PROCEDURE FOR IMS RISK MANAGEMENT

Quality Management System (ISO 9001:2015)
Occupational Health & Safety Management System (ISO 45001:2018)
Environmental Management System (ISO 14001:2015)

FALCON MIDDLE EAST CONTRACTING AND GENERAL MAINTENANCE – SOLE PROPRIETORSHIP L.L.C.

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1. Purpose

This procedure outlines the method of risk assessment and treatment process applied throughout FALCON MIDDLE EAST in respect of all management system within the Organization.

It is important that FALCON MIDDLE EAST has an effective risk assessment and treatment process in place to ensure that potential impacts do not become real, or if they do, that contingencies are in place to deal with them. It is important also that the process is sufficiently clear so that successive assessments produce consistent, valid and comparable results, even when carried out by different people.

2. Scope

The risk assessment is conducted in line with the IMS policies and procedures. The risks are identified based on inputs related to:

- Results of understanding context of the organization
- Results of understanding the needs and expectations of interested parties
- Scope of the management system
- Others

This procedure is applicable to the whole operations of FALCON MIDDLE EAST where risks to QHSE management system and integrity of the organization are at stake.

3. Responsibilities

The General Manager is responsible for:

- Maintaining and ensuring that this procedure is implemented within FALCON MIDDLE EAST
- Providing resources for the implementation of this procedure.
- Ensuring that the related departments/sections/personnel cooperate with FALCON MIDDLE EAST in the realization of this procedure.
- Identifying risks and for the development and maintenance of plans to manage those risks.

The QHSE Management Representative is responsible for:

- Supporting the Top Management for the maintenance and implementation of this procedure.
- Maintaining this document and keeping records of evidences.

The concerned Heads of Departments/Sections and employees are responsible to demonstrate cooperation and support to the Top Management in the implementation of risk management program within FALCON MIDDLE EAST

4. Procedure

4.1 RISK ASSESSMENT AND TREATMENT PROCESS

The process of risk assessment and treatment is shown in figure 1 and described in more detail in the following sections. The process used is *qualitative* in nature in that it uses the terms *high, medium* and *low* to describe the relative classification level for each specific risk.

4.2 Criteria for Performing Quality Risk Assessment

There are a number of criteria that determine when a IMS risk assessment should be carried out within FALCON MIDDLE EAST and these will vary in scope.
In general, the criteria are that a risk assessment should be performed in the following circumstances:

- Risk assessment covering the internal and external context of FALCON MIDDLE EAST and takes into account the statutory and regulatory requirements.
- Analyzing critical business activities.
- A comprehensive risk assessment covering all business activities within scope as part of the initial implementation of the QHSE management system.
- Updates to the comprehensive risk assessment as part of the management review process – this should identify changes to business activities, products, services and possibly risk levels
- As part of projects that involve significant change to the organization, the IMS, or its business activities
- As part of the change management process when assessing whether proposed changes should be approved and implemented.
- On major external change affecting the organization which may invalidate the conclusions from previous risk assessments e.g. changes to relevant legislation, etc.

4.3 Risk Acceptance Criteria

One of the options when evaluating risks is to do nothing i.e. to *accept* the risk. This is a valid approach but must be used with caution. The circumstances under which risks may be accepted must be fully agreed and understood.

Criteria for accepting risks will vary according to a number of factors which may change over time. These include the organization's general or cultural attitude to risk, the prevailing financial climate, legal and regulatory requirements, the current view of top management and the sensitivity of the specific activities or business areas within scope.

Before carrying out a risk assessment the criteria for accepting risks should be discussed by appropriate people with knowledge of the subject area and, if necessary, top management. This discussion should establish guidelines for the circumstances in which risks will be accepted i.e. not subjected to further treatment.

These criteria may be expressed in a number of different ways, depending on the scope of the risk assessment and may include situations where:

- the cost of an appropriate control is judged to be more than the potential loss
- known changes will soon mean that the risk is reduced or disappears completely
- the risk is at or lower than a defined threshold, expressed either as a level e.g. *low* or as a quantified amount e.g. a financial sum
- an area is known to be high risk but also high potential reward i.e. it is a calculated risk

These acceptance criteria should be documented and used as input to the risk evaluation stage of the assessment process.

4.4PROCESS DIAGRAM

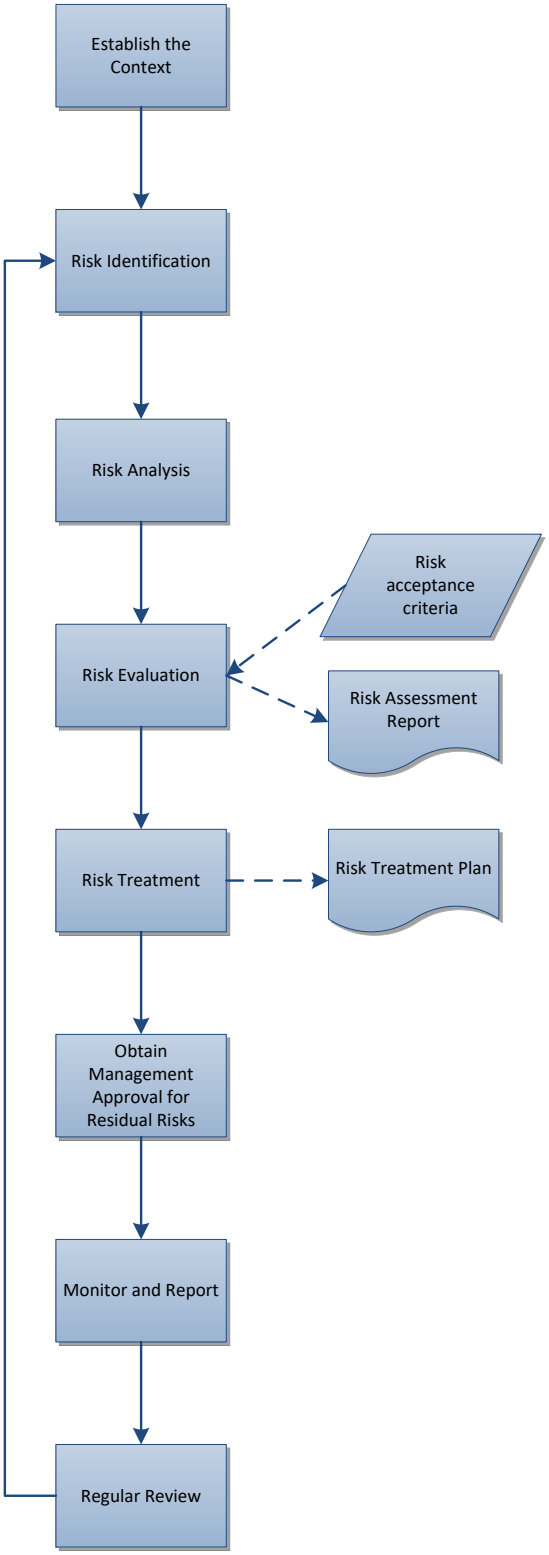


Figure 1 - Risk assessment and treatment process diagram

4.4.1 Establish the Context

The overall environment in which the risk assessment is carried out should be described and the reasons for it explained. This should include a description of the internal and external context and any recent changes that affect the likelihood and impact of risks in general.

The internal context for IMS may include:

- governance, organizational structure, roles and accountabilities
- policies, objectives, and the strategies that are in place to achieve them
- the capabilities, understood in terms of resources and knowledge (e.g. capital, time, people, processes, systems and technologies)
- information systems, information flows and decision-making processes (both formal and informal)
- relationships with, and perceptions and values of, internal stakeholders
- the organization's culture
- standards, guidelines and models adopted by the organization
- form and extent of contractual relationships

The external context for IMS may include:

- the cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive environment, whether international, national, regional or local
- key drivers and trends having impact on the objectives of the organization
- relationships with, and perceptions and values of, external stakeholders

The scope of the risk assessment should also be defined. This may be expressed in terms of factors such as:

- geographical location e.g. countries, offices
- organizational units e.g. specific departments
- business process(es)
- services, systems and processes
- Customers, products or services

4.4.2 Risk Identification

The IMS risk identification is based on the results of the business processes analysis. This analysis specifies the business services carried out by process owners, and specifies their importance in terms of prioritized activates. For these services, the following sources of risk shall be considered, for example;

- Unavailability of staff;
- Destructive loss of all or part of a building;
- Major physical utilities (power, water, etc.);
- Loss of ICT functions (data center, servers, etc.);
- Unavailability of information;
- National / international crisis or disaster;
- Financial shortcomings;
- Unavailability of transportation;
- Any issues or problems with business partners and/or suppliers;
- Noncompliance to legal requirements;
- Emergency arrangement not defined and in place;
- Audits not conducted;
- Management review not carried out;

- Etc.

Interviews with relevant functional managers, employees and stakeholders shall be used to identify the IMS risks. The identified risks shall address disruption to the organization prioritized activities related to processes, systems, information, people, assets, outsource partners, and other resources that support these business processes.

4.4.2 Risk Analysis

Risk analysis within this process involves assigning a numerical value to the a) likelihood and b) impact of a risk.

Risks Analysis Scales

All risks that have been identified need to be analyzed to assess their severity to ensure that the most important risks are treated first. All risks that have been identified are a compound of;

- Likelihood – how likely are the identified risks to occur?
- Impact – how big is the impact of the risk occurring to organization's business and to the objectives?

Likelihood Scale

The likelihood of a risk is distinguished using the table below, and the following considerations can help to identify an appropriate likelihood for a risk in question:

- If objective information, such as records of past events, are available they should be used
- Without objective information, interviews with stakeholders and employees can be used to get a first impression
- Information from other UAE governments or other organizations can also help to assess the likelihood

Another important part of the likelihood estimation is the consideration of existing controls to manage the risk – if controls of any kind have been implemented, they will help to protect against the risk and will make its occurrence less likely. Controls can vary depending on the discipline-specific risks considered, but it is important to take them into account.

In the same way, controls not in place can actually increase the likelihood of the identified risks. Any control that is incompletely implemented or not properly documented will make the organization vulnerable, and therefore increase the risks likelihood.

Based on the above considerations, the general guidance for the meaning of the likelihood of each risk might be estimated using this scale, as shown in table 1;

Table 1: Likelihood Scale

1	Very Unlikely	▪ Less than 1 in 5 years ▪ Extremely unlikely events, not expected to happen
2	Unlikely	▪ Less than 1 per year ▪ Unlikely, but there's a slight possibility it may occur at some time
3	Possible	▪ Once or twice per year ▪ The event might occur at some time, e.g. as there is a history of casual occurrence at the organization or similar organizations
4	Likely	▪ Between 3 and 5 per year ▪ There is a strong possibility that event will occur, e.g. as there is a history of frequent occurrence at the organization or similar organizations
5	Almost Certain	▪ At least 5 per year

		▪ Very likely! The event is expected to occur in most circumstances, e.g. as there is a history of regular occurrence at the organization or similar organizations

Impact Scale

A formal method for conducting impact assessments is set out which should be used to ensure that a full understanding is gained of the key business processes and what would happen if they were affected by a disruptive incident. This method is only summarized here.

An estimate of the impact that the risk being realized could have on the organization should be given. This should take into account existing controls that lessen the impact, as long as these controls are seen to be effective.

Consideration should be given to the impact in the following areas:

- Impact on business operations
- Impact on projects operation (i.e. product or service quality, etc.)
- Impact on financial viability

The impact of each risk should be graded on a numerical scale of 1 to 5. General guidance for the meaning of each grade is given in Table 2.

Table 2: Impact Scale

Area Impacted	**Very Low (1)**	**Low (2)**	**Medium (3)**	**High (4)**	**Very High (5)**
Customer Impact	No effect	Some local disturbance to normal operations	Can still deliver the product/ service with some difficulty	Business is crippled in key areas	Out of business; no service to customers
Impacts on Projects Operation	No or negligible project disruption	Minor project disruption	Considerable project disruption	Major project disruption	Failure of organization to meet its objectives
Financial Impact	Very little or none	Some	Unwelcome but could be borne	Severe effect on income and/or profit	Crippling; the organization will go out of business
Legal Impact	No implications	Small risk of not meeting compliance	In definite danger of operating illegally	Operating illegally in some areas	Severe fines and possible imprisonment

Based on the assessment of the grade of likelihood and impact scale, a score is calculated for each risk by multiplying the two numbers. This resulting score is then used to decide the classification of the risk based on the risk matrix shown below.

4.4.3 Risk Evaluation

The results of the risk analysis (also defined as Risk Value) shall be compared with predefined risk criteria to determine whether a risk is acceptable or needs risk treatment. Basis of the

comparison is the risk calculation and the level of acceptable risk. This risk assessment methodology uses the following table to assess the overall risk criticality:

Risk Matrix:

Likelihood *(from Table 1)*	**Impact** *(from Table 2)*				
	Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)
Very Unlikely (1)	1	2	3	4	5
Unlikely (2)	2	4	6	8	10
Possible (3)	3	6	9	12	15
Likely (4)	4	8	12	16	20
Almost Certain (5)	5	10	15	20	25

Risk Value:

1 - 2	Very Low	No action required
3 - 4	Low	No action required
5 - 8	Medium	Risk of this level can or cannot be treated, they need to be considered on a case to case basis
9 - 15	High	Risk of this level need to be treated to manage the situation
16 - 25	Very High	These risks have a very high or catasthropic impact on the organization

4.4.4 Risk Treatment

The risk matrix above shows the classification of risk and risk value; where only very low and low risks can be readily accepted, and risks of a medium level need to be investigated on a case-by-case basis – the decisions taken need to be explained. Risks of high and very high level should always be considered for risk treatment, but can be accepted if one or more of the following criteria apply:

- The cost of risk treatment outweighs the impact of the risk occurring;
- The actions for risk treatment are not practical within the organization business, work environment or culture;
- There are no legal implications when this risk is accepted;
- There are only tolerable impacts on organization's business objectives.

Risk Assessment Report

The output from the risk evaluation stage is the risk assessment report. This shows the following information:

- Risk descriptions
- Controls
- Likelihood
- Impact
- Risk Score
- Risk Classification
- Risk Owner
- Whether the risk is recommended for acceptance or treatment
- Priority of risks for treatment

This report is input to the risk treatment stage of the process and must be signed off by management before continuing, particularly in respect of those risks that are recommended for acceptance.

Risk Treatment Options

The following options may be applied to the treatment of the risks that have been agreed to be unacceptable:

1. ***Modify*** the risk - apply appropriate controls to lessen the likelihood and/or impact of the risk
2. ***Avoid*** the risk by taking action that means it no longer applies
3. ***Share*** the risk with another party e.g. insurer or supplier

Judgments will be used in the decision as to which course of action to follow, based on a sound knowledge of the circumstances surrounding the risk e.g.

- Business strategy
- Regulatory and legislative considerations
- Technical issues
- Commercial and contractual issues

The QHSE Management Representative will ensure that all parties who have an interest or bearing on the treatment of the risk are consulted, including the risk owner.

Selection of Controls

Appropriate controls must then be identified to address the risk treatment requirements agreed as part of the risk assessment exercise. These may include the creation of quality management plans, adjustment to business processes, negotiation of additional or changed commercial contracts, recruitment of further resources and installation of redundant equipment.

Risk Treatment Plan

The evaluation of the treatment options will result in the production of the risk treatment plan which will detail:

- Risks requiring treatment
- Risk owner
- Recommended treatment option
- Control(s) to be implemented
- Responsibility for the identified actions
- Timescales for actions
- Residual risk levels after the controls have been implemented

This plan will then be put forward to management for approval.

4.4.5 Management Approval

At each stage of the risk assessment process management will be kept informed of progress and decisions made, including formal signoff of the proposed residual risks. Management will approve the IMS Risk Assessment Register.

In addition to overall management approval, the acceptance or treatment of each risk should be signed off by the relevant risk owner.

4.4.5 Risk Monitoring and Reporting

As part of the implementation of new controls and the maintenance of existing ones, key performance indicators will be identified which will allow the measurement of the success of the controls in addressing the relevant risks.

These indicators will be reported on a regular basis and trend information produced so that exception situations can be identified and dealt with as part of the management review process of the IMS.

4.4.5 Regular Review

In addition to a full annual review, risk assessments will be evaluated on a regular basis to ensure that they remain current and the applied controls valid. The relevant risk assessments will also be reviewed upon major changes to the business such as office moves, mergers and acquisitions or introduction or new or changed products, services and business activities.

The opportunities arising from the risks and the processes should also be documented in the IMS Opportunities Register.

5. Reference Documents

- FALCON-PRO-05-FRM 01 IMS Risk Assessment Register
- FALCON-PRO-05-FRM 02 IMS Opportunities Register

PROCEDURE FOR TRAINING AND DEVELOPMENT

Quality Management System (ISO 9001:2015)
Occupational Health & Safety Management System (ISO 45001:2018)
Environmental Management System (ISO 14001:2015)

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1.0 PURPOSE

This procedure describes the methods used to ensure that all the employees at all levels receive the appropriate training in his/her related field and in accordance with the applied IMS.

This procedure also ensures that specific training needs are identified, based on business, departmental and individual needs, and necessary knowledge and skills are imparted to the personnel.

2.0 SCOPE

This procedure applies to all of FALCON MIDDLE EAST' employees who have direct or indirect relation with the overall quality of the product/service provided.

3.0 ROLES AND RESPONSIBILITIES

The **General Manager** has overall responsibility of this procedure and ensures that resources are available to provide trainings and enhance employees' competencies.

The **QHSE Management Representative** is responsible;

- To ensure that training plans are formulated and implemented though the HR Department.
- To ensure that training records are maintained.

The **Human Resources (HR) Dept.** is responsible;

- To facilitate training need submission of Department Heads or Section Heads at the beginning of the year or as required.
- To prepare Annual Training Plan in coordination with the QHSE Management Representative and Department Heads/ Section Heads.
- To coordinate/organize all approved trainings for employees or any other employee professional development activities.
- To seek approval of all training requests from the General Manager.
- To maintain training and staff development records.

The **Department Head** is responsible;

- To submit training need to HR department.
- To evaluate, along with HR Department and QHSE Management Representative, the effectiveness of the training attended by staff.

Employees are responsible;

- To raise training request (as required) to their Department Heads or Section Head.
- To submit copy of training certificate to HR Department for record purposes after the training.
- To share learnings from training to other employees if so required.

- Apply learnings of the training attended to their respective area of work.

4.0 TERMS AND DEFINITION

None

5.0 PROCEDURE

5.1 IDENTIFICATION OF TRAINING NEEDS

Training requirements are identified by the Department Heads or Section Heads through with consideration to job requirements, statutory/ legal requirements, objectives if any and annual employee competence and performance appraisal, etc. When selecting employees for any training, due consideration must be given to the responsibility (actual/planned), ability, language skills, literacy and the potential risks of each employee.

The training program will be classified into:

- Organizational Need based training
- Position Need based training
- Individual need based training

This identified Training Needs shall be then communicated to the HR Department by using the Training Need Form.

The Annual Training Plan based on the training needs of various departments/ sections is then compiled and prepared by the HR Department along with the QHSE Management Representative and shall be approved by the General Manager.

The HR Department is also responsible to do necessary arrangements for the trainings and inform the concerned employees.

The Annual Training Plan is then monitored and reviewed quarterly for its effectiveness by HR Department in coordination with the Department Heads/ Section Heads and the QHSE Management Representative, and ensure that it is realized as per the plan.

5.2 TRAINING IMPLEMENTATION

- QHSE Management Representative shall ensure that all the FALCON MIDDLE EAST employees will be inducted at the commencement of the employment.

- The training shall be carried out either internally or externally by qualified Instructor or by any external Training Service Provider. Only competent and approved Instructors shall be authorized to conduct any QHSE related trainings in FALCON MIDDLE EAST.

- It shall be the responsibility of Instructors to ensure that appropriate means of communication, training techniques, presentations and materials are utilized in the implementation and provision of trainings so that the knowledge and skills of the training participants are ensured with regards to QHSE matters. Training should be a combination of classroom and on-the-job training.

- When conducting training, the Instructor shall be responsible for ensuring the preparation of the following:
  - Suitable venue/place of training;
  - Clear & properly compiled training handouts;

- PowerPoint presentations;
- Laptop & Projector;
- Whiteboards & markers;
- Papers, pens & pencils;
- Examination sheets (if required);
- Copy of Training Attendance

- Training Attendance shall be used to register the names of the training participants.

- Training effectiveness evaluation shall be carried out by the Instructor as deemed practicable. The assessment of individual training participants may include any of the following:
  - Quizzes (to evaluate knowledge);
  - Written examination;
  - Performance-based checklist;
  - Oral interviews;
  - On-the-job simulations;
  - Others.

- The HR Head shall maintain individual training history records of employees for the purpose of reviewing training needs.

5.3 PERFORMANCE REVIEW AND TRAINING EVALUATION

On Completion of the training, a Post Training Evaluation Form must be issued to attendees and analyze the feedback of the training to determine effectiveness.

The Department Heads or Section Head in coordination with the HR Department and QHSE Management Representative monitors the employee's performance to verify the effectiveness of training using Evaluation of Training Effectiveness form and assign the trained person to train others as well, as necessary.

In the event of any deficiencies in a training program, The HR Department evaluate the ineffectiveness and submit a report for management review.

The Department Head and Section Heads must have a practice of continual monitoring and evaluation of employee's performance based on competence and record all results of the review.

The performance review of employees shall be conducted by the Department Heads or Section Heads annually and inform the results of to the employee being reviewed and communicate details of the review to the HR Department.

The HR Department as well as the different departments must maintain an updated, traceable and easily retrievable system of records including all trainings, performance review and training effectiveness.

5.4 TRAINING OF NEW EMPLOYEES

Upon hiring of the new employee, the HR Department must make necessary induction arrangements regarding the company policies including those concerning the IMS in coordination with the QHSE Management Representative. The Department Heads or Section Head must also arrange an orientation for him/her concerning those policies and tasks related to the department.

Details of the induction/orientation shall be documented in Induction Training Form.

Note: Visitors, contractors/subcontractors, suppliers and clients representatives must also be inducted and documented in Induction Training Form.

5.5 REQUIREMENTS FOR QHSE COMPETENCY

- The HR Department and QHSE Management Representative shall ensure that all employees of FALCON MIDDLE EAST including other external parties working on behalf of the organization performing tasks and by which it controls are competent on the basis of appropriate education, training and/or experience.

- The QHSE Management Representative in coordination with the HR Head shall identify and evaluate the competency requirements of each of their employees, taking into consideration both the relevant QHSE competencies and task-specific competencies.

- An Competency Matrix and Training Matrix shall be developed and maintained which will set the minimum qualification and training requirements for each job functions within FALCON MIDDLE EAST. Each employee assuming specific job function, roles and responsibilities should meet or try to achieve the minimum requirements specified in the Competency Matrix and Training matrix.

- The Competency Matrix and Training Matrix shall be periodically reviewed by the QHSE Management Representative along with the Human Resources Head and shall be reviewed and updated as deemed necessary. This matrix shall be subject to approval of the General Manager.

6.0 REFERENCE DOCUMENTS

- FALCON-PRO-08-FRM 01 Competency Matrix
- FALCON-PRO-08-FRM 02 Training Matrix
- FALCON-PRO-08-FRM 03 Training Need Form
- FALCON-PRO-08-FRM 04 Annual Training Plan
- FALCON-PRO-08-FRM 05 Training Attendance Sheet
- FALCON-PRO-08-FRM 06 Post Training Evaluation Form
- FALCON-PRO-08-FRM 07 Evaluation of Training Effectiveness
- FALCON-PRO-08-FRM 08 Induction Training Form

PROCEDURE FOR EMERGENCY MANAGEMENT

Occupational Health & Safety Management System (ISO 45001:2018)
Environmental Management System (ISO 14001:2015)

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1.0 PURPOSE

This procedure provides guidelines to FALCON MIDDLE EAST and all other parties involved in its operations, to effectively deal with different type of emergencies. It describes distinctly the systematic approach to prepare for and respond to any emergency situation during business operations.

The objective of this procedure is to:

- Ensure all type of emergency scenarios are identified are risk-based
- Ensure the protection of personnel working under or might be affected during business operations
- Enable personnel to have a clear understanding on their duties and responsibilities in dealing with emergency situations
- Enable personnel to leave an endangered area in the shortest practicable time and minimize the possibility of panic
- Ensure effective emergency coordination and communication
- Protect property and assets, and
- Minimize secondary damage.

2.0 SCOPE

This procedure is applicable to all emergency situations identified by the QHSE Management Representative and/or HSE In-Charge of FALCON MIDDLE EAST, which arises from the risk assessments carried out by the organization in compliance to the requirements of ISO 14001:2015 and ISO 45001:2018.

3.0 ROLES AND RESPONSIBILITIES

The **General Manager** is responsible for providing resources related to the effective implementation of the company's emergency preparedness and response plan.

The **QHSE Management Representative** is responsible for ensuring that this procedure is executed consistently and effectively all throughout FALCON MIDDLE EAST.

The **HSE In-Charge** is responsible for handling and managing the Emergency Response Team (ERT) and implementing the emergency response procedures.

Members of the **Emergency Response Team (ERT)** are responsible for ensuring proper implementation of the company's emergency response plans.

4.0 TERMS AND DEFINITION

Terms	Definition
Occupational Safety & Health Management System (OSHMS)	A system developed and implemented to include all factors related to Occupational Safety and Health for the purpose of protecting human health and ensuring safety of employees in the workplace.

Terms	Definition
Emergency	A sudden, urgent, usually unexpected occurrence or occasion requiring immediate action.
Incident	An event or chain of events which has caused or could have caused fatality, injury, illness and/or damage (loss) to assets, entity reputation or third parties.
Emergency Plan	Systematic instructions and procedures that clearly detail what needs to be done, how, when, and by whom before and after the time an anticipated emergency event occurs.

5.0 PROCEDURE

5.1 GENERAL EMERGENCY REQUIREMENTS

FALCON MIDDLE EAST shall designate an emergency commander / superintendent to oversee the emergency management, in line with the requirements of this procedure.

Any liaison with local or government emergency services, e.g. ERT, Police, Civil Defense, etc. shall be via emergency commander / superintendent or deputy.

Transportations required to rapidly remove personnel from the vicinity of an emergency shall be provided by FALCON MIDDLE EAST in the work areas. This is of particular importance for personnel working at hazardous areas.

Consider the need for PPEs appropriate for any type of emergencies that may arise. The responses to be undertaken to specific emergencies, escape and evacuation of affected personnel to a place of safety.

Consider fire risk and shall specify required protection measures.

Identify the number of trained ERT, which comprised of trained first-aiders, fire fighters, spill responders, etc., required for their scope of work.

Provision of necessary emergency response equipment and facilities as per requirement.

In case of minor first aid cases involving FALCON MIDDLE EAST workforce in the site, available facility will be utilized by FALCON MIDDLE EAST

5.2 IDENTIFICATION OF EMERGENCY

The identification of the type of emergency situations for all routine and non-routine activities and normal and abnormal conditions during business operations are mainly based on the following factors;

- Risk assessment process is defined in the risk management procedure. The identified emergency situations as a result of associated hazard and significant risks in each activity shall have a clear identification in the risk register. The specific and suitable controls assigned for any identified emergency scenarios in the risk register shall be consistent and linked with the specific emergency response procedures.

- The process of identification of emergency also considers the applicable legal requirement, any incident occurrences which resulted to emergency situation and any relevant emergencies with high potential to occur during FALCON MIDDLE EAST operations. These

considerations are helpful in developing management programs for emergency prevention as appropriate control measures are already defined.

- The following are the common emergency scenarios as identified and registered in the risk register during the risk assessment process;
    - Fire and explosion
    - Gas leakage
    - Spillage of hazardous substance
    - Serious physical injury or ill-health
    - Serious property damage
    - Serious vehicular incident
    - Emergency event arising from highly critical activities conducted, i.e. Excavation works, work at height, confined space, lifting activities, etc.
    - Security threat
    - Natural calamity
    - Cave-ins
    - worker falling and being suspended by a harness, a medical emergency at height, equipment failure
    - Equipment failure, falling loads, crane collapse, or a worker becoming entrapped.
- The identification, assessment and management of emergency situations shall also consider the needs for ensuring all affected due to impact of emergency are identified and appropriate control measures are in place. This shall reflect in the risk management programs.
- The specific emergency response procedures are established and described in this procedure addressing the above emergency situations.

5.3 EMERGENCY RESPONSE STRUCTURE

In order to sustain a systematic chain of commands and an effective emergency response management, emergency response structure shall be established in FALCON MIDDLE EAST site. A specific guideline for conducting emergency drill has been established which includes the process of selection, formation, training and defined responsibilities including daily duties of ERT members.

Emergency response team members and their contact details are incorporated in the specific emergency evacuation plan posted in conspicuous locations in each site.

5.4 EMERGENCY STRUCTURE

Emergency response team structure shall be formed based on the following table;

ERT Structure	Target Function
Emergency Superintendent	Site In-Charge or Site HSE In-Charge
Deputy Emergency Superintendent	Site Engineer or Supervisor
Fire Warden	Departmental Supervisor or In-Charge
Deputy Fire Warden	Departmental Foreman

Security Team Leader	Site Security Officer(s)
Emergency Responders	Selected, Trained and Certified Employees

Specific ERT Roles and Responsibilities

Emergency Superintendent

- Lead the site Emergency Response Team during an emergency.
- Determine courses of action to take regarding any emergency cases that may arise during the site business operations.
- Participate in the review and recommends for continual improvement of this plan.
- Decide to terminate or evacuate the area in the event of emergency.
- Authorize the use of resources when appropriate.
- Issue an all clear alarm and return to work signal; and
- Chairman to address the press regarding the emergency.
- In addition, performs duties and responsibilities for the emergency mock drill, as defined in the emergency mock drill guidelines.

Deputy Emergency Superintendent

- Assist the emergency superintendent during the emergency.
- Performs the duties and responsibilities of the emergency superintendent in his absence and lead the emergency.
- In addition, performs duties and responsibilities of lead emergency superintendent for the emergency mock drill in his absence.

Fire Warden

- Ensure efficacy of the implementation of fire prevention, planning and control.
- Continuously evaluate the arrangements in place to prevent fire in the workplace.
- Regularly assess the fire risk associated in each activities and workplaces and recommend for effective control measures.
- Ensure fire protection system, i.e. fire detection, alarm and firefighting, in place, is in good working condition and regularly inspected.
- Act and respond as a first line defense during fire emergency.
- Ensure evacuation and safety of personnel in each work place in the event of an emergency.
- Continuously pass emergency information to all personnel during the evacuation.
- Cross-check all areas to ensure all employees are evacuated and machineries / equipment are shutdown.
- Maintain good coordination and communication with the emergency superintendent.
- Carry-out the head count of evacuated and report unaccounted employees for search and rescue.
- In addition, performs duties and responsibilities for the emergency mock drill, as defined in the specific guidelines.

Deputy Fire Warden

- Assist the area fire warden during the emergency.
- Performs the duties and responsibilities of the area fire warden in his absence and lead the emergency.

- In addition, performs duties and responsibilities of area fire warden for the emergency mock drill in his absence.

Security Team Leader

This function is performed by the facility safety & security officers whose responsibilities are:

- To ensure integrity of the perimeter fence.
- To provide necessary staffing to control use of the emergency gates.
- To prevent entry of unauthorized personnel.
- To direct the flow of traffic away from the emergency scene.
- In addition, performs duties and responsibilities for the emergency mock drill, as defined in the specific guidelines.

Fire Fighting Team

This function is performed by designated and trained fire fighters. They take directions from the ES or fire warden whose responsibilities are as follows:

- To provide initial evaluation of the situation to determine extend of firefighting needs.
- To deploy firefighting personnel and equipment.
- To advice fire warden or ES the need for an outside help.
- To update fire warden or ES as to the progress of fire control status.
- To clean-up and restore fire protection equipment and supplies.
- In addition, performs duties and responsibilities for the emergency mock drill, as defined in the specific guidelines.

First Aid/ Rescue Team

This function is performed by trained first-aiders whose responsibilities are:

- To locate and rescue missing persons.
- To render essential first aid and life support activities.
- To transfer victims to designated safe locations for medical treatment.
- To advice emergency superintendent of the number of injured and any other needs for additional medical assistance from outside agencies / external ERTs.
- To keep records of victims and their treatment.
- In addition, performs duties and responsibilities for the emergency mock drill, as defined in the specific guidelines.

Spill / Remedial / Recovery Team

This function is performed by selected personnel who are trained in handling, controlling and disposing hazardous chemicals. Their basic functions are as follows;

- Contain the spillage and ensure it won't spread-out and create further environmental impact.
- Assess extent of spill emergency and advice ES if external ERT is required.
- Clean-up any spilt chemicals accordingly.
- Store and dispose recovered or cleaned-up materials according to MSDS of chemical and waste management plan.
- Ensure waste transfer note for disposed of chemical.
- Provide all details required for incident investigation.
- In addition, performs duties and responsibilities for the emergency mock drill, as defined in the specific guidelines.

5.4 FIRE MANAGEMENT PLAN

Fire Management Plan of FALCON MIDDLE EAST includes, as minimum, the prevention, planning and control of any related fire emergency situations. FALCON MIDDLE EAST has established

comprehensive fire management guidelines which detailed as minimum, the following arrangements;

- Roles and responsibilities of affected employees
- Fire Fighting Equipment
- Fire Risk Assessment
- Fire Safety Management Plan
- Dangerous Substance
- Prevention of Explosions
- Emergency Escape Routes
- Maintenance Requirements

As part of the workplace fire hazard list, potential ignition sources such as hot works, smoking etc. are identified. Additionally, measures required to control those workplace fire hazards and equipment designed to control or extinguish fires are included as a part of the fire prevention creation of potential sources of ignition.

Workplaces should be cleaned regularly and accumulation of flammable materials will be removed or stored in standard flammable and hazardous materials containers.

Buildings and offices walkways will be maintained in a clear and orderly fashion. All waste and combustible materials such as used oil or ordinary materials will be handled and stored in a manner to avoid the creation of a fire hazard.

5.5 INCIDENT OR EMERGENCY NOTIFICATION/ REPORTING PROTOCOL

In the case of reporting an incident or notifying an emergency, the protocol as follows must be followed;

- Internal reporting and notification of an incident shall be done by the immediate person who has witnessed the incident or the first responder to the Emergency Superintendent or his Superior, stating the following minimum information;
  - The name and designation of the reporting person
  - The exact location of the incident or emergency
  - The type and extent of emergency
  - The assistance required

- For external notification of an emergency, the Emergency Superintendent shall notify or coordinate with the external ERTs or Local Authorities, stating the following information;
  - Clearly state the type of emergency and exact location.
  - Clearly state the extent of emergency, the current condition and first-hand response undertaken.
  - Clearly state the required assistance and resources.
  - Maintain close coordination with the External ERTs.
  - Update the Internal ERT on the status of estimated arrival time of External ERT to necessitate further actions.
  - Uphold coordination and assistance with the External ERT for any information required.

5.6 EMERGENCY EVACUATION PLAN

The Emergency Evacuation Plan is developed and kept updated to ensure applicability and suitability in the area. It should contain, as minimum, but not limited to the following;

- Clear and precise lay-out of the area
- Locations of emergency exits
- Locations of alarm call point
- Locations of firefighting equipment
- Safe exit routes

- Specific emergency instructions, and
- Location of the assembly points
- Contact details of internal Emergency Response Team.

The evacuation plan will be strategically posted in conspicuous locations in the site and communicated among employees during HSE induction and specific emergency evacuation training.

5.7 EMERGENCY RESPONSE PLANS (ERT)

Specific emergency response plan is established ensuring appropriate management of each emergency situation identified in this procedure.

a) Fire Emergency Response Procedure

In the event of fire emergency situation, the following procedure shall be followed in order to react properly and safely:

- Upon discovering a fire, the person who noticed it must immediately activate the alarm to inform everyone in the affected area that there is an emergency.
- FALCON MIDDLE EAST ERT must be immediately notified through the concerned Fire Warden.
- Upon hearing the emergency alarm, stop work and shutdown equipment or machineries, if still safe to do so.
- All personnel must leave the affected and endangered area immediately via emergency exits or other safe route and proceed to Assembly Point (AP). Avoid panic, isolate / shut-off power supplies and close windows and doors if still safe to do so, upon evacuating.
- The Incident Commander must assess the situation and extent of emergency.
- If extent of fire emergency necessitate assistance of external ERT (Civil Defense, etc.), the ES must activate external communication / coordination protocol.
- Fire Warden and Emergency Responders shall control the evacuation of personnel to the assembly point. Afterwards, control evacuated personnel and gathers information of unaccounted person, in close coordination and assistance of Departmental Supervisors and Line Foremen.
- The ERT shall immediately conduct search and rescue for any unaccounted person(s).
- No evacuated personnel shall leave the assembly area until head count is done and all clear signal / siren is given.
- Clean-up and remedial operations shall take place after concluding that fire is totally put-off and area is under normal and safe condition.
- The Emergency Superintendent must give brief information and clear instruction to all personnel, that situation has been controlled and condition is normal and safe, prior to dispatching all personnel to their designated workplaces.
- ERT shall commence the thorough incident investigation and reporting procedure.

Note:

- If the fire is small or at first stage that can be extinguished by available fire extinguisher, respond if trained, safe and confident to do so.
- If fire is at serious stage, do not attempt response and evacuate the area immediately.
- All employees to familiarize themselves with emergency evacuation plan located in conspicuous areas.

b) Gas Leak Emergency Evacuation Procedure

- In the event of gas leak emergency situation, the following procedure shall be followed in order to react properly and safely:

    - Raise the alarm
    - Control yourself (avoid panic)
    - Control your workplace (shutdown machineries/equipment), if still safe to do so.
    - If gas is known to be immediately hazardous to life and health, hold breath for few seconds and leave the affected area quickly. If escape hood or any respiratory protection is available, use it properly and evacuate.
    - Check the direction of the wind.
    - Proceed to the nearest assembly point via safe route and opposite to wind direction or cross wind.
    - Report any missing person for search for and rescue.
    - Do not leave the assembly point and wait for further instruction by the ES.

Note:

- Attempt rescue if trained, confident, have a good means of escape and equipped with adequate and correct PPE.

c) Vehicular Accident Response Procedure

In the event of a major vehicular accident, the following procedure shall be observed;

- If involved driver / operator is capable to do so, shall immediately notify his direct supervisor or ES of his site about the accident in accordance with the incident / emergency notification or reporting protocol.
- If the accident caused heavy spill (oil, diesel, wet concrete, etc.), the driver, if capable and confident to do so, shall stop the immediate source and contain the spillage with the available containment material / equipment to avoid further impact to environment. Observe spill response procedure.
- If the vehicular accident posed traffic obstruction or eminent danger to other motorist, the driver / operator if capable to do so, shall notify the motorist with warning triangle, hazard lights, or other safe and practicable means.
- If the accident caused engine fire, the driver / operator if capable and trained to do so with proper firefighting equipment, shall extinguish the fire. If extent of fire becomes critical posing eminent danger to life shall leave the endangered area and immediately notify external ERT (999).
- If the accident caused physical injury to other motorist, the driver shall follow personal injury response procedure.
- The driver / operator shall provide all necessary information and participate in the incident investigation.

d) Serious Personal Injury/Cave-in during excavation Response Procedure

The following response procedure shall be followed in the case of serious personal injury that requires immediate medical attention. For minor personal injuries that do not require medical attention, first aid treatment is necessary to be administered by a trained first-aider.

- Upon the occurrence of personal injury, the person witnessed the incident shall immediately assess the incident scene or area.

- If the incident scene and injured person's condition is not safe, make it safe ensuring you will not put yourself, injured person and others in danger. Always ask for assistance.
- Immediately notify the Supervisor and the internal ERT in the area / site.
- If trained and certified first-aider, respond and assess the condition of the injured person.
- Keep on monitoring the condition of the injured person until internal ERT is arrived in the scene.
- Participate during the investigation process.

e) Major Property Damage Response Procedure

The following response sequence shall be followed in the case of major property damage that requires immediate action which is directly or likely to cause emergency.

- Upon the occurrence of the serious property damage, immediately assess the condition of the area. Do not put yourself in danger.
- Immediately notify the Supervisor and internal ERT with all the details.
- In the event of any other type of emergency, such as; personal injury, spill, etc. follow specific response procedure.
- Participate during the investigation process.

f) Medical Emergency (Serious Ill-health) Response Procedure

The following procedure shall be applied as first hand respond;

In the event of heat stroke;

- Immediate cooling of the body is essential to prevent death.
- Transfer the person to a cool environment.
- Cool down the body temperature of person wet sheets or sponge down with cold water. Immerse in cold water bath if possible until temperature is down to 39 deg. C and stop when temperature lowered down to avoid shock.
- Seek immediate medical attention.

In the event of other ill-health cases;

- Upon noticing a person suffering from serious ill-health, immediately respond to assist the person, if trained to do so.
- Transfer the person to a safe and comfortable area.
- Immediately notify Supervisor or Emergency Superintendent for external medical assistance or ERT required.
- Assist and monitor the person until external ERT arrived in the area.

g) Site Security Emergency Procedure

In the event that site security system is threatened in any form, the following procedure shall be applied as first hand response;

- Upon discovering any security threat, the Site Security Officer on-duty or the Emergency Superintendent must be immediately notified.
- Site Security Officer on-duty must respond immediately to the scene, only if safe to do so, and report the extent of security threat to the incident commander. Site Security Supervisor in-charge shall be notified, as well, to ensure adequate support and action is ensured.
- If the security threat requires assistance of Local Authorities (Police) or ERTs, the Emergency Superintendent must immediately notify and emergency external coordination / notification protocol shall be followed.

- All employees that might be affected shall be instructed / alarmed and evacuated to the assembly point or safe area, where required.
- In the event that another emergency situation has occurred as a result of the security threat, applicable emergency procedures, as stated herein, shall be followed.
- Full investigation report, in accordance with the incident investigation procedure, shall be carried-out immediately.
- Top management and sector regulatory authority will be notified of the incident, for further action required.

h) Natural Calamity Emergency Response Procedure

In the event of any natural calamity, such as; sand storm, earthquake, heavy rain, etc. the following basic response procedure must be observed;

During heavy sand storm

- Do not leave the site office or room and remain calm.
- Keep all openings, such as; windows, doors, ventilation, etc. closed to avoid dust and wait until the condition subsides.
- In case of workers exposed to outdoor works, immediately stop the activity and as you leave, the equipment and machinery must be shut down and avoid passing nearby any materials that can collapse or fall.
- Proceed to the secured area or room, where good ventilation of fresh air is available and wait until condition subside.

During heavy rain

- Do not leave the site office or room. In case working outside, proceed to area where appropriate or suitable shed is available.
- If outdoor working with power tool or equipment, shutdown, disconnect from electrical source and secure the tool and equipment to avoid from getting wet.
- In driving on the roads, stop and park safely off road and wait until condition subside.

During earthquake

- If inside the office or room, do not panic and remain calm.
- Hide under a sound and stable table and do not come close to any falling or collapsing objects.
- If working outdoor, do not panic, stop the work immediately and as you proceed to a safe place, move away from any falling or collapsing objects.
- Wait until the condition subsides and all clear instruction from ERT.
- In case stranded, do not leave the place and call for ERT for rescue.

Note:

- Internal ERT shall maintain close coordination with external responders.
- Observe emergency response procedure, if safe to do so, for any gas or chemical leak that might arise.

i) Emergency during the conduct of Hazardous Activity

In the event of any emergency that may arise during the conduct of highly hazardous activity, such as; confined space, work at height, etc. the following basic response procedure must be observed;

- Immediately stop the work and notify the Supervisor / HSSE Team / ERT, following the emergency protocol.
- The work area must be secured from unwanted personnel and materials.
- In the event of work at height emergency scenario and physical injury is involved at height, the person must be given first-aid and extricated using a man lift, man basket or other safe means of evacuation.
- In the event of confined space emergency, observe the following procedure;

    - If a hazard arises within the confined space, personnel in the space will immediately exit and contact the entry Supervisor and the HSSE Team / ERT. The entry Supervisor, with assistance from the HSSE Team / ERT, will re-evaluate the space to determine the appropriate course of action.
    - Personnel will immediately leave the space when any of the gas monitor alarm points are activated.
    - If at any time there is any questionable action or non-movement by the authorized entrant, the attendant will make a verbal check. If there is no response or a questionable response, the worker in the space he will be instructed to evacuate the space immediately.
    - If possible, authorized entrants will initiate self-rescue by climbing out of the space.
    - If self-rescue is not possible, the attendant will retrieve the entrant via the connected retrieval line. If the attendant is unable to retrieve the entrant via the lifeline, the attendant will call for assistance from OSH Department.
    - If the entrant is disabled due to falling or impact, he/ she will not be removed from the confined space unless there is immediate danger to his/ her life.
    - The attendant will not enter the space to perform rescue operations.

j) Spill Response Procedure

In the event of any chemical spill (minor or serious), the following general response procedure shall be followed;

- Upon witnessing a spill, immediately notify the internal ERT in the site.
- If spill is minor and safe to do so, stop the spill from the source. Example; close spilling / leaking valve or outlet of chemical container, etc.
- If the spill is major, notify the internal ERT or Supervisor about the gravity of the spill for necessary response equipment or where external ERT to be notified.
- Contain the spillage, if liquid, to avoid spreading. Use spill response equipment or sand.
- If the spill is chemical powder, stop from source by covering / sealing the container if bags.

5.8 EMERGENCY CONTACT DETAILS

Emergency contact detail is incorporated in the emergency evacuation plan which is strategically posted in conspicuous areas of all FALCON MIDDLE EAST sites and offices. The contact details contain the FALCON MIDDLE EAST ERT and external ERTs or Local Authorities. The contact details will be kept up to date and communicated among employees during induction and training.

5.9 EMERGENCY EVACUATION DRILL REQUIREMENTS

a) General Requirements

The emergency drill program shall be in accordance with the specific guidelines established for conducting emergency mock drill.

b) Schedule

Emergency evacuation drills are to be conducted at regular intervals or as frequent as required.

c) Notification

- Employees shall not be notified prior to any emergency evacuation drill.
- Exception: The Senior management will be notified to avoid the requirement of calling the emergency services.
- The legal authorities will also be notified to avoid confusion and unnecessary disturbances, if applicable.
- Sector Regulatory Authority and the Civil Defense may be notified of an emergency drill and may be invited for attendance for the purpose of response times / co-ordination.

5.10 COMMUNICATION

The emergency alarms, signals, etc. alert all personnel within the area of any emergency scenarios. Any codes utilized for the emergency alarm system, if any, for different emergencies and communication protocols shall be communicated to all affected employees and service providers during induction and specific trainings. Adequate and audible alarms shall be provided and strategically installed in accessible and appropriate locations.

5.11 EMERGENCY RESOURCES REQUIREMENTS

As minimum, the following resources are required to ensure effective management of any emergency situations.

- Emergency Response Team
- First-aid equipment in accordance with applicable legal requirements, such as;
  - Windsocks, where applicable in the site, will be visible from each work area.
- Fire protection system shall be provided, where applicable in the site, such as;
  - Appropriate personal protective equipment, safety posters and safety signs.
- Spill response equipment, such as;
  - Transportation shall be made available and adequate for FALCON MIDDLE EAST employees in the event of forced location evacuation.

5.12 TRAINING REQUIREMENTS

Training will be required for designated ERT functions. Likewise, FALCON MIDDLE EAST workforce and other involved parties shall be made aware on the basic training requirements necessary for this plan.

Emergency Response Related Trainings;

- Incident / emergency notification and reporting
- Emergency response and evacuation
- Identification and awareness of workplace hazards and risk assessment.
- Fire prevention, planning and control
- Proper use of firefighting equipment, etc.

All trainings shall be conducted in accordance with FALCON MIDDLE EAST training plan and procedure. Periodic Supervisory Briefing shall be conducted by responsible departmental Supervisor to further re-emphasize the requirements of this plan. All training records shall be kept and made available in each FALCON MIDDLE EAST site for reference.

5.13 EMERGENCY PRE-PLAN, MONITORING AND REVIEW

A periodic desktop review of emergency scenarios and requirements shall be carried out. Discussions shall be held to ensure that major activities have been considered and that the Emergency Preparedness & Response Plan is sufficient to manage any emergencies that may arise during the conduct of these activities. The monitoring and review of the overall effectiveness of this plan and relevant procedures shall include, but not limited to;

- The adequacy and suitability of arrangements required for managing emergency scenarios, as defined in this plan.
- The effectiveness of fire prevention, planning and control program, in accordance with the established procedure.
- The effectiveness of evacuation plan and procedure.
- The monitoring and review of management, ERT and all other involved parties in executing their roles and responsibilities as defined in this plan.
- The evaluation of emergency preparedness and response training programs for employees and ERT members.
- The monitoring and review of overall effectiveness of the emergency drill program.
- Effectiveness of the emergency or incident reporting.
- The review of risk management.

The monitoring shall be done through regular inspections and audit process. The performance of the overall effectiveness of emergency plan shall be part of the regular management review.

6.0 REFERENCE DOCUMENTS

- FALCON-PRO-15-FRM 01 Emergency Evacuation Drill Plan
- FALCON-PRO-15-FRM 02 Emergency Drill Report
- FALCON-PRO-15-FRM 03 Emergency Contact Numbers
- FALCON-PRO-15-FRM 04 Emergency Response Team
- FALCON-PRO-15-FRM 05 Fire Extinguisher Inspection Report
- FALCON-PRO-15-FRM 06 First Aid Kit Inspection Report

METHOD STATEMENT

FOR EXCAVATION, LV CABLE LAYING AND BACKFILLING

Client :	**TAQA Distribution (TAQA-D)**
Contractor :	**Falcon Middle East Contracting & General Maintenance**
Project Title :	**D-111661/E, Long Term Rate Agreement for Supply and Installation of Underground Cable, Electrical Distribution Equipment, OHL and allied works in Abu Dhabi Central & Eastern Region (LOT 1).**
Document Title :	**Method Statement for Excavation & LV Cable Laying Including Backfilling**

1. DOCUMENT CONTROL

Rev.	Date	Description	Prepared by (QA/QC)	Checked by (PE)	Reviewed by (PM)	Approved by
00	11.06.24	Initial Issue	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
01	10.05.25	Review	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
02	01.09.26	Review	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
03	09.10.26	**Reviewed and revised in response to TQD comments**: Method Statement and Risk Assessment has been revised to incorporate underground utility identification, unexpected service depth (sec. 6.0, Page no. 7-9), Cable-detector requirements (Sec. 6.2, Page no. 8), Progressive scanning (sec. 6.2 Page no. 9), Trial holes(sec. 6.3,Page no. 9), Positive identification, hand excavation, CP/AP hold points,(Sec. 6.3 Page no. 11) Protection of exposed services, Stop Work Authority notification and incident reporting requirements. (Sec. 6.8.1,Page no. 13)	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
Signature						



Client :	**TAQA Distribution (TAQA-D)**
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1. SCOPE

This Method Statement outlines and defines the responsibilities within M/s. Falcon Middle East General Contracting & Maintenance in coordination with TAQA-D standards and specifications for installation of underground cables. The project scope includes installation of underground cables, electrical distribution equipment, OHL, emergency and corrective maintenance, and allied works in the Abu Dhabi region.

2. PURPOSE

To ensure that all information, materials, tools, equipment, manpower, and adequate supervision are available during the execution of LV electrical cable installation, and to ensure that work steps are analyzed and all safety measures are implemented so that the work is completed safely and in a timely manner.

3. DEFINITIONS

CLIENT: TAQA-D

CONTRACTOR: FALCON MIDDLE EAST GENERAL CONTRACTING & MAINTENANCE

PE: Project Engineer

PTW: Permit to Work

NOC: No Objection Certificate

PPE: Personal Protective Equipment

QA/QC: Quality Assurance / Quality Control

LAP: Limited Access Permit

TBT: Toolbox Talk

ITP: Inspection and Test Plan

COP: Code of Practice

TCD: Traffic Control Device

EHS: Environment, Health and Safety

MDD: Maximum Dry Density

MSRA: Method Statement and Risk Assessment

SWL: Safe Working Load

SSR: System Safety Rules

GSR: General Safety Rules

TPD: Town Planning Department

LV: Low Voltage

TAQA ESR: TAQA Essential Safety Rules

4. RESPONSIBILITIES

4.1 M/s. Falcon Middle East General Contracting & Maintenance shall provide competent and experienced personnel to carry out installation activities to the required workmanship standards while observing all necessary safety precautions. Project QA/QC personnel are responsible for implementing this Method Statement.

4.2 The Safety Officer is the custodian of the HSE procedures and shall assist, monitor, and verify supervisory compliance with the applicable procedures.

4.3 The CP, approved Site Engineer, Site Supervisors, and relevant site team shall ensure that the work methodology and this Method Statement are implemented as required.

5. SAFETY

- **M/s. Falcon Middle East General Contracting & Maintenance shall assign the CP, approved Site Engineer, and Site Supervisors full-time throughout the electrical installation work. A valid work permit signed by the concerned Authorized Connection Engineer shall be available. Permit requirements shall be reviewed and discussed at the work location before work starts through a Toolbox Talk covering identified underground services, scanning results, excavation limits, and emergency arrangements. The LAP/PTW shall remain at the worksite whenever work is in progress.**
- **A Job Hazard Analysis shall be prepared, submitted to the TAQA-D Safety Manager before work starts, and attached to the work permit.**
- **All access and exit routes shall be kept clear of obstacles, materials, and equipment.**
- **Temporary safety signs shall be provided at all access and exit routes, as applicable.**
- **All equipment and machines shall be fitted with spark arrestors where required. Fire extinguishers shall be inspected and tagged by the Falcon Middle East Safety Officer.**
- **Adequate illumination shall be provided for the work area and access, escape, and exit routes when working at night.**
- **All activities shall stop immediately in an emergency. The work permit shall be revalidated before activities recommence.**

- **The work area shall be kept free of cloth, rubbish, tools, wooden planks, boxes, and other debris.**
- **Falcon Middle East General Contracting & Maintenance shall maintain good housekeeping standards at all times.**
- **All installation and construction work shall comply with the project safety procedures.**
- **All client-approved PPE shall be available and worn at all times.**
- **Barricades, warning tape, signs, and other required controls shall be installed in accordance with project specifications to prevent unauthorized access to the work area.**
- **Access ways shall be kept clear and free from trip hazards.**
- **Appropriate communication equipment shall be available.**
- **All lifting gear, material-handling equipment, and small tools shall be certified where required, inspected, and colour-coded as applicable. Lifting gear shall be suitable for the weight of the item being handled.**
- **Lifting gear and operators shall hold valid third-party certification where required and shall be inspected before each use by a competent person.**
- **All riggers shall be third-party certified.**
- **Panels shall be secured properly during transportation. Vehicle speed between the storage location and site shall not exceed 20 km/h, as stated in the project requirements.**
- **Water-filled hard barriers shall be installed around excavated cable trenches and maintained until backfilling is complete.**
- **Valid calibration and test certificates shall be available at the site for all applicable machinery and equipment.**
- **Adequate fire extinguishers and first-aid kits shall be available at the site whenever work is in progress.**
- **Approved MSRA and risk assessment documents shall be available at the site with the approved CP/Supervisor. Utility-detection records shall remain available at the worksite throughout excavation activities.**

- **Operators and workers in the immediate vicinity of jackhammer operations shall wear suitable hearing protection, such as earplugs or earmuffs, due to expected high noise levels.**
- **Anti-vibration gloves shall be provided to and worn by jackhammer operators to reduce the risk of Hand-Arm Vibration Syndrome (HAVS).**
- **Wet methods, including water suppression, shall be used where practicable to control silica dust generated while breaking hard materials. Where required, approved respiratory protection (N95 or higher) shall be worn.**
- **Hoses, connections, and fittings on pneumatic jackhammers shall be checked for wear and damage before use. Hoses shall be secured to prevent whipping if pressure is suddenly released. Jackhammers shall be operated at a safe distance from other workers, and loose debris shall be cleared to prevent eye injuries.**
- **Excavation shall not proceed until all mandatory hold points have been signed off by the CP/AP. Unknown underground services shall always be treated as live until confirmed otherwise by the asset owner.**

6. WORK METHODOLOGY

6.1 GENERAL

All civil works associated with cable laying, including excavation, road crossings, pits, cable tiles, warning tapes, cable and other markers, station entries, and other permitted works, shall be designed and executed in accordance with the applicable technical specifications, including:

- S-AAA-CAB-INST-LV, Rev. 0 (2015) – Installation Requirements for LV Underground Cables.

6.1.1 Route Preparation and Pre-Excavation Requirements

a. Survey cable routes approved in GIS by the Client, Consultant, and concerned authorities, in accordance with the approved cross-sectional details.

b. Before work starts, valid TPD approvals, authority NOCs, GIS drawings, and applicable approved materials shall be available. Review utility drawings and actual site conditions before excavation. Underground services may be at unexpected depths.

c. Check the full route using a cable detector to identify external utilities.

d. Carry out manual trial pits along the cable route to identify existing services before main excavation begins.

e. Where required, excavate additional trial trenches to verify soil conditions and obtain samples.

f. Supervise excavation and, where necessary, provide trench shoring and dewatering, and prepare cable ducts and supporting structures for cable installation.

g. Cleaning and grading:

- Following the site survey, clear and grade the site where required.
- Remove vegetation and rubbish and transport them to designated disposal areas.
- Grade the site to provide access for vehicles and equipment.

h. Carry out dewatering where required.

i. Lay cables in accordance with TAQA-D standards.

j. Use cable bedding and backfill material with a maximum thermal resistivity of 120 cm°C/W under operating conditions, and which is chemically neutral.

k. Measure the thermal resistivity of backfill material along the cable route where applicable.

l. Plan procurement of cable cover tiles, warning tapes, and cable ducts in advance.

m. Before excavation, the Project Engineer, CP/AP, Site Supervisor, and Surveyor shall review all available utility information, including:

- Latest approved GIS drawings.
- TPD-approved drawings.
- NOC drawings issued by all concerned authorities.
- Existing as-built drawings.
- Previous work records, where available.
- Site conditions and visible indications of utilities.

Any discrepancy between drawings and actual site conditions shall be reported immediately to the TAQA-D Engineer. Excavation shall not commence until clarification has been obtained.

n. Assessment of existing site conditions:

The excavation team shall assess ground conditions before excavation, with particular attention to landscaping, filled areas, road widening, pavement reconstruction, previous utility diversions, and changes in finished ground level. The team shall not assume that existing utilities remain at their original design depth. Underground services may be at unexpected depths due to previous construction activities.

6.2 SURVEYING

a. All survey equipment shall be calibrated before survey work begins.

b. Set out the lines and check for possible obstructions before work commences.

c. During surveying, check the proposed cable route for underground utilities using a cable detector.

d. Underground utility detection:

Before excavation, detect underground services using approved utility-locating equipment. The cable detector shall be suitable for the utility type, within its valid calibration period, and operated by trained and competent personnel. Consider detector selection, operating modes, and limitations.

Mark scanning results on the ground. Complete a Utility Detection Record documenting the date, location, detector used, calibration status, operator name, detected services, and areas of uncertainty.

The Site Supervisor shall communicate all detected utilities to the workforce during the Toolbox Talk before excavation.

Progressive utility scanning shall be repeated whenever excavation progresses, trench alignment or depth changes, soil conditions change, previously unidentified services become visible, or work resumes after an interruption.

e. Prepare shop drawings and submit them to TAQA-D for review, agreement, and approval.

f. Surveying during execution shall be carried out by qualified surveyors.

g. Use suitable survey instruments, such as a Total Station, digital theodolite, and accurate levelling instruments.

h. Survey accessories, including ranging rods, measuring tapes, ranging poles, and tripods, shall be suitable for the task. Survey equipment shall be calibrated.

i. Steel or sharp-edged metal rods shall not be used as survey pegs or points where they could damage existing underground services.

j. Keep survey records up to date, as they form the basis for payment, measurement sheets, and as-built records.

k. Record all changes on the final as-built drawings.

6.3 EXCAVATION – SANDY AREA

a. After verification of the SVR, plan the excavation and determine whether a LAP is required, subject to work-order approval.

b. Excavate in accordance with approved GIS/TPD drawings.

c. Mechanical excavation is not permitted within 5 metres of existing services.

d. Excavate to the lines, grades, and levels shown on the drawings.

e. Remove unsuitable material and transport it to designated disposal areas.

f. Place excavated material at least 1.00 m away from the edge of the excavation.

g. Where necessary, slope the excavation bottom to facilitate dewatering.

h. Trench width and depth shall comply with TAQA-D specifications.

i. Protect the excavation with safety barriers, cones, warning tape, safety lights, project signboards, and safety signs.

j. Carry out final excavation to formation level shortly before placing bedding material.

k. Provide access ladders for safe entry to and exit from the excavation.

l. Arrange inspections with the Connection Engineer and obtain approvals at the required stages in accordance with agreed procedures.

m. Provide and verify the emergency plan at the work location.

n. Provide suitable access, illumination, fire extinguishers, and signboards at the site.

o. Store construction materials, including cable, so they do not create injury or damage risks. Move materials away from nearby work areas and trenches before excavation starts where necessary.

p. During movement or relocation of materials, follow the excavation MSRA and safe work steps, including trench length and width controls, avoidance of mechanical excavation near existing underground services, and manual excavation using approved tools.

q. Mandatory trial holes shall be excavated manually before excavation activities. Trial holes shall positively identify existing underground services.

r. Do not rely solely on detector indications or drawings to identify existing services. Excavation shall not proceed until verification has been completed by the CP/AP where required. CP/AP approval is a hold point.

s. Carry out safe hand digging using insulated excavation tools and continue until adequate clearance from services has been established.

6.4 EXCAVATION – HARD AREA

a. After verification of the SVR, plan the excavation and determine whether a LAP is required, subject to work-order approval.

b. Excavate in accordance with approved GIS drawings.

c. Mechanical excavation is not permitted within 5 metres of existing services.

d. Use machinery to excavate hard or rocky areas only with the required safety precautions.

e. Use dune sand for backfilling to protect cables from hard or rocky material.

f. Carry out final excavation to formation level shortly before placing bedding material.

g. Minimum trench width shall be as shown in the drawings and standard drawing DWG AAA CAB 01 00 09.

h. Provide access ladders for safe entry to and exit from the excavation.

i. Arrange inspections with the Connection Engineer and obtain approvals at the required stages in accordance with agreed procedures.

6.5 USING JACKHAMMERS AND MACHINERY

Hard/rocky areas and asphalt surfaces shall be excavated using jackhammers for initial breaking and heavy machinery (e.g., a backhoe loader with a rock-breaker attachment) for larger areas, with strict safety precautions. Jackhammer operation shall be limited to areas where mechanical excavation is not permitted or where precise breaking is required to avoid damage to existing services.

6.6 INTERLOCK TILE REMOVAL AND REINSTATEMENT PROCEDURE

a. Obtain all required permits from the concerned authority before removing interlock tiles.

b. Protect the work area with safety barriers and safety netting.

c. Carefully remove existing tiles at marked locations before excavation.

d. Excavate trial trenches using manual tools to locate existing utilities. Continue excavation for proposed utility crossings to the depths shown on approved drawings.

e. Compact the trench bottom using a plate compactor or roller compactor to the satisfaction and approval of the developer/concerned authority.

f. Install 200 mm UPVC ducts along cable routes at villa entrances and car-parking areas, in accordance with TAQA-D standard specifications.

g. Install LV cables in the trench in accordance with TAQA-D standard drawings.

h. Protect LV cables as required by the utility authority or developer/concerned authority and as shown on approved cross-sections.

i. Reinstate interlock tiles and kerbstones in accordance with ADM requirements.

j. Place approved filling material in layers of the thickness required by ADM standards and compact to 95% MDD.

k. Obtain inspection and approval of backfill layers from the developer/concerned authority. Install protection slabs and warning tape at the specified depths below FTL, as required by the utility authority and approved cross-sectional drawings.

l. Place 30 cm of subgrade in two 15 cm layers and compact to 30% CBR and 95% MDD, in accordance with the stated specification.

m. Place 20 cm of sub-base in two 10 cm layers and compact to 65% CBR and 98% MDD, in accordance with the stated specification.

n. Provide a 5 cm bedding layer of back sand, 3/16-inch size, above the sub-base.

o. Cut and remove existing asphalt at marked locations. Make the initial cut using an asphalt cutter saw, then use a jackhammer to break and remove the asphalt remaining within the cut lines.

NOTE: Required tests shall be conducted through the Material Quality Section of Abu Dhabi Municipality. New tiles shall match the level and colour of existing tiles. Provide dune sand over reinstated tiles and compact and level it using a plate compactor fitted with a rubber pad.

6.7 GREEN AREA REMOVAL AND REINSTATEMENT PROCEDURE

a. Obtain an NOC from the local authority.

b. Obtain the work permit.

c. Apply site safety measures, including barriers, cones, warning tape, and signboards.

d. Carry out all work under the supervision of the Connection Engineer.

e. Install one layer of polyethylene sheet on each side of the cable trench.

f. Remove plants (e.g., grass and flowers) and place them on the polyethylene sheet on the right side.

g. Keep the plants moist at all times.

h. Remove only the aggregate sand layer, approximately 20 cm thick, and place it on the polyethylene sheet on the left side.

i. Excavate the cable trench.

j. Lay the cable and backfill the trench completely, including cable tiles and warning tape, to 20 cm below FFL.

k. Reinstate the agricultural sand.

l. Reinstate the removed plants, including grass and flowers.

m. Remove all debris and clean the area.

n. Remove safety materials from the site when safe to do so.

o. Obtain approval from the developer/concerned authority for the completed work.

p. Cancel the work permit after completion and acceptance.

6.8 ASPHALT CUTTING AND REINSTATEMENT

a. Before work starts, crews shall receive a site induction covering activity-specific hazards and general site safety requirements.

b. Cut and remove existing asphalt at the marked locations.

c. Excavate trial trenches manually to identify existing utilities. Continue excavation for proposed utility crossings to the depths shown on approved drawings.

d. Transport excavated material by dump truck to the designated disposal locations.

e. Cut side slopes to the lines and ratios shown on approved drawings. Water the sides and bottom where required.

f. Compact the trench bottom using a plate compactor or roller compactor to the satisfaction and approval of the concerned Engineer.

g. Install ducts/sleeves in the trench in accordance with approved drawings.

h. Protect ducts/sleeves in accordance with utility authority requirements, the concerned Engineer's directions, and approved cross-sections.

i. Place approved filling material in layers not exceeding 25 cm and compact each layer to 95% MDD. Backfill layers shall be tested by QCC or an ADM-approved laboratory.

j. Obtain Engineer inspection and approval of backfill layers. Install protection slabs and warning tape at the specified depth in accordance with utility authority requirements and approved cross-sections.

k. After obtaining required approvals, install geotextile, geogrid, boulder material, and subgrade as shown on the approved cross-section.

l. Where required, place an approved 30–40 cm layer of boulder material after installing geotextile, in accordance with the approved cross-section.

m. Place 30 cm of subgrade in two 15 cm layers and compact to 30% CBR and 95% MDD.

n. Apply prime coat in accordance with the specification and requirements.

o. Place 20 cm of sub-base in two 10 cm layers and compact to 65% CBR and 98% MDD.

p. Place binder course where required by the approved cross-section.

q. Place a 10 cm asphalt base course and compact properly to 98%.

r. Apply tack coat in accordance with the specification and requirements.

s. Place a 5/6 cm asphalt wearing course and compact properly to 98%.

t. Remove all debris and detour arrangements from the site within two hours of completion of the work and make the area ready for traffic.

The initial asphalt cut shall be made using an asphalt cutter saw. A jackhammer shall then be used to break and remove the remaining asphalt within the cut lines.

NOTE: Required tests shall be conducted through QCC of Abu Dhabi Municipality. Where the existing asphalt layer thickness exceeds 15 cm, reinstate the asphalt to the existing thickness, as applicable.

6.8.1 UNEXPECTED UTILITY DISCOVERY

If an unidentified underground service is encountered, stop work immediately. The Site Supervisor shall:

- Secure the area.
- Prevent further excavation.
- Inform the CP/AP immediately.
- Notify the TAQA-D Representative.
- Notify the concerned utility authority, where applicable.

6.8.2 INCIDENT REPORTING

If underground services are damaged or nearly damaged, take the following actions immediately:

- Stop all work.
- Make the area safe.
- Notify TAQA-D.
- Preserve the scene.
- Do not disturb evidence unless required for safety.
- Submit an incident report in accordance with TAQA-D procedures.
- Conduct an investigation before work recommences.

6.9 CABLE LAYING

6.9.1 GENERAL

a. Install LV electrical cables in compliance with TAQA-D specification S-AAA-CAB-INST-LV (Rev. 0, 2015).

b. Obtain the appropriate PTW/work permit before starting work.

c. Inspect, handle, and store all cable drums received at the site properly.

d. Site Engineers/Supervisors shall inspect and test cable continuity and insulation before cable is taken off the drum.

e. Move all drums to cable-route locations using approved equipment.

f. QC shall witness, record, and sign off inspection checklists and test results.

g. Test equipment shall have valid calibration certificates.

h. Installation shall comply with ADWEA/TAQA-D specifications, and personnel shall be familiar with the required installation techniques.

i. Run cables on rollers in continuous lengths between approved route points, in accordance with approved shop drawings.

j. Position cable rollers at maximum intervals of 2 metres during cable pulling.

k. Arrange cable drums in accordance with the approved drum schedule for each cable route.

l. Pull cable drums/cables using the approved methodology and a suitably rated cable winch machine.

m. Ensure cable is paid off the drum in the correct direction and with sufficient drum rotation.

n. Cable entries into enclosures shall be through gland assemblies. Ensure glands are the correct type and size for the cable and suitable for the applicable hazardous-area classification, where relevant.

o. Provide mechanical protection wherever cables are temporarily laid or stored, or where routes pass through floors, to prevent damage.

p. Do not bend multicore cables below the minimum radius recommended by the manufacturer in its catalogue or relevant datasheet.

q. Maintain the minimum spacing between instrument and power cables specified by ADWEA/TAQA-D and the approved shop drawings.

6.9.2 CABLE INSTALLATION

a. Where cable drum schedules are available, the Site Supervisor shall ensure each cable length is taken from the designated drum.

b. Identify cables in accordance with engineering documents.

c. Provide cable tags in accordance with installation drawings.

d. Throughout cable pulling, the Site Supervisor shall ensure cables are protected from mechanical and physical damage. Where a cable winch is used, comply with the manufacturer's permissible pulling-tension values.

e. Limit cable pulling forces in accordance with the total conductor cross-sectional area (A) in mm^2. The stated maximum shall be A × 50 N for copper and A × 30 N for aluminium, subject to confirmation against the cable manufacturer's requirements.

f. Where instrument signal cables run parallel to power cables, maintain segregation in accordance with project specifications and drawings.

g. Where instrument cables cross power cables, arrange crossings at right angles and maintain the minimum spacing specified in the project documents.

h. Where instrument and power cables share a trench, inspect the installation to confirm separation complies with typical installation details.

i. After laying each cable length, repeat resistance and insulation-resistance tests in accordance with TAQA-D standards.

6.10 CABLE BENDING

The stated minimum bending radii are:

- Four-core copper cable: 15D.

- Four-core aluminium cable: 20D.

During installation, use larger bending radii wherever practicable. The stated minimum values apply to constrained areas, such as near joints and terminations. D represents the cable outside diameter; confirm final values with the cable manufacturer and approved specifications.

6.11 TRENCH BACKFILLING

a. After the cable surround has been placed, tested, and inspected to the satisfaction of the authority's inspector, proceed with general backfilling.

b. Use selected material previously excavated from the trench to backfill in layers. Carefully compact using hand-operated rammers up to 300 mm above the cables, or to the level indicated in approved cross-sections.

6.12 SUBSTRUCTURE BACKFILLING

a. Backfilling adjacent to a structure shall proceed only after inspection and approval by the Client Representative.

b. Use selected excavated material to backfill all sides of the structure simultaneously, maintaining approximately the same fill height.

c. Compact the backfilled material.

d. Use suitable backfill material in accordance with the specification.

6.13 CABLE CROSSING

a. At road crossings, provide separate ducts for each cable circuit plus one spare circuit in the required positions. Unless a larger size is required, ducts shall be PVC pipes with a minimum internal diameter of 200 mm and a minimum wall thickness of 5 mm. Encasing shall be in lean concrete C20, providing at least 15 cm cover to the ground and 10 cm between pipes.

b. All ducts shall be supplied in accordance with material submittals approved by the concerned authorities.

c. Provide duct markers at both the start and end of each duct installed at a road crossing.

d. Ducts shall be reinforced concrete laid on lean-concrete foundations over compacted subsoil before being embedded in dense concrete. Duct ends shall extend at least 1.0 m beyond the road or walkway limits.

e. Refer to approved drawings for road-crossing details.

f. Clean ducts and seal them with end caps or another approved method.

g. Carry out road-crossing excavation in accordance with the instructions and requirements of the concerned authorities.

h. Provide LV cable-crossing protection in accordance with approved drawings and authority requirements.

i. Fill road-crossing and HDD pipes with bentonite after power cables have been pulled in. Bentonite shall not prevent cable withdrawal in the event of cable failure. Prevent settlement of the bentonite compound and ensure heat transfer is not adversely affected throughout the cable service life.

6.14 CABLE PROTECTION TILES

Place cable cover tiles above underground electric power cables to protect them and indicate the location of buried cables. Supply and install tiles in accordance with ADWEA/TAQA-D specifications and standard drawing DWG AAA CAB 01 00 09.

6.15 WARNING TAPE

Direct-buried cables shall be provided with warning tape at least 0.3 m wide. Tape shall be marked bilingually in Arabic and English, using black letters at least 30 cm high, indicating the user name, service name, and the word “DANGER”, and shall be approved by ADWEA/TAQA-D.

6.16 ROUTE MARKER

Install cable route markers in accordance with the relevant ADWEA/TAQA-D specifications and drawings. Complete all associated reinstatement works.

7. LIST OF TOOLS AND EQUIPMENT

Site survey: Measuring tape, Global Positioning System (GPS), tripods, ranging rods, Total Station/theodolite.

Trial pits: Hand tools only, e.g., shovel.

Excavation: Pickaxe, shovel, backhoe loader, mini excavator, pneumatic jackhammer, safety barriers, safety mesh, and safety signboards.

Cable laying: Cable rollers, cable trailer, winch machine, cable drum roller, and cable-cutting machine.

Backfilling: Shovel, compactor, and backhoe loader.

8. ATTACHMENTS

Risk Assessment.

TAQA Distribution طاقة للتوزيع	FALCON Middle East	Date	09/10/2026
		Ref:	FME/D111661E/004/26
		Rev No.	03
		Page No.	Page 1 of 11
		Prepared By	QA/QC Engineer
Client :	**TAQA Distribution (TAQA-D)**		
Contractor :	**Falcon Middle East Contracting & General Maintenance**		
Project Title :	**D-111661/E, Long Term Rate Agreement for Supply and Installation of Underground Cable, Electrical Distribution Equipment, OHL and allied works in Abu Dhabi Central & Eastern Region (LOT 1).**		
Document Title :	**Method Statement for DISMANTLING & SHIFTING OF FP/ST WITH CABLES**		

METHOD STATEMENT

DISMANTLING & SHIFTING OF FP/ST WITH CABLES

Client :	**TAQA Distribution (TAQA-D)**
Contractor :	**Falcon Middle East Contracting & General Maintenance**
Project Title :	**D-111661/E, Long Term Rate Agreement for Supply and Installation of Underground Cable, Electrical Distribution Equipment, OHL and allied works in Abu Dhabi Central & Eastern Region (LOT 1).**
Document Title :	**Method Statement for DISMANTLING & SHIFTING OF FP/ST WITH CABLES**

1. DOCUMENT CONTROL

Rev.	Date	Description	Prepared by (QA/QC)	Checked by (PE)	Reviewed by (PM)	Approved by
00	11.06.24	Initial Issue	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
01	10.05.25	Review	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
02	01.09.26	Review	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
03	09.10.26	Review and updated	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
Signature						

Client :	**TAQA Distribution (TAQA-D)**
Contractor :	**Falcon Middle East Contracting & General Maintenance**
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Client :	**TAQA Distribution (TAQA-D)**
Contractor :	**Falcon Middle East Contracting & General Maintenance**
Project Title :	**D-111661/E, Long Term Rate Agreement for Supply and Installation of Underground Cable, Electrical Distribution Equipment, OHL and allied works in Abu Dhabi Central & Eastern Region (LOT 1).**
Document Title :	**Method Statement for DISMANTLING & SHIFTING OF FP/ST WITH CABLES**

1. SCOPE

This Method Statement outlines and defines the responsibilities within M/s. Falcon Middle East in coordination with TAQA for Dismantling & Shifting of FP / ST works for installation of underground cables, electrical distribution equipment, OHL, emergency and corrective maintenance and allied works in Abu Dhabi excluding ADF region Dhabi excluding ADF region

2. PURPOSE

To ensure that all information, materials, tools, equipment, manpower and adequate supervision are available during lifting and installation of TRM. And ensuring work steps area analyzed and all safety measures are taken for work to be done in a safe and timely manner.

3. DEFINITIONS

CLIENT : TAQA

CONTRACTOR :FALCON MIDDLE EAST GENERAL CONT. & MAINT.

PE : Project Engineer

PTW : Permit to Work

NOC : No Objection Certificate

PPE : Personal Protective Equipment

QA/QC : Quality Control & Quality Assurance

N/A : Not Applicable

TBT : Tool Box Talk

ITP : Inspection Test Plan

COP : Code of Practice

TCD : Traffic Control Device

MSRA : Method Statement & Risk Assessment

PTW : Permit to Work

SWL : Safe Working Limit

SSR : System Safety Rules

GSR : General Safety Rules

GR : Golden Rules

FP : Feeder Pillar

ST : Service Turret

4. RESPONSIBILITIES

a. Client / Operations are responsible for identifying any possible hazards due to operations or maintenance activities of plant and equipment in the vicinity of project site location.

b. Contractor will provide positive confirmation of all work carried out in construction works for project: D-111661/E and comply with ADWEA / TAQA specifications.

c. M/s. Falcon Middle East Gen. Contracting Co. LLC have professional employees with good experience for all installation activities and best workmanship while taking into account all required safety precautions. Project Electrical supervisor is responsible for implementing this method statement.

d. Safety Officer is the custodian of the HSE procedure, Safety Officer has to assist and monitor supervision compliance with the procedures.

e. CP & Approved Site engineers, site supervisors and the respective site team must ensure the work methodology/method statement is implemented as per requirement.

5. TOOLS & EQUIPMENTS

In general, the main equipment's to be used for the execution of project are as follows:

- Tools box
- Portable Drill machine / Grinding machine
- Hammer drill machine
- Fork Lift, Lifting crane/ Hiab and accessories.

6. SAFETY

- Falcon Middle East General Contracting supervisor shall be assigned to work full time during the complete electrical installation and shall ensure availability of a valid work permit signed by the concerned authorized operation supervisor.
- Permit to work requirements shall be reviewed and discussed at work location, prior to commencement of the work via tool box talks/ start card talks.
- PTW/LAP, MSRA shall be available at work site at all times when work is in progress.
- A job hazard analyzer shall be prepared and submitted to the TAQA Safety manager prior to starting the work and attached to the work permit.
- Every access or exit kept free from obstacles, materials, equipment, etc.
- Temporary safety sings shall be provided at all access/exit routes etc.
- All equipment/ machines shall be fitted with spark arrestors and fire arrestors and fire extinguishers are inspected and tagged by Falcon Middle East Safety Officer.
- Proper illumination of the work area and access/escape/exit areas shall be provided while working at night.

- All activities should be stopped immediately in case emergency and work permit to be revalidated before starting the activity again.
- Ensure that the work area is free from cloths, rubbish tools, wooden planks, boxes, etc. and is kept in clean and tidy manner.
- Falcon Middle East General Contracting shall maintain well housekeeping standards at all times.
- All installation and construction work shall be in compliance with project safety procedure.
- All clients approved PPE shall be made available and worn at all times.
- Barricades warning tapes signs etc. shall be posted, as per project specifications to prevent entry to unauthorized personal to working area.
- Ensure that the access way is clear and does not present any tripping hazard.
- Ensure availability of appropriate communication equipment.
- Check and verify escape routes and muster points in the vicinity of the work area.
- All lifting gear, material handling equipment, small tools etc., shall be duly certified and appropriately color coded. Ensure that all lifting gear is compatible with the weight of the panel frame to be handled.
- All lifting gear and their operators shall be third party certified and inspected before every use by competent person.
- All riggers shall be third party certified.
- Hard barriers filled with water around the excavated cable trench must be available at all times until backfilling is completed.
- Valid calibration certificates/test certificates shall be arranged at site for all machinery/equipment used at site.

- Adequate fire extinguishers and first aid kits should be available at site at all times during works in progress.

7. WORK METHODOLOGY

7.1 EXCAVATION

a. Excavation will carried out as per approved shop drawing.
b. Mechanical excavation is not permitted within 5 meters of existing services.
c. Where the proposed cables are located in areas unaffected by space restrictions and in areas of stable ground conditions an open-cut to the safe angle of response of the soil will be adopted, incidentally, the entire route of the cables in more or less in open area.
d. Excavation will be carried out the lines, grades and levels as indicated on shop drawings.
e. Equipment used for excavation will depend on the type of material to be excavated, method of hauling and site limitations.
f. Unsuitable material will be hauled away to designated disposal areas.
g. Suitable material will be stockpiled at least 1.00m away from the edge of the excavation.
h. If necessary, the bottom of the excavation will be sloped to aid dewatering.
i. Excavation will be surrounded by sand bunds, cones and warning tapes in area, which are parallel to main roads
j. All excavation will be battered/ stepped to a safe slope.
k. Final excavation to formation level will only be conducted shortly before bedding material is placed.
l. Minimum trench-width will be as required in the drawings as per standard drawing DWG AAA CAB 01 00 09.
m. Access ladders will be provided for ease of entry and exit from the excavation.
n. Inspection requests, written and verbal, will be provided to the Connection Engineer/ Inspector, for obtaining approvals at various stages as per agreed procedures.
o. The excavated sand to be kept minimum one meter away from the trench edge.
p. Adequate shoring or benching or shoring provided to prevent collapse of the pit in accordance to soil investigation report and other factors.
q. Where applicable, gas test is conducted before entering inside the confined space in accordance to ADOSH Cop0-27.0.

r. Emergency preparedness arrangements are provided and verified at work location.
s. Where applicable, proper ventilation shall be provided.
t. Proper access, illumination, fire Extinguisher, signboards, and egress arrangements proper provided on site.
u. Storage of construction materials e.g. Cable on the workplace should not be kept where they can constitute risks of injury or material damages. Such material shifted from nearby working areas e.g. trenches prior to starting trench excavations to prevent any injuries to workers

7.2 Equipment Dismantling & shifting – (FP/ST)

This method statement defines the activities involved in the execution of Dismantling &

Shifting of FP / ST with cables and summarized as follows:

- Submit request for Dead SD & plan the works accordingly
- Secure all the required permits and clearance from concerned authorities before starting the work.
- Make sure that all relevant documents such as GIS plot plans / site layouts that adequately identify locations and site reference points for the excavation are available at site before starting of any works.
- Contractor shall conduct site survey and access all the risks and required safe distances based on the guidance provided in this document, this site survey shall include identification and marking of all adjacent structures which have a chance to collide during lifting.
- Fencing around the area shall be erected before starting of any works.
- TAQA person shall be informed before any work starts.
- A lifting plan will be provided, Toolbox talks will be initiated prior to start of work.
- The contractor's competent person shall apply for the PTW using appropriate request form along with supporting documents like Risk Assessment and Method Statement.
- Environmental conditions will be considered including weather/humidity and other permissible limit.

- All possible specifications and details will be incorporated and lay down to the lifting operation plan, such as weight (i.e. SWL etc.), size, shape and center of gravity load.
- A required availability of approved lifting points on load is required and proximity hazards, obstructions, path of load will be considered.
- The swipe area of the crane should be barricaded
- Rigger should be available at all times during lifting
- All tools, instruments and equipment to be used for the job shall be in good condition, well maintained and calibrated.
- Overturning/load integrity and need for tag lines and working under suspended tools will be proposed and implemented.
- A need to install an Emergency Escape Routes or an Access will be necessary for the job.
- Suitability and condition of lifting equipment to be used will be checked, replacement will be done if found to be substandard.
- It is a must to check and verify experience, competency and training of all personnel that will do the job.
- Initial and final load positions will be marked.
- Before any lifting operation starts, check if there is conflict over live equipment and other conflicting tasks in the area.
- Pre-use inspection of equipment by operator must be carried out; number of duration of lifts will mark-up. Visibility of the load will also be considered.
- FP/ST with load of minimum 1 Ton to be lifted, mobile cranes/hiab with a capacity of 3-5 Tons will be used.
- Ensure all the lifting equipment's & tools having third party certified
- New location of FP/ST to be excavated as required & prepared for shifting.
- All cables to be dismantled from FP/ST in proper manner as per TAQA standard & HSE regulations.
- All cables to be extended or shifted (wherever required) to new location of FP/ST
- The lifting area should be barricaded and appropriate sign boards should be available.

- If any of assets belongs to other utility providers are present or founded in the area, the TAQA person in charge should be informed directly and proper protection for these services shall be done accordingly.
- After completing the lifting operation and the setting up of FP/ST in new location,
- All the cable to be connected as per the requirements
- Backfilling around the FP/ST to done & Housekeeping will be conducted and result will be shown to TAQA in-charge for any site comment and approval.
- Energization of FP/ST will be done by TAQA team.
- After completion of the above mentioned, all snag list will be done as per TAQA standards under their supervision.

7.3 Attachments

Risk assessment

Client :	**TAQA Distribution (TAQA-D)**
Contractor :	**Falcon Middle East Contracting & General Maintenance**
Project Title :	**D-111661/E, Long Term Rate Agreement for Supply and Installation of Underground Cable, Electrical Distribution Equipment, OHL and allied works in Abu Dhabi Central & Eastern Region (LOT 1).**
Document Title :	**Method Statement for TESTING AND COMMISSIONING OF TRM/QRM**

METHOD STATEMENT

TESTING AND COMMISSIONING OF TRM/QRM

Client :	**TAQA Distribution (TAQA-D)**
Contractor :	**Falcon Middle East Contracting & General Maintenance**
Project Title :	**D-111661/E, Long Term Rate Agreement for Supply and Installation of Underground Cable, Electrical Distribution Equipment, OHL and allied works in Abu Dhabi Central & Eastern Region (LOT 1).**
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1. DOCUMENT CONTROL

Rev.	Date	Description	Prepared by (QA/QC)	Checked by (PE)	Reviewed by (PM)	Approved by
00	11.06.24	Initial Issue	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
01	10.05.25	Review	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
02	01.09.26	Review	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
03	09.10.26	Review and updated	Eng. Bala	Eng. Saddam Masood	Eng. Tareq Badran	TAQA
Signature						

Client :	**TAQA Distribution (TAQA-D)**
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1.0 Purpose

The purpose of this document is to briefly explain the testing and commissioning of QRM/TRM.

The following tests shall be conducted on QRM/TRM:

2. Visual Inspection Check
3. Earth Resistance Measurement
4. Insulation Resistance Check Before and After HV Test
5. HV Test
6. CT Test
7. Secondary Injection Test
8. Primary Injection Test
9. Functional Checks
10. Earth Fault Indicator Test
11. CRM Test

2.0 Test Procedure

2.1 Visual Inspection

Visual inspection shall be conducted for the labelling, earthing, marking, and cleaning of equipment and terminals.

2.2 Earth Resistance Measurement

After installation, checks must be made on the earthing system to verify whether there is any significant change in resistance over a period of time or under different soil-moisture conditions. Such checks will indicate if the earth-electrode resistance has been exceeded due to changing soil conditions or ageing of the system.

2.3 Insulation Resistance Check Before and After HV Test

The insulation value of the busbar, together with the CB and isolators in the closed condition, shall be tested on each phase with the other two phases earthed, using an appropriate insulation tester. This is to confirm the dielectric strength of conducting parts with respect to earth and between phases.

This test shall be conducted before and after the HV test.

2.4 HV Test

This test is to confirm the withstand capability for the specified time with permissible leakage. Before carrying out the test, check that the circuit breakers are in the inserted and closed condition, the earth switch and voltage transformers are isolated, and the CT secondary circuits and HV indicators are shorted and earthed.

AC high voltage (80% of the factory-test voltage) shall then be applied to one phase of the busbar, with the other two busbars earthed, for one minute. The leakage current shall be measured and recorded. Repeat the test for the other two phases. Ensure that the equipment is discharged before carrying out any activity after the HV test.

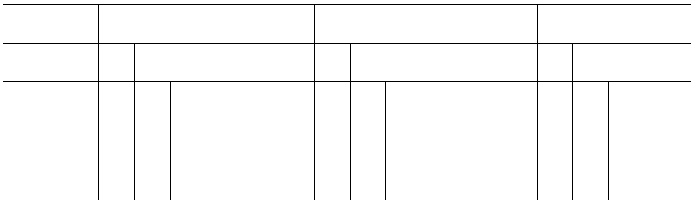


Figure 1: High Voltage Test

2.5 CT Test

The CT test includes the following:

- General inspection
- Insulation resistance test
- Ratio test and polarity check
- Winding resistance
- CT magnetising voltage

2.5.1 General Inspection

Procedure:

12. Verify that the nameplate ratings comply with the approved drawings and specifications.
13. Inspect for physical damage, defects, and mechanical condition.
14. Verify that the transformers are connected correctly in accordance with system requirements.
15. Verify that all required grounding and shorting connections are provided.
16. Verify that all shorting blocks are in the correct position, either grounded or open, as required.
17. Verify that single-point grounding of each core has been completed properly.

2.5.2 Insulation Resistance Test

The insulation resistance is measured between the secondary core and earth. The test shall be conducted as explained below.

Sl. No.	Test Combination / Test Points	Megger DC Voltage	R-Phase IR Value (Ω)	Y-Phase IR Value (Ω)	B-Phase IR Value (Ω)
1	Core to Earth	500 V			

2.5.3 Ratio Test and Polarity Check

This test ensures the CT turns ratio at all taps. The circuit connection shall be made as shown in the applicable connection diagram.

The polarity test confirms that the polarity markings on the CT primary and secondary match the drawings. It also helps establish the correct secondary connections for protection functions (such as directional and differential protection) and metering.

The test shall be carried out using a CT analyser (OMICRON), as shown in the connection diagram. An automatic report shall be generated as per the attached sample.

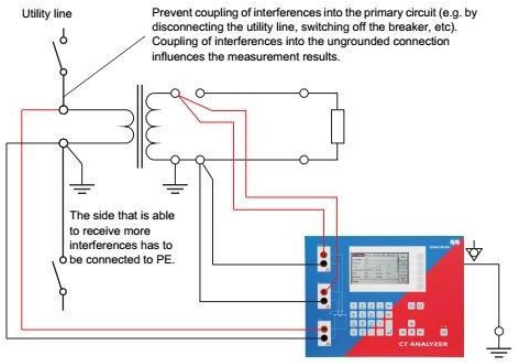


Figure 2-2 Basic wiring for a CT test

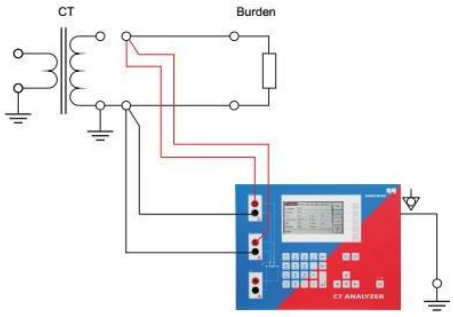


Figure 2-3 Basic wiring for a burden test

2.5.4 Winding Resistance

The secondary resistance test verifies that the CT secondary winding resistance is within the specified value and that there is no discontinuity in the winding. This value may be used in other calculations.

The test shall be carried out using a CT analyser (OMICRON), as shown in the connection diagram, and an automatic report shall be generated as per the attached sample.

2.5.5 CT Magnetising Voltage

The magnetisation-curve test confirms the CT magnetisation characteristics against the nameplate specification. This test shall be conducted before the ratio test and after the secondary-resistance and polarity tests, since residual magnetism left in the core due to DC testing (polarity and resistance) may cause additional error in the ratio test.

The circuit connection shall be made as shown in the applicable figure.

2.6 Secondary Injection (Relay) Test

This test confirms that the relay operates properly and that its operating times are within specified limits. Operating times shall be recorded after current injection, as stated in the test-report format.

2.7 Primary Injection Test

This test confirms whether the CT ratio, wiring, polarity, relay circuits, and breaker-tripping circuits are functioning correctly. Using a primary-current injection kit, first apply rated current to the CTs in two phases (R and Y), and then check the secondary current. If polarity is correct, the currents at the R and Y secondary terminals will equal the rated secondary current, while the current in neutral and the other phase wire (B phase) will be zero. Repeat for the other phases.

The current shall then be increased to the fault-current setting in the relay. The relay should trip and the corresponding circuit breaker should trip.

2.8 Functional Checks

During this test, the ON/OFF operations of the ring switch, CB, and isolator, as well as the interlocks, shall be checked in accordance with the scheme.

2.9 Earth Fault Indicator Test

This test confirms that the earth-fault CT, relay, and associated circuit operate properly. Current shall be injected gradually until the relay picks up at the set current. Check the flag operation and reset operation.

2.10 Busbar DC Contact Resistance

18. Close Ring Switch 1 and Transformer 1. Apply 100 A DC from the test kit between the R phase of Ring Switch 1 and Transformer 1, and measure the resistance. Repeat for the other phases.
19. Close Transformer 1 and Ring Switch 2. Apply 100 A DC from the test kit between the R phase of Transformer 1 and Ring Switch 2, and measure the resistance. Repeat for the other phases.
20. Close Ring Switch 2 and Transformer 2. Apply 100 A DC from the test kit between the R phase of Ring Switch 2 and Transformer 2, and measure the resistance. Repeat for the other phases.
21. Close Ring Switch 1 and Transformer 2. Apply 100 A DC from the test kit between the R phase of Ring Switch 2 and Transformer 2, and measure the resistance. Repeat for the other phases.

3.0 Reference Documents

22. Technical Specification
23. Approved Shop Drawings / Manufacturer's Drawings / Schematic Drawings
24. Approved Site Test Formats

4.0 Responsible Personnel

4.1 Competent Testing Engineer

The Testing Engineer is responsible for supervising the complete testing activities and ensuring that tests are conducted in accordance with the approved method statement and test format. The Testing Engineer shall also ensure that safety procedures are implemented and fully understood by all team members.

4.2 Electrical Supervisor

The Electrical Supervisor shall be responsible for the following activities:

- Conduct toolbox talks with the concerned workforce before starting work; this is mandatory.
- Ensure that relevant permits are applied for and obtained before commencement of work.
- Assign competent workers.
- Arrange the tools and equipment required at the worksite.
- Ensure that all workers involved have the required PPE.
- Coordinate inspection of work at every stage with the Electrical QC Inspector.
- Ensure sufficient first aiders are available with the crew.
- Ensure the team understands access-control and mustering-point requirements.
- Ensure all applicable safety regulations are followed.
- Maintain equipment-preservation requirements throughout the work.
- Report any damage to existing facilities immediately to ADDC.
- Monitor the work and crew to ensure that activities are carried out safely and without unsafe conditions.

5.0 Equipment

The following equipment is required:

- Secondary injection kit
- AC high-voltage tester
- Earth resistance tester
- Digital multimeter
- CT analyser kit
- CRM kit
- Hand tools
- HV gloves

6.0 Safety

All work shall commence in accordance with the safety regulations laid down in the contract specification and project safety plan.

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Attached : Risk Assessment