#### 9.38.1 Purpose:

The purpose of this document is to describe the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), The primary purpose of HAZCOM (Hazard Communication) is to reduce the frequency of incidents and injuries caused by chemicals and to educate the workers how to react when they engage in emergency due to chemical exposure or spill etc. **Scope:**

This section is applicable to all Business Units of KE and its administered locations (where required).

#### 9.38.2 Summary:

KE has established, implemented and maintained Hazard Communication Program to identify onsite available chemical inventory along-with its hazards detail as provided in Safety Data Sheet (SDS).

#### 9.38.3 GHS:

The GHS is of Classification and Labeling of Chemicals, standardizing and harmonizing the classification and labeling of chemicals. It is a logical and comprehensive approach to:

- a) Define health, physical and environmental hazards of chemicals.
- b) Create classification processes that use available data on chemicals for comparison with the defined hazard criteria; and
- c) Communicate hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS).

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#### 9.38.4 Safety Data Sheet:

Safety Data Sheet (SDS) is the comprehensive document which provides the information needed to understand the following:

- What chemical is?
- What hazards are presents?
- How to response to these hazards?

As per OSHA, the following information should be part of every SDS:

1. Chemical Identification	2. Hazard (s) Identification
3. Composition/Information on Ingredients	4. First Aid Measures
5. Fire Fighting Measures	6. Accidental Release Measures
7. Handling & Storage	8. Exposure Control and PPE
9. Physical & Chemical Properties	10. Stability & Reactivity
11. Toxicological Information	12. Ecological Information
13. Disposal Considerations	14. Transportation Information
15. Regulatory Information	16. Others







**Reference:** OSHA 29 CFR 1910.1200 Hazard Communication Standards: Safety Data Sheet

#### **Note:**

SDS are not risk assessment. When using substances, risk assessment must be performed by taking guideline from SDS.

Where applicable, every site shall be equipped with SDS.

#### 9.38.5 GHS Labels:

		
Flame Over Circle	Flame	Skull & Crossbones
		
Corrosion	Exploding Bomb	Gas Cylinder

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Environment





Health Effects



Exclamation Mark


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#### 9.38.6 Sample hazcom:

<div style="background-color: #cccccc; padding: 5px; display: inline-block;">Chemical Name</div>		
Code _____	Company Name _____	
Product Name _____	Product Name _____	
	<div style="font-size: 2em; color: red; font-weight: bold;">DANGER</div>	
<div style="color: brown; font-weight: bold; font-size: 1.2em;">HAZARD</div>		
<div style="color: blue; font-weight: bold; font-size: 1.2em;">First Aid Measures</div>		
<div style="color: green; font-weight: bold; font-size: 1.2em;">Precautionary Measures</div>		
<div style="color: red; font-weight: bold; font-size: 1.2em;">Fire Fighting Measures</div>		
<div style="font-weight: bold; font-size: 1.2em;">Direction for Use</div>		

**Note:** For details of the above section, refer to below document(s):

- KE-SP-017 Hazardous Substance Management
- KE/CHSEQ/PSM/13 Process Safety Information

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### **9.39 Polychlorinated Biphenyls (PCBs):**

Polychlorinated biphenyls (PCBs) were widely used as a fire retardant and insulator in the manufacture of transformers and capacitors due to their ability to withstand exceptionally high temperatures till 1979. KE has used PCBs as dielectric oil in the past and has relevance with the issues related to the management, disposal, and alternatives of PCBs as a category of Persistent Organic Pollutants (POPs).

Although KE has eliminated PCB from its system with the assistance from Ministry of Climate Change Pakistan and United Nations Development Programme. However, in case PCB presence is found, care must be taken to ensure strict adherence to PCB Management Procedure as it lists all the required safety precautions, personal protective equipment, handling, storage, decontamination, and disposal protocols.

Note: For details of the above section, refer to below document(s):

- KE – SP – 029 PCB Management Procedure

### **9.40 Asbestos & Asbestos Containing Material, Equipment & Items:**

KE has generally eliminated asbestos from its facilities. Asbestos shall not be used in new projects. Demolishing works where asbestos may be present must be conducted with strict adherence to Asbestos Management Procedure as it defines all required personal protective equipment and decontamination protocols.

Note: For details of the above section, refer to below document(s):

- KE – SP – 027 Asbestos Management Procedure

### **9.41 Work over or adjacent to water:**

#### **9.41.1 Purpose:**

The purpose of Work Over Adjacent to Water is to provide guidelines for safe work practices.


#### **9.41.2 Scope:**

This section is applicable to all KE Locations (where applicable).

#### **9.41.3 General Requirements:**

When workers are engaged in work over or near water and when danger of drowning exists, suitable protection (lifesaving and rescue equipment) shall be provided.

- Life vests shall be worn by an employee/contractor when working over water. Full body harness with double lanyard for 100% securing the person all the time shall be used to avoid fall hazard.
- KE shall ensure that people that have fallen into water can be easily and swiftly rescued and/or brought to the shore.
- KE shall provide adequate lifesaving and rescue equipment at every workstation where work is being carried over or adjacent to water.
- Lifebuoy rings (often called life rings or life preservers) shall be available to throw to someone who's fallen into the water to rescue him.

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**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.40)

## **9.42 Adverse Weather:**

### **9.42.1 Purpose:**

The purpose of this procedure is to provide guidelines to stay alert and take necessary actions for adverse weather forecast and same is immediately communicated to all concern stake holders.

### **9.42.2 Scope:**

This Adverse Weather Procedure applies to all KE locations.

### **9.42.3 Summary:**

KE in collaboration with the MET department is monitoring weather updates day and night of all the strategic location of assets and operational areas and when inclement weather is expected, necessary corrective and preventive measures/precautions are implemented to ensure safe continual operations, avoid any incident to employee/ contractor, member of general public and loss of equipment/property:


- Adverse weather forecast is immediately communicated to all internal and external stake holders for taking early necessary precautions for any forthcoming weather issues.
- Safety alerts/advisories for emergent safety issues to the public, posted on social media, safety alert messages forwarded to employees and public.
- Ensure safety messages/alerts are disseminated to customers/public utilizing all possible forms of media including local cable networks, as and when required/advised by HSE concern departments.
- Ensure media campaign for public safety before and during monsoons as well as heat waves.
- Adverse weather conditions include:
  - Heat Wave, extremely hot and humid weather,
  - Medium to heavy rainfall
  - Floods
  - Heavy and continued sandstorm,
  - Strong winds,
  - Lightning and thunderstorms,
  - Fog and smog
  - Earthquakes
- All emergency measures shall be taken as per the guidelines mentioned in the following documents

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.41)
- KE Business Continuity Plan
- G&T Business Continuity Plan
- Distribution Business Continuity Plan

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- KE-SP-026 - Disaster Management Procedure
- HSE-D and HSE-G&T Manuals
- KE Social Media

### **9.43 Environmental Management System:**

#### **9.43.1 Environment and Sustainability Management System (ESMS)**

KE has developed an Environmental Sustainability Management System (ESMS) manual which provides guidelines for the implementation of ESMS in all BUs across KE to ensure that the business activities undertaken by KE have a minimal impact on the surrounding area and the wider environment. KE Management places Environmental Sustainability ahead of its planning, construction, operations, maintenance schedules, costs, and all other phases of business. To accomplish and sustain this goal, each employee must accept and exercise individual responsibility by working safely and contributing effectively towards environmentally sustainable activities across KE. The ESMS Manual captures the detailed rules to be followed by all concerned in connection and acts as a signposting document to indicate how each of the clauses in ISO14001:2015 is addressed. It contains:

- Corporate HSEQ Policy
- Corporate environmental procedures
- Statements of responsibility and authority
- Identification of the resources and training allocated to management and verification activities including internal environmental audits
- Appointment of the Environmental Sustainability Management Representative (ESMR)
- Formation of Environmental Sustainability Management Committee
- Arrangement for periodic management reviews

The scope covers all the departments falling under BU Generation, Transmission, Distribution, Enabling Functions, and third-party contractors/suppliers working across KE.

Below is an overview of Corporate environmental procedures. For details, refer ESMS Manual 2023 (KE – EMS – 01).


#### **9.43.2 Environmental Aspect Impact Assessment**

KE's ESMS is developed to manage significant environmental aspects so as to minimize or eliminate their impact on the environment. The planning process commences with the identification and updating of environmental aspects. In order to evaluate the impacts of its activities on the environment, KE shall establish, implement and maintain a procedure to identify the environmental aspects of its activities and services that it can control and those that it can influence taking into account planned or new developments, or new or modified activities and services. These aspects, inclusive of those arising from works carried out by contractors, are registered in the Register of Environmental Aspects.

Each department will conduct an assessment to identify its environmental aspects that can result in a positive or a negative impact. This aspect/impact assessment will be conducted on the risk matrix where the highest rated risks will be given the highest priority and mitigation plan will be developed. KE shall ensure that all environmental aspects that may pose significant impacts to the environment are under control and prioritized for improvements. KE shall keep this information up to date.

Relevant procedure: KE – SP – 039 Environmental Aspect Impact Assessment 2023



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#### 9.43.3 Environmental Legal Register

KE shall establish, implement, and maintain a procedure to identify and maintain access to legal requirements that are relevant to the company, as well as other requirements that the company subscribes to which relate to the company's environmental aspects.

KE shall identify all relevant regulations, codes of practice and guidelines that are applicable to the environmental aspects of its activities and services and record this information in the Environmental Legal Register. KE shall keep this information up to date.

Relevant procedure: KE – SP – 015 Environmental Legal Register 2023

#### 9.43.4 Environmental Monitoring and Management

KE shall define the mechanism for the monitoring and measurement of priority environmental parameters associated with KE's operations and the evaluation of compliance with relevant environmental legal and policy requirements, with an objective to evaluate possible impacts on the environment due to stack emissions, effluent discharges, solid wastes, and noise generated as well as to develop and implement an appropriate mitigation plan to improve KE's environmental performance and reporting. The records of the compliance monitoring results of the periodic evaluations shall be retained.

Relevant procedure: KE – SP – 016 Environmental Monitoring and Management 2023

#### 9.43.5 Asbestos Management

KE has identified and largely removed asbestos containing material from its system and ensures that all materials and items purchased are asbestos free. However, for the remaining locations or unidentified materials, care must be taken to ensure strict adherence to this procedure as it specifies safe practices for handling, removal, temporary storage, transportation, and disposal of asbestos with the organized and planned involvement of staff and lists safety precautions and protocols.

Relevant procedure: KE – SP – 027 Asbestos Management Procedure 2023

#### 9.43.6 SF6 Monitoring


KE uses Sulfur hexafluoride (SF6) at high voltage interface between the generation and transmission systems for insulation, arc quenching, and current interruption in gas-insulated switchgear (GIS) and circuit breakers. The gas is also used in Ring Main Units (RMUs) within Distribution Network. KE is committed to reducing and minimizing greenhouse gas; effective management of SF6 gas is one of the key steps in this regard. KE accounts for SF6 gas used in its system, and the amount of gas that has been lost to the atmosphere.

Management of SF6 Gas must be done with strict adherence to SF6 Monitoring & Management Procedure which applies to the KE sites and third-party contractors/suppliers working within the company's jurisdiction, where SF6 is purchased, stored, used, transferred, transported, or handled.

Relevant procedure: KE – SP – 028 SF6 Monitoring & Management Procedure 2023

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#### 9.43.7 PCB Monitoring

Polychlorinated biphenyls (PCBs) were widely used as a fire retardant and insulator in the manufacture of transformers and capacitors due to their ability to withstand exceptionally high temperatures till 1979. KE has used PCBs as dielectric oil in the past and has relevance with the issues related to the management, disposal, and alternatives of PCBs as a category of Persistent Organic Pollutants (POPs).

KE has eliminated PCB from its system with the assistance from United Nations Development Programme (UNDP) and Ministry of Climate Change (MOCC) Pakistan in 2020 and ensures that PCB containing equipment are not added in its network through testing of new transformer oils. However, in case PCB presence is found, care must be taken to ensure strict adherence to PCB Management Procedure as it specifies safe practices for handling, removal, storage, transportation, and disposal of PCBs contaminated equipment with the organized and planned involvement of staff and lists safety precautions, personal protective equipment, handling, storage, decontamination, and disposal protocols.

Relevant procedure: KE – SP – 029 PCB Management Procedure 2023

#### 9.43.8 EMF Monitoring

Electromagnetic fields (EMF) are emitted around energized power lines and electric equipment. There has been scientific debate about the health effects of EMF exposure, there is no agreement among the scientific community about certain effects. However, the weak evidence has led some legislation bodies and international organizations to put some standards regarding exposure to EMF.

KE has established a procedure to provide guidelines for Electromagnetic Field (EMF) measurement and management and ensuring safe exposure of KE staff and general public to KE's transmission and distribution network. It also lists the International Standards Guidelines as well as measuring, recording, reducing and reporting protocols.

Relevant procedure: KE – SP – 030 EMF Monitoring & Management Procedure 2023


#### 9.43.9 Indoor Air Quality Monitoring

KE is committed to provide each employee a safe place of employment and will take actions to keep the workplace free of recognized hazards that cause, or are likely to cause, serious physical harm and, when available, will employ feasible means that will eliminate or materially reduce the recognized workplace hazard. KE recognizes the impact that indoor air quality has in the workplace and has developed a procedure to provide the staff with the optimum level of indoor air quality at KE locations and recommend actions for identifying and resolving indoor air quality issues in a manner that prevents them from reoccurring and avoids the creation of other problems.

Relevant procedure: KE – SP – 041 Indoor air Quality Monitoring Procedure 2023

#### 9.43.10 Noise Monitoring

Consistent exposure to noise levels above allowable limits and suggested duration is hazardous to human health and in such case precautionary measures should be employed. The purpose of this procedure is to provide

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guidelines for hearing conservation and occupational noise management within KE premises as per OSHA Hearing Conservation Program. The ambient noise monitoring at and beyond the boundary of the facilities is covered in the scope of KE-SP-015 Environmental Monitoring & Measurement Procedure.

Relevant procedure: KE – SP – 042 Noise Monitoring Procedure 2023

#### 9.43.11 Illumination Monitoring

Lighting is an essential provision for any workplace. It is preferable to provide uniform illumination over the entire workplace by combining both natural and artificial lighting. Localized lighting may be required in certain cases to cut costs and improve illumination. The purpose of this procedure is to eliminate the risk of harm (injury or illness) due to poor lighting, where reasonably practicable.

Relevant procedure: KE – SP – 043 Illumination Monitoring Procedure 2023

#### 9.43.12 Waste Management

Waste is generated from various activities at different locations across KE. The type of waste generated depends upon the nature of operations and activities at a particular location or site. Improper management and disposal can cause serious impacts on health and problems to the surrounding environment. Proper methods of waste disposal have to be undertaken to ensure that it does not affect the environment or cause health hazards. It is the responsibility of the respective BU to protect human health and the environment by ensuring compliance with the applicable regulatory requirements.

Relevant procedure: KE – SP – 012 Waste Management Procedure 2023

#### 9.43.13 Hazardous Substance Management

KE management is committed to protect the environment and to ensure the health and safety of employees, contractors and visitors. Employees and contractors must be aware of the hazardous substances, their safe management, and hazards of spills and know how to protect themselves and the environment.

Relevant procedure: KE – SP – 017 Hazardous Substance Management Procedure 2023


#### 9.43.14 Resource Conservation

Sustainable natural resource conservation is a process of rational use and skilful management and preservation of the natural environment with all its resources. BUs at K-Electric shall quantify current practice, set targets and take practical action to reduce environmental impact and costs by optimizing the use of resources.

Relevant procedure: KE – SP – 40 Resource Conservation 2023

#### 9.43.15 Environmental Studies & Management

Under federal and provincial Environmental Protection Acts, no proponent of a project can commence construction or operation without filing an initial environmental examination, an environmental impact assessment or an environmental checklist with the respective Agency and obtaining an approval in respect thereof. There is a procedure to set a guideline to carry out Environmental Studies of new and expansion projects within KE for

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regulatory compliance and to ensure that the business activities undertaken have a minimal impact on the surrounding and wider environment.

Relevant procedure: KE – SP – 038 Environmental & Social Studies and Management Procedure V2 2025

#### **9.43.16 Chance Find Procedure**

This procedure outlines the commitments and shapes the responsibilities, monitoring, and implementation schedule in relation to Chance Finds for cultural heritage during execution of the new projects undertaken by KE. It includes the mitigation guidelines necessary to ensure that negative impacts to cultural heritage, due to project activities are prevented or, if this is not possible, as low as reasonably practicable (ALARP) during different project phases.

Relevant procedure: KE – SP – 044 Chance Find Procedure 2023

#### **9.43.17 Internal Environmental Audit**

KE believes that audit is an important tool in the establishment, measurement, maintenance, and continuous improvement of environment performance. Audit compares performance vs. established standards and evaluates effectiveness of systems in accomplishing their intended purpose. Proper auditing provides a process that nourishes and reinforces correct systems, behaviour and work practices while identifying opportunities for improvement.

KE has in place a procedure to carry out periodic environmental sustainability management system audits to:

- a) Determine whether the environmental management system:
  - Conforms to planned arrangements for environmental management including the requirements of ISO 14001: 2015.
  - Has been properly implemented and maintained.
- b) Provide audit results and information for management review for environmental improvement.

The audit procedure covers audit criteria, scope, frequency and methods, as well as responsibilities and requirements for conducting audits and reporting results and retaining associated records.

KE conducts internal environmental audits at corporate level on an annual basis to ensure appropriate preventive actions are being taken as planned, and corrective actions being carried out timely.

Relevant procedure: KE – SP – 033 Environmental Excellence Award Audit Criteria & Procedure V3 2023

### **9.44 HSE Signs:**

#### **9.44.1 Purpose:**

The purpose of this section is to provide guidelines based on world recognized standards as well as best industry practices to ensure that all safety signs, sign boards, tags and other hazard communication methods at KE and its administered location are homogenized and according to world class standards.

The purpose of this standard is to:

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- Establish a uniform and consistent visual layout for safety tags and sign boards etc.
- Minimize the proliferation of designs for safety tags and sign boards etc.
- Establish a uniform system for safety tags and sign boards etc. that communicates safety information.

#### 9.44.2 Scope:

This section shall apply to all Safety Signs, sign boards, Tags and other hazard communication methods at all KE administered locations and infrastructures.

KE believes that all hazards should be clearly identified, and proper actions shall be taken to prevent any human interaction with these hazards.

#### 9.44.3 Types of Safety Signs:

##### a) Prohibition/ Danger Sign:

A sign prohibiting behavior likely to increase or cause danger (e.g. "no access for unauthorized persons"). Danger signs shall be used only where an immediate hazard exists. Danger signs shall have red as the predominating color for the upper panel; black outline on the borders; and a white lower panel for additional sign wording.



Intrinsic features:

- Round shape.
- Black pictogram on white background, red edging and diagonal line (the red part to take up at least 35% of the area of the sign).

##### b) Warning/ Caution Sign:

A sign giving warning of a hazard or danger. Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices. The standard color of the background shall be yellow, and the panel, black with yellow letters. Any letters used against the yellow background shall be black.



Intrinsic features:

- Triangular shape.
- Black pictogram on a yellow background with black edging (the yellow part to take up at least 50% of the area of the sign).

##### c) Notice & Mandatory Sign:

A sign prescribing specific behavior (e.g. eye protection must be worn). The notice sign must be square in shape with a blue background and message written in white.

Mandatory Sign Intrinsic features:

- Round shape



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- ii. White pictogram on a blue background (the blue part to take up at least 50% of the area of the sign).

**d) Emergency Escape Sign:**

A sign giving information on emergency exits, first aid, or rescue facilities. i.e. emergency exit/ escape route. Escape signs, when required, shall be lettered in legible red letters, not less than 6 inches high, on a white field and the principal stroke of the letters shall be at least three-fourths inch in width.



Intrinsic feature; rectangular or square shape.

**e) Safety Instruction Signs:**

Safety instruction signs, when used, shall be white with green upper panels with white letters to convey the principal message. Any additional wording on the sign shall be black letters on the white background (see accompanying figure).



**f) Directional Signs:**

Directional signs, other than automotive traffic signs specified in the paragraph below, shall be white with a black panel and a white directional symbol. Any additional wording on the sign shall be black letters on the white background.



**g) Traffic Signs:**

Construction areas shall be posted with legible traffic signs at points of hazard. All traffic control signs, or devices used for protection of construction workers shall conform to American National Standards Institute ANSI D6.1-1971, Manual on Uniform Traffic Control Devices for Streets and Highways.



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#### h) Fire Safety Sign:

Provides information on the identification or location of firefighting equipment or gives warning in case of fire.

Intrinsic features:

- i. Rectangular or square shape.
- ii. White pictogram on a red background (the red part to take up at least 50% of the area of the sign).



#### 1. How to select a right sign to match risk level?



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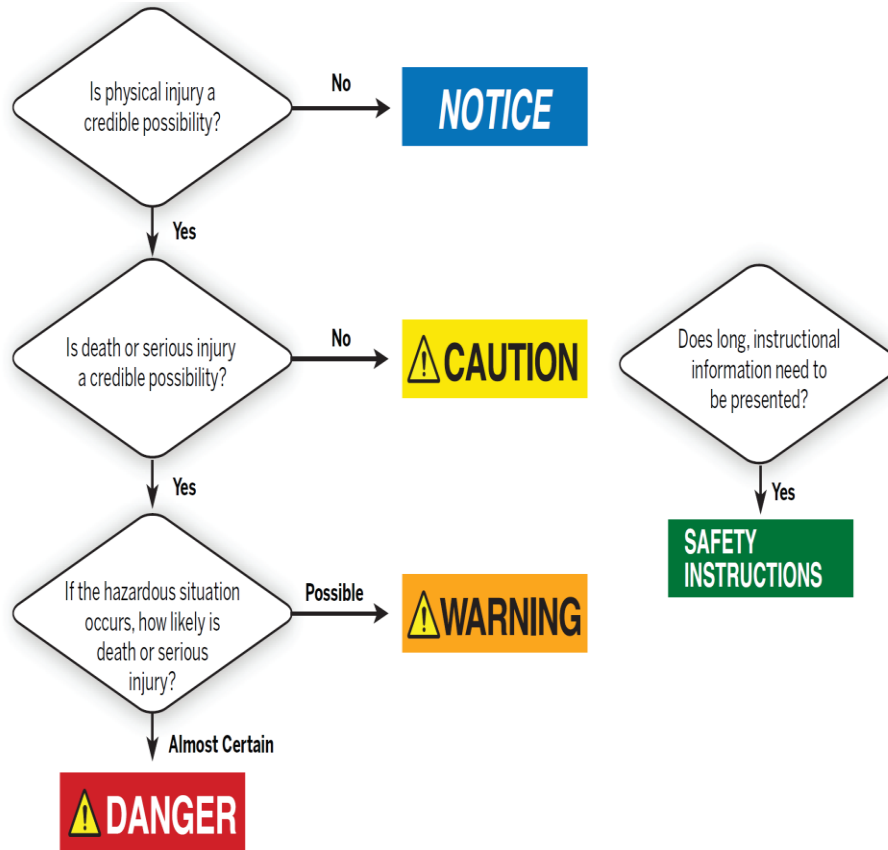
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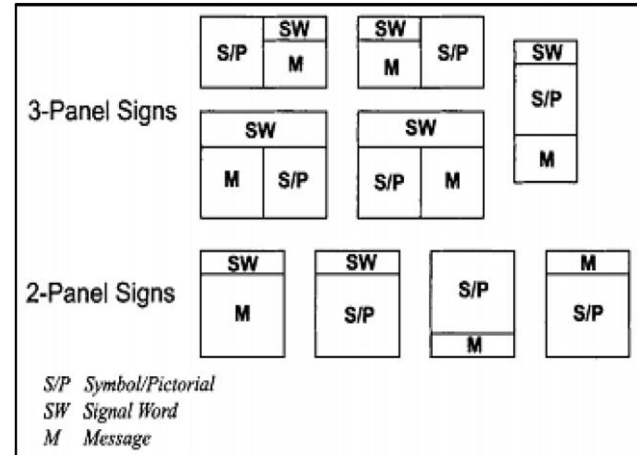
## Design Specifications

### a. Safety Signs Format:

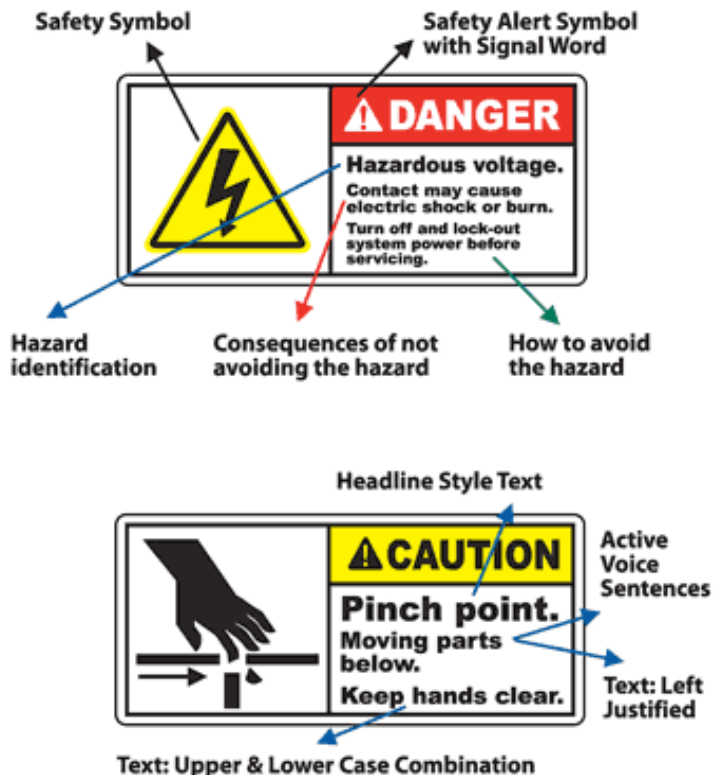
The safety alert symbol shall precede the signal word. The base of the safety alert symbol shall be on the same horizontal line as the base of the letters of the signal word. The height of the safety alert symbol shall be equal to or exceed the signal word in letter height.


For safety tags, signal word panel shall be located near top of the tag, above message panel.

Following are the standard formats of safety signs / tags/ boards.



### Sample# 01



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OSHA / ANSI old signs:



OSHA / ANSI new signs:



**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.43
- KE/CHSEQ/RP/059 - SAFETY SIGNS & BARRICADE GUIDELINES

## 9.45 Housekeeping:

### 9.45.1 Purpose:

This procedure defines a system for ensuring compliance with the housekeeping practices and promoting healthy competition through a reward and reprimand system.


### 9.45.2 Scope:

This procedure is applicable to all KE owned and rented locations excluding the operational locations, whose housekeeping performance is already being covered under SLA (Safety Leader Award) Criteria.

### 9.45.3 Procedure:

To implement and promote good housekeeping practices in the company at par with the best industrial practices, location owners are required to maintain their workplace, carry out housekeeping inspections in accordance with this guideline and maintain record (signed hardcopy). The location owner shall submit monthly housekeeping inspection checklists to Corporate HSEQ before the end of each month through KE online Portal.

- Location owners will constitute team(s) to ensure the housekeeping is being maintained.
- Corporate HSEQ shall conduct bi-annual housekeeping audits for monitoring implementation as per

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criteria attached as Annex “A”.

- c) Location owners shall close open points within 10 days upon receipt of an audit or inspection report. In case any point requires longer time, budgetary approval or involvement of other departments, an action plan with a timeline shall be sent to CHSEQ at the stipulated time mentioned above.
- d) Corp HSEQ shall conduct periodic analysis and present to leadership for continual improvement.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.44
- KE-CHSEQ-RP-025 - Fire Safety and housekeeping Award Procedure

#### **9.46 Health and Hygienic Facilities:**

##### **9.46.1 Purpose:**

This describes a proper Health & Hygiene Management System to specify precautions to be taken or equatorial that shall be on hand or utilized to minimize health and safety risks. Highlight significant health and safety concerns or activities and any health and safety documentation that is applicable.

##### **9.46.2 Scope:**

This applies to all KE personnel, contractor’s employees, and visitors.

##### **9.46.3 Main Functions:**

###### **a) Industrial Accident & Emergencies:**

To take care of the health of workers and get them treated in case of accident, investigate to find out root causes of the accident and suggest preventive measures to avoid recurrence. Industrial Hygiene Unit (IHU) deals with all sorts of Industrial Accidents and Emergencies/ occurring during assigned work. The doctors of I. H. Unit remain on call / stand by during & after office hours, round the clock 7/24, for any Industrial accident to facilitate treatment and transportation, and reduce financial and skill loss to the Company.

**Note:** For details of the above section, refer to below document(s):

- Annex ‘A’ of KE-SP-013

###### **b) Installation & Replenishment First Aid Box:**

First aid boxes are installed throughout KE locations scattered over a vast area of outspread KE domain. The first aid boxes are meant to provide first aid to the employees who come across any sort of injury like, scratches, abrasions, cuts, Burns, fractures, or foreign body to the eyes. It is also helpful to control bleeding or revive an unconscious patient/injured person. This is in accordance with Sindh Factories rule 1975 section-94.

**Note:** For details of the above section, refer to below document(s):

- Annex of KE-HC-IHU-002

###### **c) Vaccination:**



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Vaccinations against notorious and deadly diseases, to employees are mandatory by law. Vaccination of all KE employees and their dependent family members are carried out against Hepatitis B, Tetanus, Typhoid, Dog bite, Chicken Pox etc. in accordance with EPI Program of Govt. of Pakistan and factories act.

**Industrial Health Unit's Vaccination Program comprises of:**

- Routine Vaccination at I. H. Unit on all working days.
- Setting of Vaccination Camps at various KE Colonies, generating stations & offices etc. according to a notified program.

**Note:** For details of the above section, refer to below document(s):

- Annex 'C' of KE-SP-013

**d) Hygiene Card Examination:**

The Medical Examination of Workers shall be done twice a year, is mandatory by law. Each worker shall be provided with a Hygiene Card in which entries are recorded twice a year i.e. Jan & July by Medical Officer after Medical Check-up to the effect that the worker is not suffering from any contagious / communicable or infectious disease. If a worker is found to be suffering from any such disease, he shall not be appointed to work till he is treated and declared free from such disease from the medical staff.

**Note:** For details of the above section, refer to below document(s):

- Annex 'D' of KE-SP-013

**e) Hygiene Inspection Visit of Premises / Canteens:**

Hygiene inspection of all KE premises, colonies & installations including canteens is the prime function performed by M.O / Sanitary Inspector of IHU. This is in accordance with factories act 1934, chapter III section 13 to 22 and 24.

A monthly program trial be prepared and dispatched by doctors with the coordination of Manager Admin to various KE offices. The discrepancies found and notified to concerned departments for early rectification with intimation to higher authorities.

**Note:** For details of the above section, refer to below document(s):

- Annex 'E' of KE-SP-013

**f) First Aid Training:**


Training of KE employees shall be done in batches, department/region wise to enable them to take safety precautions which can reduce the risk of major accident / major loss of human as well as KE properties. They are also trained to combat any injury/accident in a proper way before the victim gets proper medical attention.

**Note:** For details of the above section, refer to below document(s):

- Annex 'F' of KE-SP-013

**g) Audits / Reward / Reprimand:**

For SLA Award twice i.e. in May/ June & November/ December carried out by IHU team of Medical Department.

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#### **h) Issuance of Circulars:**

Industrial Health Unit issues circulars through administrator from time to time regarding health & safety like health advisory, weather advisory, working in heat (loo lagna), dengue fever, bird flu, burns etc.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 Clause 7.45
- KE-SP-013 - Occupational Health & Hygiene Management System/ Procedure

### **9.47 Fire Prevention:**

#### **9.47.1 Purpose:**

The purpose of this procedure is to provide guidance, awareness, define roles and responsibilities of departmental executives and senior management at all KE business operations and to ensure:

- Functions of Corporate HSEQ Fire Section are clearly outlined.
- Functions, roles, and responsibilities of All BUs with respect to fire protection and prevention.

#### **9.47.2 Scope:**

This procedure applies to all BUs/employees of K-Electric and contract employees.

#### **9.47.3 HSE Related Legal/Regulatory Requirements:**

- Building Code of Pakistan Fire Safety Provisions 2016
- Sindh Factories Act 2015
- NEPRA POWER Safety Code
- Civil Defence Act/Building by Laws
- NFPA (1, 10, 13, 14,24, 25, 72, 101, 850, 2001 and other applicable standards)

#### **9.47.4 Procedure:**

##### **a) Emergency Response Organization:**

KE has established an Emergency Response Organization for responding to accidents and emergencies at its KE House (Refer to procedure KE-ERP-002 or emergency response plan template Annexure "A"). Similarly, each BU shall formalize their Emergency Response Procedure to respond and to prevent the escalation of any unforeseen (Accident / incident). The Emergency Response Organization consists of the Emergency Controller, who in the case of KE House shall be DD- Administration assisted by Manager Administration. For all dept./ BU's, the duty of Emergency controller shall be assigned by BU's/ departments assisted by Safety Coordinator and fire wardens posted at each BUs / departments.

##### **b) Functions:**

The fire preventive and management system envisage a fire system which is both effective and practicable in operation. A decentralized system of fire prevention has been adopted, to timely and effectively prevent fire and its associated effects.



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Fire safety inspection conducted quarterly at G&T locations and monthly at other KE locations as per KE-SP-024 Fire Safety Inspection Procedure

- Annual Fire Safety audits of KE Distribution and Support locations are conducted to maintain good housekeeping and fire safety practices at the locations as per KE-SP-025 Fire Safety and Housekeeping Award procedure.
- The Process Safety Leaders Award Audit conducted annually to check the safety, Fire Safety, equipment healthiness and housekeeping at G&T locations as per G&T Process Safety Leaders Award Criteria.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code Clause 7.46
- KE/CHSEQ/RP/025 - Fire Safety and Housekeeping Award Procedure
- KE-SP-21 - Fire Prevention and Management System Procedure

### 9.48 First Aid Facilities:

#### 9.48.1 Purpose:

The purpose of this section is to describe the purpose and function of First Aid Box and First Aid facilities.

#### 9.48.2 Scope:

This procedure applies to all KE and its administered locations.

#### 9.48.3 Main Functions:

- a) KE shall provide a qualified paramedic nurse and an ambulance at site of construction, turnaround, rehabilitation, decommissioning, and demolition to meet the emergency situation whenever work force exceeds fifty (50) persons.
- b) First aid supplies shall be available near all work areas.
- c) The company shall arrange First Aid training for selected employees/ contractors and arrange inspection and refilling of in-service First Aid Kit on a monthly basis during the first week of each month.
- d) First Aid training should cover following aspects: -
  - Cardiopulmonary resuscitation (CPR)
  - Nose bleeding
  - Physical/ Electric shock. - Sun/ Heat stroke
  - Fainting/ Dizziness/ Food poisoning
  - Fractures (broken bones). - Transportation/ shifting of the victims (to health facilities and nearby hospitals)
  - Wounds. - Splinters or foreign substances in the body
  - Animal/ Snake bites
  - Burns (thermal, electrical & chemical)
  - Eye injuries
  - Sprains/ strains
  - Bruises/ Allergies

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- Frostbite
- Heimlich maneuver

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.47)
- KE-HC-IHU-002 – First Aid Boxes

## **9.49 Emergency Management System:**

### **9.49.1 Purpose:**

This procedure is intended to ensure that in case of incident at KE installations such as major fire, explosion, arc flash, release of flammable and hydrocarbons (Hydrogen/ HFO/ HSD release), bomb blast/ threat or sabotage, flood, earthquake, Collapse of Building/Installation, Tsunami, medical emergency, heat wave, blackout, civil unrest political instability, IT service disruption and pandemic, all necessary actions are taken for protection of Company Personnel, Contractors, visitors, the environment, communities which can be affected, and the assets.

### **9.49.2 Scope:**

This procedure is applicable across KE and its administered locations.

### **9.49.3 Emergency preparedness & contingency planning:**

This section contains contents and requirements Site Emergency Response Plan across KE and its administered locations.

- Emergency handling techniques
- Emergency response manual/plan
- Emergency shutdown procedures
- Emergency repair (temporary repair) procedures
- Rescue operations guidelines
- Stewardship of emergency preparedness program

**Note:** For details of the above section, refer to below document(s):

- KE/CHSEQ/PSM/22 – Clause 6

### **9.49.4 Mutual aid/ liaison with civil authorities**

The chances of survival and recovery from a disaster or major accident are greater when companies pool equipment and personnel with their neighbors. Therefore, the emergency plans should include a provision for exchanging aid with other organizations and Governmental agencies.

- A written arrangement with adjoining plants/ facilities and locations should be established to help each other in case of emergency. The arrangement should address sharing of relevant resources and equipment available with each other.
- Moreover, necessary coordination with Civil Authorities should be established and maintained through government affairs and public relations to protect population outside plant/ location/ facility premises, blocking incoming rail/ road traffic, alerting local population of the hazard, mobilizing outside medical





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aid, and maintaining law and order.

### **9.49.5 Training on emergency preparedness**

Regular training and practice under simulated conditions is imperative to enable the organization to respond effectively to emergencies. The following program is to be followed for training of the emergency squad and employees. Civil Authorities should also be involved in the simulated exercises at least once a year.

### **9.49.6 Safety & firefighting equipment**

For details on upkeep, routine inspections and maintenance of Safety and Firefighting Equipment, refer to KE/CHSEQ/PSM/15 – Procedures & Performance Standards Procedure.

### **9.49.7 Overview**

- Reference to KE-SP-021 Section 5.1 Emergency Response Organization, KE has established and maintains plans and procedures to identify the potential for, and response to, incidents and emergency situations, and for preventing and mitigating the likely illness and injury that may be associated with them.
- “Each BU shall formalize their Emergency Response Procedure to respond and to prevent the escalation of any unforeseen (Accident / incident)”
- To facilitate BUs for development of Emergency Response Plans for their building/location, Corporate HSEQ has provided a template in (KE-ERP-001) and Guidelines for the use of template are attached in Annexure “A” of KE-SP-021.
- The guideline template is prepared for Emergency Response Plan preparation of General Office Buildings and is not intended for Grid Stations and Generation Plants, who have their own location specific Emergency Response Plans.
- Corp HSEQ Team shall review its emergency preparedness and response plans and procedures, after the occurrence of incidents or emergency situations, or addition of a new process / activity.
- Periodically test such procedures on regular basis through evacuation drills as per prescribed frequency in the procedure.

### **9.49.8 Emergency Response Organization:**

The Emergency Response Organization consists of the Emergency Controller, assisted by safety wardens posted at each floor/ major units of the building occupied by KE.


### **9.49.9 Emergency Response Team (ERT):**

- Location owner will be overall in charge and assume responsibility as “Emergency Controller”. The manager admin will assist him and also assume responsibility in the absence of the emergency controller.
- The ERT will respond to emergencies such as fires or any other potential accidents / emergency conditions. The Overall responsibility will lie with the Emergency Controller assisted by his deputy and Safety Wardens.
- Emergency Controller shall nominate “Safety Wardens” as team members, keeping in view that all Floors/Areas are adequately covered. The team shall respond in accordance with the emergency

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response instructions.

- d) The list of Safety Wardens/Emergency Response Team shall be documented. The updated list shall be maintained by Emergency Controller.

#### **9.49.10 Emergency Rescue:**

This section is intended to give only general knowledge of safe and effective methods of applying first aid for certain types of injuries. Keep the injured person lying down in a comfortable position, at a head level with the body, until you know that the injury is serious.

Look for discharge of blood, stoppage of breathing, signs of poisoning, burns, fractures and dislocations. Remember that serious bleeding, stopping breathing, and internal poisoning must be treated immediately in that order before anything else is done.

- a) Send someone to call a physician or an ambulance.
- b) Never give water or liquid to an unconscious person.
- c) Keep onlookers away from the injured person.
- d) Do not let the victim see the injury.
- e) Make the victim comfortable and cheerful, if possible.
- f) Keep the victim warm but maintain normal body temperature.
- g) Keep calm and do not hurry to move the injured person unless necessary.
  - Hemorrhage (Bleeding)
  - Internal Hemorrhage
  - Nose Bleeding
  - Sun Stroke, Heat Stroke & Heat Exhaustion
  - Fainting
  - Fractures (Broken Bone)
  - Transportation of Victims
  - Wounds
  - Splinters or Foreign Substances in Body
  - Animal Bites
  - Snake Bite
  - Shock
  - Breathing and heartbeat
  - Identifying the snake
  - Cleaning the bitten area
  - Cold therapy
  - Medicine to relieve pain



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- Snakebite kits
- Electrical Burns
- Eye Injuries
- Sprain & Strains
- Bruises
- Frostbite
- Heimlich Maneuver
- Method of Pole Top Rescue

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code 2024 (Clause 7.48)
- KE/CHSEQ/PSM/22 - Emergency Preparedness & Contingency Planning
- KE-ERP-002 - Emergency Response Plan KE House
- KE SP-013 - Occupational Health & Hygiene Management System Procedure

### **9.50 Incident Management:**

#### **9.50.1 Purpose:**

The objective of this procedure is to promptly and precisely document and report any Health, Safety, and Environmental (HSE) incident. Additionally, it serves as a vital tool for regulatory compliance, fostering a culture of transparency and continuous improvement within the KE.

#### **9.50.2 Scope:**

This procedure is applicable to all processes and facilities of KE, as well as activities conducted by KE or its contractors, encompassing KE employees (MS & NMS), OSP, PQC/contractor staff, EPCC Contractor, Short Term Contractors, visitors, and the public.

#### **9.50.3 Classification of injury and incident**


Incidents have been classified into four major categories:

- a) Work Related
- b) Non-Work Related
- c) Off the job Incidents
- d) Public Incidents

#### **9.50.4 Work Related Incident:**

Any incident suffered by a person, or KE property or process which arises out of and in the course of his/ her employment, on or off the employee's premises i.e., resulting from work activity or environment of employment. Work Related Incidents are categorized as follows:

- a) Personnel Safety Incident
- b) Process Safety Incident
- c) Vehicle Incident

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- d) Environmental Incident
- e) Asset Damage (Other than process)
- f) Fire Safety Incident (Other than process)
- g) Security/ Workplace Violence Incident

#### 9.50.5 Incident Reporting Timeline

Description of Reporting	Responsibility	Submitted To	Timeline (Post Incident)	Communication Medium
<b>(Work &amp; Non-Work Related) and Public Incident</b>				
<b>Initial information of all incidents</b> <ul style="list-style-type: none"> <li>On the Job – Personnel, Process, Environmental, Vehicle, Property/ Equipment Damage (other than process), Fire Safety Incident (other than process), Security Incident</li> <li>Public Incident</li> </ul>	Workforce, Site Supervisor, Gang Incharge	Line Management, Line HSE Coordinator	01 hr	Phone, email, WhatsApp
<b>Initial information of all incidents</b> <ul style="list-style-type: none"> <li>On the Job – Personnel, Process, Environmental, Vehicle, Property/ Equipment Damage (other than process), Fire Safety Incident (other than process), Security Incident</li> <li>Public Incident</li> </ul>	Line Management, Line HSE Coordinator	BU HSE, CHSEQ and IHU	02 hr	Email
<b>Incident Flash Report</b>				

#### 9.50.6 Public Accident

Any event(s) which resulted in Fatal or Non-Fatal accident of public including animal due to Utility Network OR Non-Utility Network.

- a) **Utility Network** – Electrical / Non-Electrical Incident – Incident occurred due to electrocution, electric flash, electric shock, or any other reason related to Utility Network
  - Utility Reason – Incident occurred involving Utility network. e.g., leakage current from LT/ HT network causing electrocution of general public.
  - Non-Utility Reason – Incident occurred involving Utility network but not due to Utility reason e.g., Electrocution of public during theft attempt, compromised safe distance etc.
- b) **Non-Utility Network** – Electrical Incident – Incidents occurred due to electrocution, electric flash, electric shock but not related to Utility Network e.g., incident occurring in home, shops, factories etc.

#### 9.50.7 Incident Investigation Process

A good incident investigation has the following steps:

- a) Formulate Investigation Team
- b) Gather people for investigation
- c) Collect all the facts.
- d) Determine the causes (Use Why Tree Analysis (WTA) to identify key factors).
- e) Recommendations
- f) Incident Investigation Report
- g) Follow up on the implementation of all recommendations.

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**Note:** For details of the above section, refer to the document (s):

- NEPRA Power Safety Code (Clause: 7.49)
- KE/CHSEQ/PSM/11(1) - Incident Reporting Procedure
- KE/CHSEQ/PSM/11(2) - Incident Investigation Procedure

### **9.51 HSE Performance Reporting:**

#### **9.51.1 Purpose:**

The purpose of this section is to document the process for Monthly HSE Performance reporting incidents that occur in K-Electric Business Units, Departments, either On-the job or Off-the-job to NEPRA.

#### **9.51.2 Scope:**

This section shall be applicable to KE and its administered locations.

#### **9.51.3 Summary:**

- KE emphasizes accuracy and transparency when reporting monthly Occupational Health, Safety & Environment (HSE) performance report.
- Use Annexure-3 for Monthly Performance Reporting, which shall include all accidents as reported to the company, or known through media, occurring at any of the company sites, within its service territory, under its jurisdiction, or electrical accidents occurring inside consumer premises.
- Include investigation, inquiry reports, or preliminary occurrence reports of fatal accidents, in the monthly HSE performance report and send to NEPRA at the email address 'hse@nepra.org.pk' by the 10th of each month for the previous month's HSE performance.
- The original year-end report shall be retained and preserved by the company for three (03) years

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.50)

### **9.52 HSE Audits:**


#### **9.52.1 Purpose:**

The purpose of this document is to discuss the importance of effective auditing in HSE management and provide guidelines for conducting and evaluating HSE audits.

K-Electric believes that audits are important tools in establishment, measurement, maintenance, and continuous improvement of process safety performance. Audits compare performance vs. established standards and evaluate effectiveness of systems in accomplishing their intended purpose. Proper auditing provides a process that nourishes and reinforces correct systems, behavior and work practices while identifying opportunities for improvement.

#### **9.52.2 Scope:**

This section describes the requirement for complying with the Process Safety Management element on Audits & Observations.

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### 9.52.3 Summary:

Auditing is an important aspect of the safety management system, if used properly and tactfully, audits bring various good results, e.g.

- a) Maintain standards by ensuring that everyone follows the rules and procedures
- b) Highlights areas where rules and procedures are insufficient
- c) Measures the effect of safety training and reveals weaknesses
- d) Motivate supervisors/ workers by giving results of their safety efforts

A documented audit program should be in place which also provides guidelines for conducting and evaluating the results of safety audits by line managers and safety personnel. Necessary training should be provided for all relevant personnel on auditing techniques.

Audit program/ results should be stewarded by line managers/ respective BU HSE. The audits should be used to determine necessary changes in management of safety. This procedure covers the requirements, guidelines on how to conduct audits, compile report and steward recommendations for following types of audits: 1st Party PSM Audits (Internal Audit); 2nd Party PSM Audits; 3rd Party Audit (External PSM Audits); Hazardous Substances Survey; Safety Critical System Audit.

The intent is to comply with the applicable Legal and Regulatory requirements, OSHA regulation 29 CFR 1910.269 - operation and maintenance of electric power generation, control, transformation, transmission, and distribution lines and equipment, 29 CFR 1910.119 - preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals and EPA regulation 40 CFR Part 68-Protection of Environment, Chemical Accident Prevention Provisions.


### 9.52.4 Audit:

An audit is a methodical examination of a facility's procedures and practices to verify whether they comply with Corporate and legal requirements, internal policies, and good practices, whether they are being followed and whether they are effective.

### 9.52.5 Audit Types - 1st Party Audit:

An audit of a worksite carried out by team comprising of personnel working at that worksite, as per worksite's established HSE program. It is an Area/Site Audit carried out by a person or a group in which no independent auditor (from outside the company) is employed. There are several types, or levels, of 1st party audits typically conducted at a worksite, some types are listed below.

- a) Behavior Based Audit
- b) Layered or Tiered Audit
- c) Area Audit
- d) Cross Functional Audit
- e) Focused Audits

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#### 9.52.6 Audit Types – 2nd Party Audit:

An audit of a worksite carried out by independent auditors (who may belong to KE group but are external to the respective Business Unit), as per worksite's established HSE program. The independent auditors are those who have the appropriate knowledge, skills, and experience in conducting the HSE/ PSM audits. The strength of 2nd party audits is that auditors are external to the worksite(s) and/ or BU and therefore carry out the audit from an independent viewpoint, which can help in identifying area of improvement that may be overlooked during 1<sup>st</sup> Party Audits. The audits of Business Units carried out by CHSEQ shall be regarded as 2<sup>nd</sup> Party Audit.

#### 9.52.7 Audit Types – 3rd Party Audit:

An audit of the worksite PSM program, conducted by personnel who are external to K-Electric, e.g. DuPont, Government agencies.

**Note:** For details of the above section, refer to below document(s):

- NEPRA Power Safety Code (Clause: 7.51)
- KE/CHSEQ/PSM/10 - Audits and Observations

### 9.53 Annual HSE Performance Evaluation:

#### 9.53.1 Purpose:

The purpose of this section is to document the process for the Annual HSE Performance Evaluation of Generation, Transmission and Distribution to be carried out by NEPRA

#### 9.53.2 Scope:

This section shall be applicable to Generation, Transmission and Distribution (NEPRA Licensee)

#### 9.53.3 Summary:

- The purpose of the Occupational Health, Safety, and Environment (HSE) performance evaluation is to assess KE's performance with the aim to promote continual improvement.
- KE shall submit all supporting documents, record and evidences of last fiscal year for the HSE Performance Evaluation at NEPRA HSE Data Exchange Portal in HSE Performance Evaluation Form or as directed by NEPRA by July 31st of each year
- KE shall compile the title page, table of contents, and approval page into a single PDF file for each section of each category. The PDF file title should include the respective category number and section number. Do not include blank forms in the PDF file.
- Additional documents, records and evidences shall be submitted to NEPRA within given time, as and when directed.
- Based on the NEPRA evaluation, companies should be categorized as outstanding, good, fair, poor, or unsatisfactory, and subsequently, a performance report should be issued if directed by NEPRA Authority. The report is intended for general information of HSE performance for the purpose of further improvement.
- Companies who were responsible for work-related or public fatal accidents during the evaluation

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year, they shall receive a zero point in category # 19. For all other categories, points shall be given to them based on the submitted data to measure their continual improvement in other categories.

- g) The higher ranking in the report does not guarantee that a company's actual performance in the field is the same as stipulated in the report. In actual, it could be either more effective or worse. Despite the higher ranking, this does not mean that the company is free from individual accidents or lapses
- h) NEPRA will assign category points from 1 to 5 using the following scale to rate the HSE performance of company

Points	1	2	3	4	5
Points x Assessment Categories	1 x 20	2 x 20	3 x 20	4 x 20	5 x 20
Percentage	20	40	60	80	100
Category	Unsatisfactory 1 - 20	Poor 21 - 40	Fair 41 - 60	Good 61 - 80	Outstanding 81 - 100



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## 10.0 ANNEXURES:

### HSE Performance Evaluation Form

Company Name		Company Category (Generation, Transmission or Distribution)	
NEPRA License No.		Corporate Address	
Evaluation Year		Submitted Date	

Note: The company shall compile all subcategories into a single PDF file. This PDF file should include a table of contents and page numbers for each subcategory. The title of the PDF file should contain the respective category serial number for immediate reference.

Sr. No.	Category	Points																												
1.	<p><b><u>HSE Management System</u></b></p> <p>Approved HSE Management System/ Manual is available in compliance to Power Safety Code?</p> <table><tr><th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr><tr><td>1. HSE Management System/ Manual (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>2. Legal Compliance Register (Attach approved register)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>3. Third Party HSE Audit Report (Attach report)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>4. Management System Certification (Attach certificates)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>5. Insurance Risk Engineers Report for plants and facilities. (Attach report)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>6. HSE initiatives and improvements made by the company during the evaluation year.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Subcategory	Attached	Not Available	Not Applicable	1. HSE Management System/ Manual (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Legal Compliance Register (Attach approved register)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Third Party HSE Audit Report (Attach report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Management System Certification (Attach certificates)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Insurance Risk Engineers Report for plants and facilities. (Attach report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. HSE initiatives and improvements made by the company during the evaluation year.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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6. HSE initiatives and improvements made by the company during the evaluation year.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																											
2.	<p><b><u>HSE Management Team</u></b></p> <p>Is the company providing a sufficient number of qualified HSE staff at the site for supervision, who can effectively oversee their employees and contractors?</p> <table><tr><th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr><tr><td>1. HSE team details/organogram is maintained. (Attach approved organogram)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>2. HSE team training certifications or training attendance record. (Attach certificates or record)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Subcategory	Attached	Not Available	Not Applicable	1. HSE team details/organogram is maintained. (Attach approved organogram)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. HSE team training certifications or training attendance record. (Attach certificates or record)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
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	3. Independent and functional HSE Directorate/Department. (Attach order) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																									
	4. HSE Team responsibilities and duties clearly defined. (Attach approved responsibilities and duties document) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																									
	5. Total number of company direct employees. (Attach Admin/HR Letter) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																									
3.	<b><u>Hazards/ Aspect Identification and Risk/ Impact Assessments</u></b> The approved Hazards/Aspect Identification and Risk/Impact Assessment is available, and the recommended measures have been implemented. <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Risk/ Impact Assessment Procedure/ SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Risk/Impact Assessment Worksheet.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. List of Risk/ Impact Assessment recommendation(s). (Attach List)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Risk/ Impact Assessment recommendations implementation action plan/ evidences/ photographs. (Attach approved action plan and evidences)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>	Subcategory	Attached	Not Available	Not Applicable	1. Risk/ Impact Assessment Procedure/ SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Risk/Impact Assessment Worksheet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. List of Risk/ Impact Assessment recommendation(s). (Attach List)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Risk/ Impact Assessment recommendations implementation action plan/ evidences/ photographs. (Attach approved action plan and evidences)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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4.	<b><u>HSE Meeting</u></b> The approved periodic plan for HSE Meetings is available, and these meetings are conducted at the top management level. Additionally, detailed minutes of each meeting are documented. <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. HSE Meeting procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. HSE Meeting approved periodic plan. (Attach plan)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Top management attended.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Minutes of meeting available. (Attach MOM)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>5. Recommendations implementation action plan/evidences/photographs.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>	Subcategory	Attached	Not Available	Not Applicable	1. HSE Meeting procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. HSE Meeting approved periodic plan. (Attach plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Top management attended.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Minutes of meeting available. (Attach MOM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Recommendations implementation action plan/evidences/photographs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	(Attach approved action plan and evidences)																												
5.	<p><b><u>Job Specific Training</u></b></p> <p>The approved training need assessment and periodic plan for Job Skills Competency Training are available. Does the company provide job skills competency training for various roles such as Electrical Technician, Assistant Lineman, Lineman, Line Superintendent, Heavy Equipment Operators, Riggers, Scaffold Supervisors, etc.?</p> <table border="1"> <thead> <tr> <th>Subcategory</th> <th>Attached</th> <th>Not Available</th> <th>Not Applicable</th> </tr> </thead> <tbody> <tr> <td>1. Training procedure/SOP. (Attach title page, table of contents, and approval page only)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>2. Job specific training need assessment. (Attach approved TNA)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>3. Job specific training approved periodic plan. (Attach approved plan)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>4. Sample of in-house training attendance record or third party training certifications. (Attach record or certificates)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Training procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Job specific training need assessment. (Attach approved TNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Job specific training approved periodic plan. (Attach approved plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Sample of in-house training attendance record or third party training certifications. (Attach record or certificates)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
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6.	<p><b><u>HSE Awareness Training</u></b></p> <p>The approved training need assessment and periodic plan are available for HSE awareness trainings, covering topics such as Work Permit Issuer &amp; Receiver, Electrical Safety, Isolation, PPE/T&amp;P, Fire Watch, Standby man, Fire Prevention, First Aid, Working at Height, Confined Space, Emergency and Rescue Operation, etc. Have all essential employees/contractors attended the necessary HSE awareness trainings, including new employees/contractors, before conducting their activities?</p> <table border="1"> <thead> <tr> <th>Subcategory</th> <th>Attached</th> <th>Not Available</th> <th>Not Applicable</th> </tr> </thead> <tbody> <tr> <td>1. Training procedure/SOP. (Attach title page, table of contents, and approval page only)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>2. HSE training need assessment. (Attach approved TNA)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>3. HSE training approved periodic plan. (Attach approved plan)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>4. Sample of in-house training attendance record or third party training certifications. (Attach record or certificates)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5. Annual public awareness campaign periodic plan and photographs.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Training procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. HSE training need assessment. (Attach approved TNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. HSE training approved periodic plan. (Attach approved plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Sample of in-house training attendance record or third party training certifications. (Attach record or certificates)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Annual public awareness campaign periodic plan and photographs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	(Attach approved plan and evidences)																																
7.	<p><b><u>Management HSE Walk-through/ Site Tours</u></b></p> <p>The approved periodic plan for Top Management HSE Walk-through/Site Tours is available and executed as planned. Does the top management actively participate in these tours, and are corrective actions taken when necessary?</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. HSE Walk-through/Site Tours approved periodic plan. (Attach approval plan)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Top Management participation.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. List of observation/findings. (Attach List)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Evidences or photographs of open/close status of observation/findings. (Attach evidences)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. HSE Walk-through/Site Tours approved periodic plan. (Attach approval plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Top Management participation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. List of observation/findings. (Attach List)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Evidences or photographs of open/close status of observation/findings. (Attach evidences)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
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8.	<p><b><u>Asset Integrity Management</u></b></p> <p>The approved Preventive Maintenance periodic plan is readily available and actively implemented. The approved list of safety critical protection devices, instrumentation, interlocks, protection relays, breakers, controls, safety relief valves, F&amp;G detection system, software and components are available and their in-service testing/inspection is carried out according to the periodic plan, either by the government authority or inspection agencies registered with Pakistan Standards and Quality Control Authority.</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Asset Integrity Management procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Preventive maintenance/ schedule outage approved periodic plan. (Attach plan)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Preventive maintenance execution record. (Attach record)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Safety critical protection devices approved list. (Attach approved list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>5. Sample of safety critical protection devices testing (in-house or third party). (Attach evidence, certificate or report)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>6. In-house or third party integrity inspection/certificate of stability of</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Asset Integrity Management procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Preventive maintenance/ schedule outage approved periodic plan. (Attach plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Preventive maintenance execution record. (Attach record)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Safety critical protection devices approved list. (Attach approved list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Sample of safety critical protection devices testing (in-house or third party). (Attach evidence, certificate or report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. In-house or third party integrity inspection/certificate of stability of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	<p>civil and steel structure of plant platforms, workshop, warehouses, normal office buildings, porta cabins and blast resistant buildings at intervals of 3 to 5 years. (Attach evidence, certificate or report)</p>																								
	7. In-service Boiler Inspection Certificate. (Attach certificate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																					
	8. In-house or third party inspection of in-service electrical installation of plant, workshop, warehouses, normal office buildings and blast resistant buildings at intervals of 3 to 5 years. (Attach evidence, certificate or report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																					
9.	<p><b><u>Management of Change (MOC)</u></b></p> <p>The Management of Change (MOC) program is available and actively implemented. MOC Committee/Team is present to review and approve any permanent or temporary changes, modifications, additions, or deletions that are considered "Not In Kind".</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Management of Change (MOC) procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. MOC Committee/team notification. (Attach evidence or order)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. List of MOCs. (Attach list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Sample of complete MOC. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>				Subcategory	Attached	Not Available	Not Applicable	1. Management of Change (MOC) procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. MOC Committee/team notification. (Attach evidence or order)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. List of MOCs. (Attach list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Sample of complete MOC. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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10.	<p><b><u>Personal Protective Equipment (PPE)</u></b></p> <p>Personal Protective Equipment (PPE) approved list is available with material description. Adequate amount of PPE inventory is maintained by company at each site?</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. PPE procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. PPE need assessment sheet/report. (Attach approved sheet/report)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Stock and non-stock PPE approved list is available with material</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>				Subcategory	Attached	Not Available	Not Applicable	1. PPE procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. PPE need assessment sheet/report. (Attach approved sheet/report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Stock and non-stock PPE approved list is available with material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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	description. (Attach approved list)																												
	4. Stock PPE inventory is maintained. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
	5. Certificates/ photographs of in-service special PPE inspections conducted either in-house or by a third party. (Attach evidence, certificate or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
11.	<b><u>Electrical and Mechanical Energy Isolation</u></b> The electrical and mechanical isolation system is available and fully operational.																												
	<table border="1"><thead><tr><th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr></thead><tbody><tr><td>1. Electrical and Mechanical Energy Isolation procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>2. Electrical Isolation lockout sample evidences/ photographs. (Attach photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>3. Mechanical Isolation chain off sample evidences/ photographs. (Attach photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>4. Sample evidences/ photographs of mechanical isolation by valve closure with use of rated blinds at Inlet and Outlet Or removal of pipe spool with the use of blind flange Or double block &amp; bleed with use of blind Or removal of mechanical couplings. (Attach photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>5. Blind list or the blind register or marked P&amp;ID reflecting numbered locations of blinds. (Attach evidence or list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></tbody></table>	Subcategory	Attached	Not Available	Not Applicable	1. Electrical and Mechanical Energy Isolation procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Electrical Isolation lockout sample evidences/ photographs. (Attach photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Mechanical Isolation chain off sample evidences/ photographs. (Attach photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Sample evidences/ photographs of mechanical isolation by valve closure with use of rated blinds at Inlet and Outlet Or removal of pipe spool with the use of blind flange Or double block & bleed with use of blind Or removal of mechanical couplings. (Attach photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Blind list or the blind register or marked P&ID reflecting numbered locations of blinds. (Attach evidence or list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
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12.	<b><u>Permit to Work</u></b> The Permit to Work system is available and has been effectively implemented. Additionally, the list of approved authorized Permit to Work Issuers & Receivers is readily available.																												
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	(Attach approved list)																																
	3. Training or refresher training for authorized Permit to Work Issuer & Receiver. (Attach evidence, attendance sheet or record)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													
	4. Sample of executed Permit to Work. (Attach executed Permit to Work sample)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													
13.	<b><u>Heavy Equipment, Machinery, Power Driven Tools and other Handheld Portable Equipment's</u></b> <p>The approved list of Tools &amp; Plants (T&amp;P), heavy equipment, machinery, power-driven tools, and other handheld portable equipment is available, and regular in-service inspections are conducted with inspection tags installed. Moreover, the list of Heavy Equipment Operators and Riggers is readily available, and all personnel in these roles are trained and certified.</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Relevant procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Tools &amp; Plants (T&amp;P) approved list. (Attach approved list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Heavy equipment approved list. (Attach approved list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Samples of in-house or third party inspection certification or tags of in-service heavy equipment. (Attach evidence or certificate)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>5. Heavy Equipment Operator and Rigger list. (Attach list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>6. Heavy Equipment Operator and Rigger training, License and certification. (Attach training record, license and certificate)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Relevant procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Tools & Plants (T&P) approved list. (Attach approved list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Heavy equipment approved list. (Attach approved list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Samples of in-house or third party inspection certification or tags of in-service heavy equipment. (Attach evidence or certificate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Heavy Equipment Operator and Rigger list. (Attach list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Heavy Equipment Operator and Rigger training, License and certification. (Attach training record, license and certificate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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14.	<b><u>Internal HSE Audit</u></b> <p>The Internal HSE Audit system is available, and audits are planned and conducted during the evaluation year.</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Internal HSE Audit procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Internal HSE Audit periodic plan.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Sample of internal HSE audit report/</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Internal HSE Audit procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Internal HSE Audit periodic plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Sample of internal HSE audit report/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
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	outcomes/ email. (Attach report/ outcomes/ email report)																																				
	4. Audit non-compliance open/close status. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																	
15.	<p><b><u>Health &amp; Hygienic Facilities</u></b></p> <p>Health &amp; Hygienic facilities are provided and regularly maintained. Occupational health assessments are conducted for selected employees/contractors who are typically engaged in critical tasks, based on their job roles, to ensure that individuals are medically, physically, and mentally fit for their assigned responsibilities.</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Health &amp; Hygienic procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Occupational health assessment record. (Attach evidence, record or certificate)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Evidences/ photographs of hygienic facilities such as potable drinking water at workplace, hygienic canteen, mess or cafeteria. (Attach evidence or photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. In-house or third party assessment conducted with correction evidences for workplace ergonomics, illumination, ventilation, temperature, heat stress, noise, dust and fume. (Attach evidences, results or reports)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>5. Annual Inspection Report by Labour Welfare Office. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>6. Employees' Social Security Registration Certificate for private sector organizations. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>7. Employees' Old-Age Benefits Institution (EOBI) Registration Certificate for private sector organizations. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Health & Hygienic procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Occupational health assessment record. (Attach evidence, record or certificate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Evidences/ photographs of hygienic facilities such as potable drinking water at workplace, hygienic canteen, mess or cafeteria. (Attach evidence or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. In-house or third party assessment conducted with correction evidences for workplace ergonomics, illumination, ventilation, temperature, heat stress, noise, dust and fume. (Attach evidences, results or reports)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Annual Inspection Report by Labour Welfare Office. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Employees' Social Security Registration Certificate for private sector organizations. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Employees' Old-Age Benefits Institution (EOBI) Registration Certificate for private sector organizations. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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16.	<p><b><u>Environmental Management System</u></b></p> <p>The Environmental Management System is available and being implemented as per the established guidelines.</p>																																				





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	12. Industrial waste recycling evidence. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																														
	13. Industrial waste not intended for recycling or reuse is treated and/or disposed of via approved contractors or facilities within one hundred and eighty (180) days of the waste being generated. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																														
17.	<b><u>Fire Prevention &amp; First Aid Facilities</u></b> Fire prevention equipment's are present and regularly maintained at each site. First aid facilities/boxes are also available and well-maintained at each site. In-service inspection and refilling of first aid supplies are carried out on a monthly basis during the first week of each month. <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Fire Prevention &amp; First Aid procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. In-house or third party inspection records of in-service fire protection equipment. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Evidences of First aid facilities/boxes. (Attach evidence or photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Evidences of inspection and refilling of in-service first aid facilities/boxes. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>5. Evidences of in-service ambulance inspection. (Attach evidence or photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>6. List of dedicated First Aid providers at site. (Attach approved list)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Fire Prevention & First Aid procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. In-house or third party inspection records of in-service fire protection equipment. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Evidences of First aid facilities/boxes. (Attach evidence or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Evidences of inspection and refilling of in-service first aid facilities/boxes. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Evidences of in-service ambulance inspection. (Attach evidence or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. List of dedicated First Aid providers at site. (Attach approved list)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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18.	<b><u>Emergency Management</u></b> The Emergency Management system is available and actively implemented. Both announced and unannounced emergency drills are planned and regularly conducted. <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Emergency Management procedure /SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Announced and unannounced emergency drills periodic plan.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Emergency Management procedure /SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Announced and unannounced emergency drills periodic plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
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# CORPORATE HSEQ MANUAL

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	(Attach approved plan)																								
	3. Announced and unannounced emergency drills sample evidences/ photographs. (Attach evidence or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																					
	4. Drill recommendations action plan/ implementation evidences/ photographs. (Attach evidence or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																					
19.	<b><u>Incident Reporting and Investigation</u></b> <p>The Incident Reporting &amp; Investigation system is available and functioning effectively. Does the company adhere to NEPRA's emergency reporting instructions for incidents? Furthermore, has the company conducted thorough investigations for all incidents, including near-misses?</p> <p>The total work-related fatal accidents during the evaluation year:</p> <p>The total public fatal accidents during the evaluation year for which the company was responsible:</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. Incident Reporting &amp; Investigation procedure/SOP. (Attach title page, table of contents, and approval page only)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2. Sample injury accident investigation report. (Attach report)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3. Sample critical near-miss investigation report. (Attach report)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4. Investigation report recommendations action plan/ implementation evidences/ photographs. (Attach evidence or photographs)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. Incident Reporting & Investigation procedure/SOP. (Attach title page, table of contents, and approval page only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Sample injury accident investigation report. (Attach report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Sample critical near-miss investigation report. (Attach report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Investigation report recommendations action plan/ implementation evidences/ photographs. (Attach evidence or photographs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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20.	<b><u>Response to NEPRA Recommendations/ Corrective Actions</u></b> <p>Have all recommendations/corrective actions directed by NEPRA been fully implemented within the specified period of time?</p> <table border="1"> <thead> <tr> <th>Subcategory</th><th>Attached</th><th>Not Available</th><th>Not Applicable</th></tr> </thead> <tbody> <tr> <td>1. The action plan/evidence of the implementation of the recommendations provided by NEPRA within the specified timeframe. (Attach evidence)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>					Subcategory	Attached	Not Available	Not Applicable	1. The action plan/evidence of the implementation of the recommendations provided by NEPRA within the specified timeframe. (Attach evidence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
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Total Performance Evaluation Points:

Role	Name	Mobile Number	Signature	Date
Prepared by (Company Representative)				

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KE HSEQ Standards are Company's internal standards and meant for KE users only.