

Emergency Procedures and Rescue of People

Emergencies can occur at any time, posing risks to the life, health, and safety of workers. To ensure a prompt and effective response, NCC T&D must have site-specific emergency rescue procedures for high-risk scenarios, **including but not limited to:**

- Confined Space Rescue
- MEWPs (Mobile Elevating Work Platforms) Rescue
- Overhead Tower Line Rescue
- Substation Basement Rescue
- Fire Emergency
- Medical Emergency
- Fall from Height (e.g., Scaffolding)
- Excavation Collapse Emergency
- Heat Stress Emergency

All emergency procedures must comply with Saudi Arabian HSE regulations and, if applicable, the specific standards of clients such as Saudi Electricity Company (SEC) or Saudi Aramco.

Confined Space Rescue

Confined spaces, such as tunnels, shafts, and substation basements, present unique hazards, including limited entry/exit points, poor ventilation, and the potential for hazardous atmospheres.

Emergency Rescue Procedures

Pre-Entry Planning:

- Conduct a risk assessment to identify potential hazards (e.g., toxic gases, oxygen deficiency, or engulfment).
- Ensure all workers are trained in confined space entry and rescue procedures.

Rescue Team:

- Designate a trained rescue team of at least four workers (or all workers if fewer than four are on-site).
- Ensure rescue workers are trained in the use of self-contained breathing apparatus (SCBA) and other rescue equipment.

Rescue Equipment:

According to OSHA and NIOSH guidelines, when working in confined spaces, it is critical to provide Self-Contained Breathing Apparatus (SCBA) with appropriate ratings based on the depth, length, and specific conditions of the confined space. Key considerations include:

Air Supply Duration: The SCBA must have sufficient air capacity to allow workers to safely enter, work within, and exit the confined space, considering its size and the duration of the task. Typical SCBAs come with 30-minute, 45-minute, or 60-minute rated air cylinders.

Provide SCBA with appropriate ratings based on the depth/length of the confined space:

- Up to 100 metres: 30-minute rating.
- 100–150 metres: 60-minute rating.
- Over 150 metres: 90-minute rating.

NIOSH Certification: Ensure the SCBA is NIOSH-certified for the intended use, such as IDLH (Immediately Dangerous to Life or Health) environments.

Pressure Rating: SCBAs should be rated for high-pressure conditions (e.g., 4,500 psi) if required, to ensure a longer air supply for deep or extended entries.

Environmental Factors: Assess the confined space for potential hazards, such as toxic gases, oxygen deficiency, or contamination, and select SCBAs accordingly.

Training and Fit: Workers must be trained on the use of SCBAs, and the apparatus must fit securely to provide maximum protection.

Using SCBAs with the proper ratings helps ensure compliance with OSHA standards (29 CFR 1910.134 for respiratory protection and 1910.146 for confined spaces) and NIOSH recommendations, thereby safeguarding worker health and safety.

Ensure tripods, winches, and harnesses are available for vertical rescue operations.

Communication Systems:

- Equip workers with two-way radios or other communication devices to maintain contact with the rescue team.

Emergency Drills:

- Conduct regular drills to practice confined space rescue procedures and ensure readiness.

MEWPs (Mobile Elevating Work Platforms) Rescue

MEWPs are commonly used in NCC T&D projects for working at heights. However, workers may become stranded or injured due to equipment failure or other emergencies.

Emergency Rescue Procedures

Pre-Use Planning:

- Inspect MEWPs daily to ensure they are in good working condition.
- Ensure workers are trained in the use of MEWPs and emergency controls.

Rescue Team:

- Designate a trained rescue team familiar with MEWP operations and rescue techniques.

Rescue Equipment:

- Provide fall protection equipment, such as harnesses and lanyards, for workers on MEWPs.
- Ensure manual lowering devices or backup power systems are available to lower the platform in case of power failure.

Emergency Drills:

- Conduct regular drills to practice MEWP rescue procedures, including lowering stranded workers safely.

Overhead Tower Line Rescue

Working on overhead tower lines involves significant risks, including falls, electrical hazards, and extreme weather conditions.

Emergency Rescue Procedures

Pre-Work Planning:

- Conduct a risk assessment to identify hazards, such as live power lines, unstable structures, or adverse weather.
- Ensure workers are trained in tower climbing, fall protection, and rescue techniques.

Rescue Team:

- Designate a trained rescue team with expertise in tower rescue operations.

Rescue Equipment:

- Provide rescue kit i.e. climbing harnesses, lanyards, descent devices, suspension trauma strapped and other rescue devices for workers on towers.
- Ensure insulated rescue poles and non-conductive ropes are available for rescuing workers near live power lines.

Communication Systems:

- Provide workers with two-way radios or other effective communication devices to ensure seamless coordination with the rescue team and ground personnel.

Emergency Drills:

- Conduct regular drills to practice tower rescue procedures, i.e. rescuing workers from heights

Fire Emergency

Fires can occur due to electrical faults, flammable materials, or hot work activities.

Emergency Procedures

Fire Prevention:

- Identify and eliminate potential fire hazards (e.g., flammable materials, faulty wiring).
- Ensure fire extinguishers and fire blankets are available and accessible.

Emergency Response:

- Designate a fire warden to coordinate evacuation and firefighting efforts.
- Train workers in the use of fire extinguishers and evacuation procedures.

Evacuation Plan:

- Establish clear evacuation routes and assembly points.
- Conduct regular fire drills to ensure workers are familiar with evacuation procedures.

Medical Emergency

Medical emergencies, such as injuries or sudden illnesses, require immediate response.

Emergency Procedures

First Aid Kits:

- Ensure first aid kits are available and stocked with essential supplies.
- Designate trained first aiders on-site.

Emergency Contacts:

- Post emergency contact numbers for local hospitals and ambulance services.

Medical Training:

- Train workers in basic first aid and CPR.

Fall from Height (e.g., Scaffolding)

Falls from scaffolding or other elevated work platforms are a major risk in construction projects.

Emergency Procedures

Fall Protection:

- Provide harnesses, lanyards, and guardrails for workers on scaffolding.
- Ensure scaffolding is inspected daily and meets safety standards.

Rescue Team:

- Designate a trained rescue team to respond to fall incidents.

Emergency Drills:

- Conduct regular drills to practice fall rescue procedures.

Excavation Collapse Emergency

- Excavation work poses risks of cave-ins, which can trap or injure workers.

Emergency Procedures**Pre-Work Planning:**

- Conduct a risk assessment to identify unstable soil conditions.
- Ensure trench boxes or shoring systems are used to prevent collapses.

Rescue Team:

- Designate a trained rescue team with expertise in excavation rescue.

Rescue Equipment:

- Provide shovels, air bags, and lifting equipment for excavation rescue.

Emergency Drills:

- Conduct regular drills to practice excavation collapse rescue procedures.

Heat Stress Emergency

- Working in high temperatures can lead to heat stress, heat exhaustion, or heat stroke.

Emergency Procedures**Prevention Measures:**

- Provide shaded rest areas and cool drinking water.
- Schedule work during cooler parts of the day.

Emergency Response:

- Train workers to recognize symptoms of heat stress (e.g., dizziness, nausea).
- Provide cooling stations and first aid for affected workers.

Key Components of an Emergency Response Plan**Risk Assessment:**

- Identify potential emergencies for each scenario.

Rescue Teams:

- Designate and train specific teams for each type of rescue operation.

Rescue Equipment:

- Provide and maintain appropriate equipment for all emergencies.

Communication Systems:

- Establish clear communication channels for reporting emergencies.

Training and Drills:

- Conduct regular training sessions and emergency drills.

Coordination with Local Authorities:

- Establish partnerships with local emergency services.

For more information, refer to NCC T&D's relevant IMS procedures or consult our HSE Department for expert guidance and training resources aligned with Saudi Arabian regulatory requirements.