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madayn

Health Safety Security Environment Manual

@madaynoman

His Majesty Sultan Haitham Bin Tariq

CEO's Address

Dear Investors, In our ongoing commitment to develop the health, safety, security, and environmental system, which is a fundamental pillar at Madayn (The Public Establishment for Industrial Estates), we are pleased to present the latest version of the Health, Safety, Security, and Environmental (HSSE) Manual. This comprehensive guide is designed to enable factories and companies operating within our industrial cities to adhere to safety standards and implement their components effectively.

At Madayn, we are convinced that the foundation of a thriving industrial community is an unwavering commitment to health, safety, security, and environmental principles. This manual is not merely a set of guidelines but a reflection of our shared aspirations to maintain a safe and stable work environment. It embodies our commitment to the well-being of every individual and the sustainable management of our environmental resources.

As you browse through this manual, you will find the best policies and practices that are the outcome of recent research and collaboration with experts in this field. This edition includes important updates addressing emerging challenges and ensuring the latest technological advancements in safety and environmental management.

We encourage everyone to utilize the content of this manual in your factory/company operations, which will enable us to achieve a safe and sustainable working environment through your positive interaction and adherence to the established standards and procedures.

We hope everyone commits to these principles, not just as a regulatory requirement, but as a professional commitment towards our colleagues, our community, and our environment.

Thank you for your dedication in making Madayn not only a leader in industrial excellence but also a model in safety and sustainability.

Sincerely,

Dawood Salim Alhadabi

CEO

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Prepared by : Operations Sector

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Emergency Response

Introduction

1. The main purpose of developing a comprehensive emergency plan targeting at facing the crises and emergencies that the Public Establishment for Industrial Estates (Madayn) may be exposed to is to ensure readiness and preparedness to handle these crises and emergencies. This shall be carried out conforming to safety procedures and with a view to assuring the safety and security of all staff and visitors at Madayn.

Objectives of the Emergency Preparedness and Response Plan

The emergency preparedness and response plan is particularly designed for the following objectives:

- Developing the policies, procedures and organizational structures to be applied so as to prepare for emergencies expected to occur within Madayn and would cause substantial damage that may threaten life, property or the environment.
- Specifying the potential emergencies and understanding the scope of thereof (i.e. identifying the potential risks)
- Ensuring a high degree of preparedness to eradicate and control the effects of emergencies or accidents.
- Mitigating the impacts of emergencies that would affect the individuals› lives and their health and property or the environment.
- Ensuring preparedness to handle emergencies, all necessary resources and materials are allocated and the staff trained to deal with risks are available.
- Ensuring that the decisions are regularly made and in due course, as well as a quick response (i.e., forwarding notifications, following standard operating procedures (SOP), etc.).
- Ensuring that Madayn has a responsive organizational structure and well-trained staff in order to assure a timely response to any emergency.

Emergency preparedness and response plan has been prepared flexibly to cover all emergencies that may arise within Madayn and may affect the same or its surroundings.

Emergency Preparedness and Response Plan

The emergency preparedness and response plan is based upon **three main phases**, which are as follows:

1

Readiness and preparedness for emergencies.

2

Activating the role of the competent authority dealing with emergencies so that it is able to response to the same.

3

Ensuring constant monitoring and restoration of services following the emergency.

1 Procedures of Emergency Preparedness (Planning)

The concept of «preparedness» is established on the application of appropriate precautionary measures at the internal level, which aim at preventing damage to individuals, property or the environment that could be caused by any possible natural disaster events or terrorist attacks. Such precautionary measures are developed in a manner that ensures permanent protection against certain disasters or expected scenarios for emergencies. Despite it is difficult to prevent all disasters, particularly natural events, the risk of death and injuries may be reduced or mitigated through the following steps:

- Identifying the risks predicted to arise within Madayn.
- Determining physical or operational measures necessary for preventing or mitigating emergencies.
- Developing an integrated plan for health, safety and environment systems (HSE) such as the installation of alarms in all facilities in order to connect the confirmed alarm systems with those of the competent authorities dealing with emergencies.
- Conducting evacuation drills and developing the necessary training courses.
- Ensuring adequate communication with staff of the Civil Defence and Ambulance Authority, and effective planning towards responding to emergencies with a view to ensuring that all competent authorities are aware of their roles and responsibilities in respect of emergency preparedness and response.

Safety Equipment

The importance of developing the emergency preparedness and response plans rests on ensuring that Madayn is ready to handle emergencies immediately and properly, in order to ensure that people, property and the environment are not significantly affected. Furthermore, it serves to carry out a disaster recovery process in a prompt manner. The table below shows the emergency preparedness items used within Madayn:

Equipment and Recourses	Description
Emergency Control Systems and Equipment	▪ Firefighting and fire safety equipment and vehicles ▪ Emergency back-up power and lighting systems. ▪ Communication facilities
Emergency and Rescue Equipment	▪ Resuscitators ▪ First- Aid Pouches
Safety Equipment	▪ Safety shoes ▪ Safety helmets ▪ Gloves and goggles

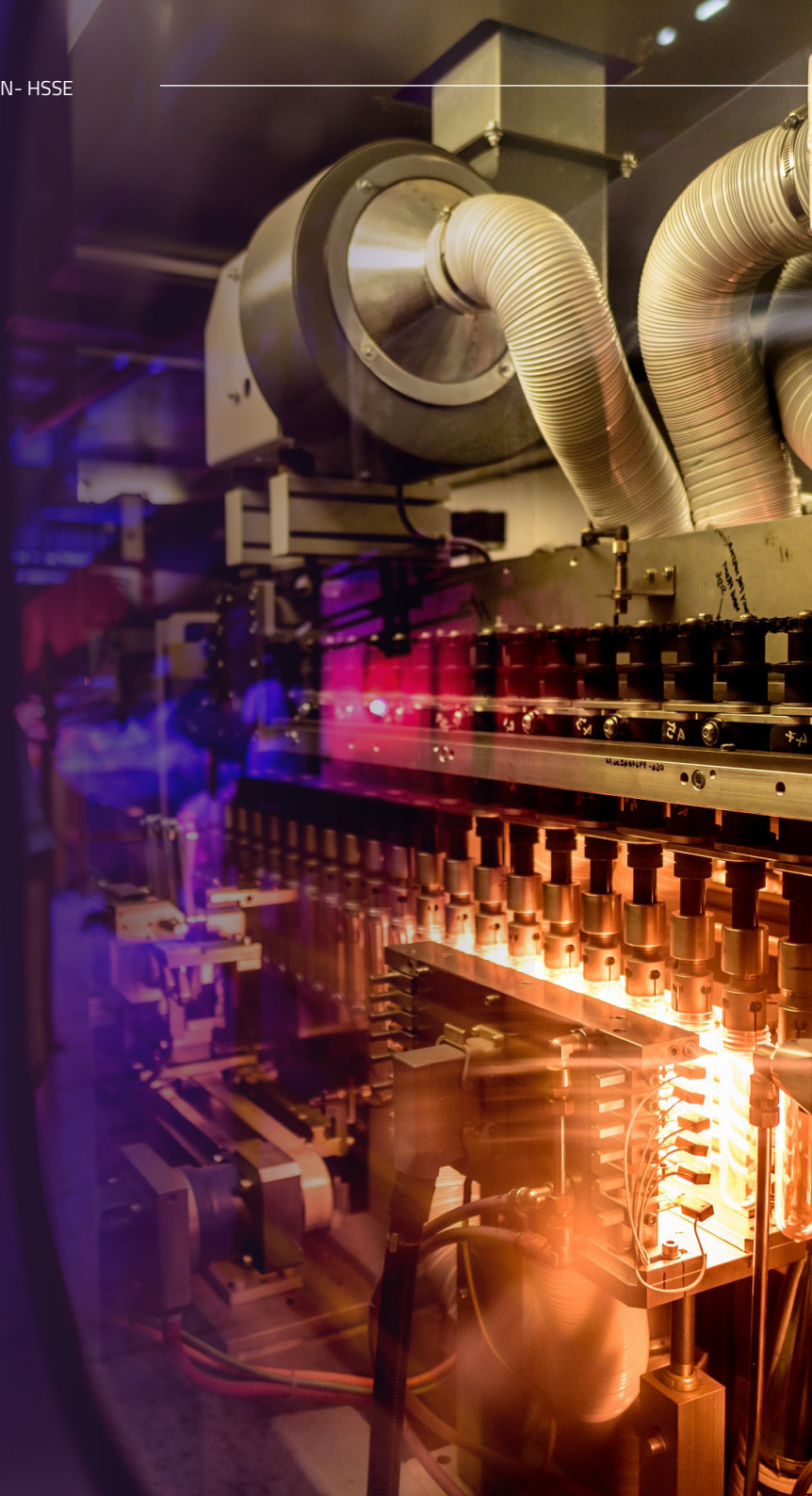
All necessary resources for emergencies shall be provided by Madayn from external entities, alongside its on-site resources. Therefore, it is essential to establish relationships with third parties so that the additional resources are procured to control potential serious incidents and its risks.

Assembly Point

During the application of the response procedures, Madayn shall pre-define an assembly point to be dedicated to the staff and visitors in the event of an emergency, according to the relevant preparedness and response plan. The assembly point may vary depending on the emergency location. Moreover, many evacuation routes and assembly points inside Madayn buildings shall be defined in the layout attached with that plan, where the concerned employees at the assembly point shall call upon the individuals who are present in the building to gather at this point.

Simulation Trainings

In order to ensure that actual emergencies are dealt with efficiently and expeditiously, simulation trainings shall be conducted every six months to operationalize the emergency preparedness and response plan, as well as making the relevant necessary amendments. Through these exercises, performance of personnel and equipment is assessed and training needs are identified. In order not to cause unnecessary panic in adjacent establishments, the occupants of the same must be notified of the implementation of such training. Additionally, periodic training is required for staff to deal with various safety equipment and emergency firefighting devices.



Competence, Training and Awareness

Madayn assumes the responsibility for ensuring the subjection of all individuals (employees, visitors, investors and contractors) to the required induction training so as to make sure they are fully aware of the emergency response plan applicable at Madayn, and they are able to fulfil their roles and responsibilities in the event of any emergency.

Given that Madayn employees are considered the front line to deal with emergencies, it shall ensure their qualifications and training on responding to such emergencies.

Mitigation measures» shall comprise assessment of potential risks which may threat health or personal property of employees, identifying procedures that shall be taken to minimize the negative effects resulting from disasters, or providing employees with insurance to protect them from any grave consequences. Preventive or mitigating measures may be applied with many forms so that various disasters can be addressed.

2 Post-emergency Procedures (Recovery phase)

After the life-threatening event is over and conducting the normal restoration and reactivation process of all emergency-affected systems, the recovery phase begins directly. Such phase includes the development of services, in addition to the preparation, implementation and coordination of site restoration plans for all affected units, areas, operations and services. The main objective of the «Recovery Phase» resides in resuming normal operations of the affected area promptly. It encompasses a number of main steps, which can be summarized as follows:

Restoration of the operations within the buildings (Rehabilitation, Refurbishment and Recovery)

Long term post-crisis and emergency response activities focus on either the reactivation of emergency-affected systems and units or the reconfiguration of these systems to renew the same and minimize their exposure to risks.

3 Post-emergency Status Assessment

Regardless of the level of emergency (whether this emergency is of level II or level III) and in order to ascertain the causes of the emergency and effectiveness of the emergency response process, Madayn is required to conduct a survey after the emergency response stage is over, and resuming the delivery of routine service. Moreover, it shall prepare records containing all information related to the accident or emergency event. On the other hand, emergency officers shall be responsible for preparing a «post-emergency report» based on that survey.

Furthermore, data of post-emergency assessment reports shall be completed immediately after the end of the emergency phase so that no events are discarded due to failure to remember their order or the passage of time. It is intended to benefit from this information in any future legal proceedings or investigations to be conducted internally, considering the accuracy and completeness of these reports so that the events can be analyzed in detail while following up on the situation following the accident.

Post-Emergency Recovery and Rehabilitation

Madayn is required to accelerate its response to the consequences of the emergency event by mobilizing its resources (individuals, funds and other assets) and utilizing its network in a coordinated manner with a view to addressing the preliminary effects and fulfilling the needs of affected individuals. It must be recalled that improvement of physical and psychological condition of survivors, recovery of the dead bodies, and restoration of basic utilities, such as water and electricity, are the primary objectives

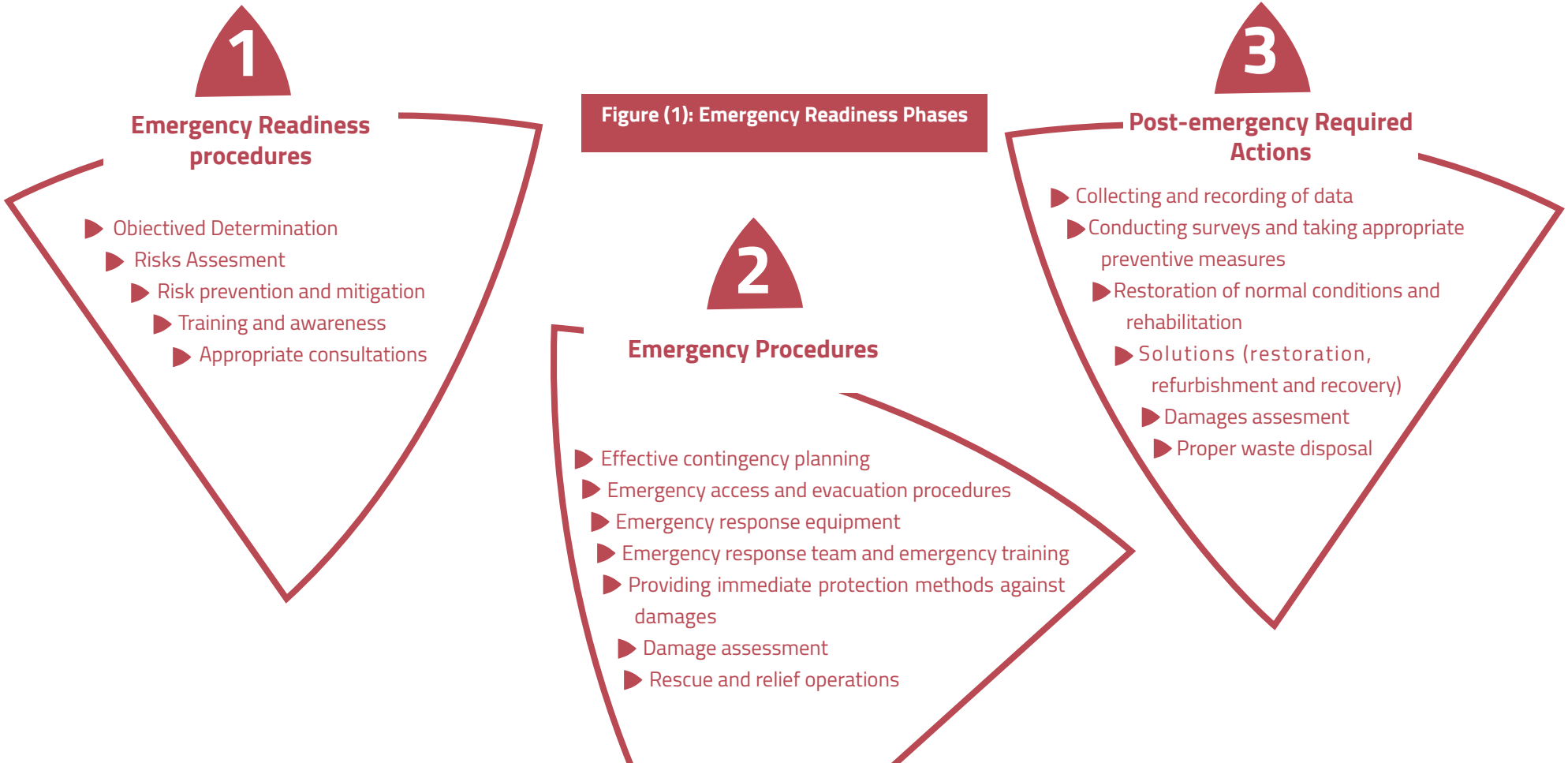


Figure (1): Emergency Readiness Phases

4.Emergency Response Levels

Emergencies are classified into three different levels to ensure the proper response without obstructing any industrial activities. Each level is described as follows:

Level I

1. Inspection, Control and Occupational Safety Department — **2. Safety Management Team**

Level I emergencies comprise minor accidents that may affect individuals, property or the environment at any location inside or outside the building without far-reaching damage. Staff have the ability to deal with such type of accidents without the need for support. It is noted that level I emergencies have little or no impact on individuals, the environment or outside the affected area.

level II

1. Madayn Emergency Committee – 2. Industrial Cities' Operations Centre headed by the Director General

Level II emergencies may affect individuals, property or the environment. These accidents are expected to affect a big part of the building. Therefore, this type may cause extensive impact or damage beyond the boundaries of Madayn building. Level II emergency falls at a time when the response procedures are out of the safety management team›s control. Therefore, urgent assistance and internal support are needed.

Level III

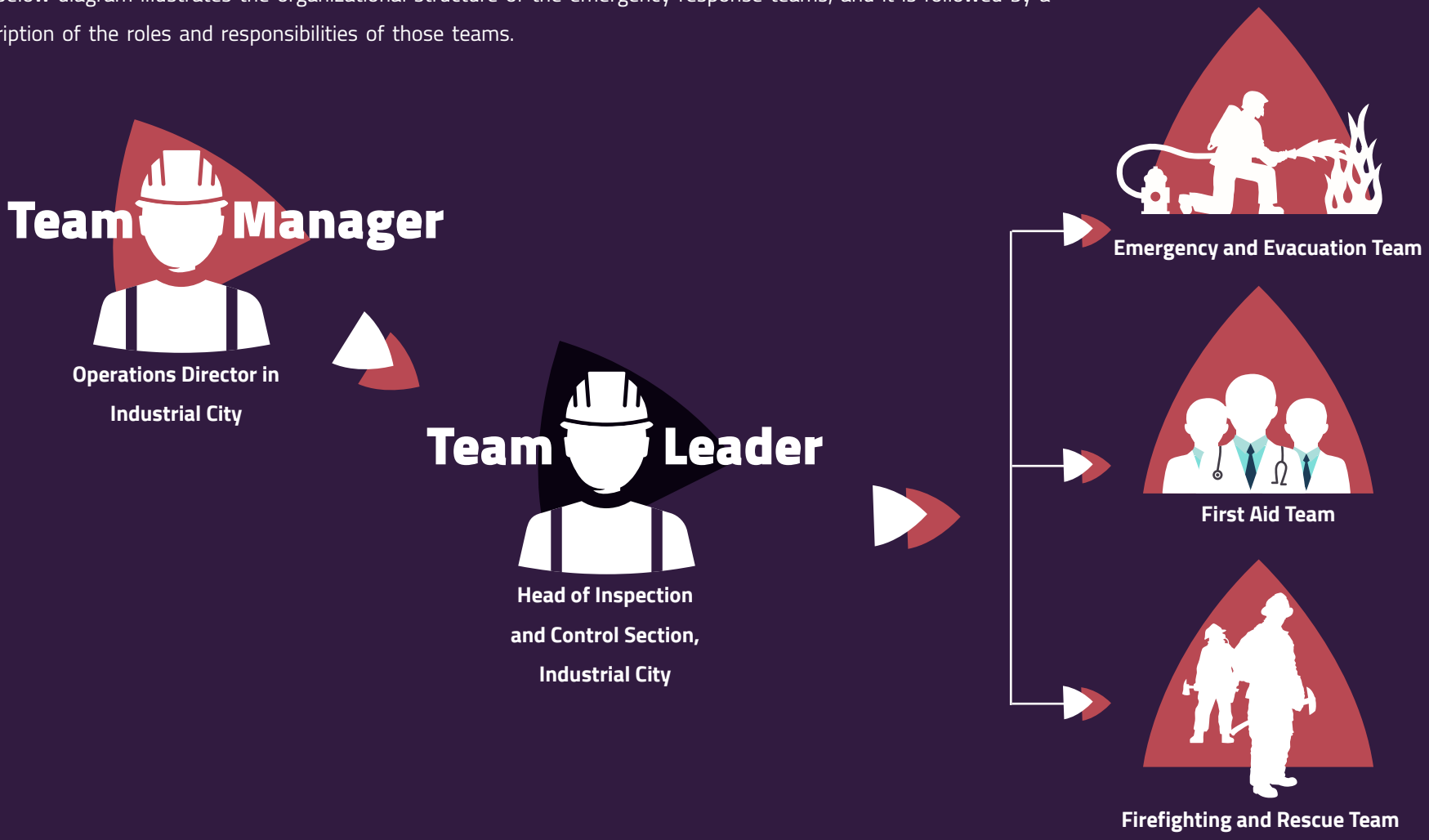
1. National Committee for Emergency Management

This level is considered the last level for emergencies. At this level, such accidents outweigh the ability of Madayn to control the same. Mostly, they are associated with the likelihood of catastrophic impacts within and around the affected area, which requires immediate intervention by the National Committee for Emergency Management. It should be noted that the effects of level III emergencies may exceed the borders of affected areas and become a national emergency.

For the purpose of ensuring an effective response to these accidents, the central communication system shall be utilized. Moreover, focal points from both Madayn and external bodies are required to be established by the Emergency Room in each industrial city, since the effective management of such type of emergencies necessitates good communication, and full cooperation and coordination among all parties.

5 Emergency Management Authority

The below diagram illustrates the organizational structure of the emergency response teams, and it is followed by a description of the roles and responsibilities of those teams.



5.1 Safety Management Team Responsibilities

Team Manager

1. Promote safety awareness among employees in the workplace.
2. Follow-up and implementation of the emergency and evacuation plan to be applied within Madayn.
3. Assess and record occupational accidents and work-related injuries.
4. Develop training programs in the field of safety and emergency handling and associated matters.
5. Hold periodical meetings and report the team's work.
6. Perform studies and research in connection to accidents and injuries management within the workplace.

Team Leader

1. Consider the nature of Madayn works and facilities to identify risks and damages expected to occur within it.
2. Ensure the provision of safety and security equipment within Madayn and maintaining the same, in addition to performing periodic inspection in accordance with civil protection requirements set by the Civil Defence and Ambulance Authority.
3. Ensure that security and safety equipment is distributed in visible locations within Madayn, so that it can be easily accessible while ensuring that illustrative posters are placed on the same.
4. Develop the emergency and evacuation plan in accordance with the respective criteria applied in the facilities, in coordination with the Civil Defence and Ambulance Authority, and follow up its implementation.
5. Ensure that signages and warning signs are set in place, in addition to making sure that emergency exits and staircases are permanently unobstructed.
6. Coordinate with the concerned staff at the Civil Defence and Ambulance Authority to identify gathering points.
7. Apply simulation training programs.
8. Ensure that corridors and emergency exits are not blocked.

Firefighting and Rescue Team

1. Be familiar with fire and rescue operations and trained on the same.
2. Respond quickly to reports, and conduct fire and rescue operations.
3. Recognize the different types of fire extinguishers within the buildings, their locations, and methods of their usage.
4. Be trained on methods of using fire extinguishers of all types.
5. Perform any other tasks assigned by the Safety Management Team.

First Aid Team

1. Be familiar with first aid methods and have training on them.
2. Provide first aid to the affected persons within the buildings during emergencies.
3. Ascertain the locations, contents and readiness of first aid boxes located in the buildings.
4. Provide the necessary support for injured people who are classified at the gathering points.
5. Participate in internal workshops, sessions and exercises.
6. Perform any other tasks assigned by the Safety Management Team.

Emergency and Evacuation Team

1. Ensure the existence of emergencies and evacuations maps.
2. Frequently ensure that passages, staircases and emergency exits are free of any obstacles.
3. Perform emergency evacuation for workers and visitors.
4. Count the number of persons evacuated to gathering points and prepare the relevant lists.
5. Use only stairs and emergency exists during evacuation operations.
6. Participate in internal workshops, sessions and exercises.
7. Have sufficient knowledge about how to deal with disabled persons during emergencies and evacuation operations.

6 Emergency Response Procedures (Application)

This section addresses the response procedures to be taken for emergencies that may occur within Madayn. These procedures can be divided into two phases. The first phase is about the emergency comprehensive management, which is essentially based on the general actions to be taken regardless of the type, level or scope of such emergency. As for the second Phase, it is exclusively for addressing a specific type of emergency response, as well as the actions to be taken by the concerned teams of implementation of «emergency preparedness and response plans', so as to confront the same.

6.1 Reporting on Emergencies

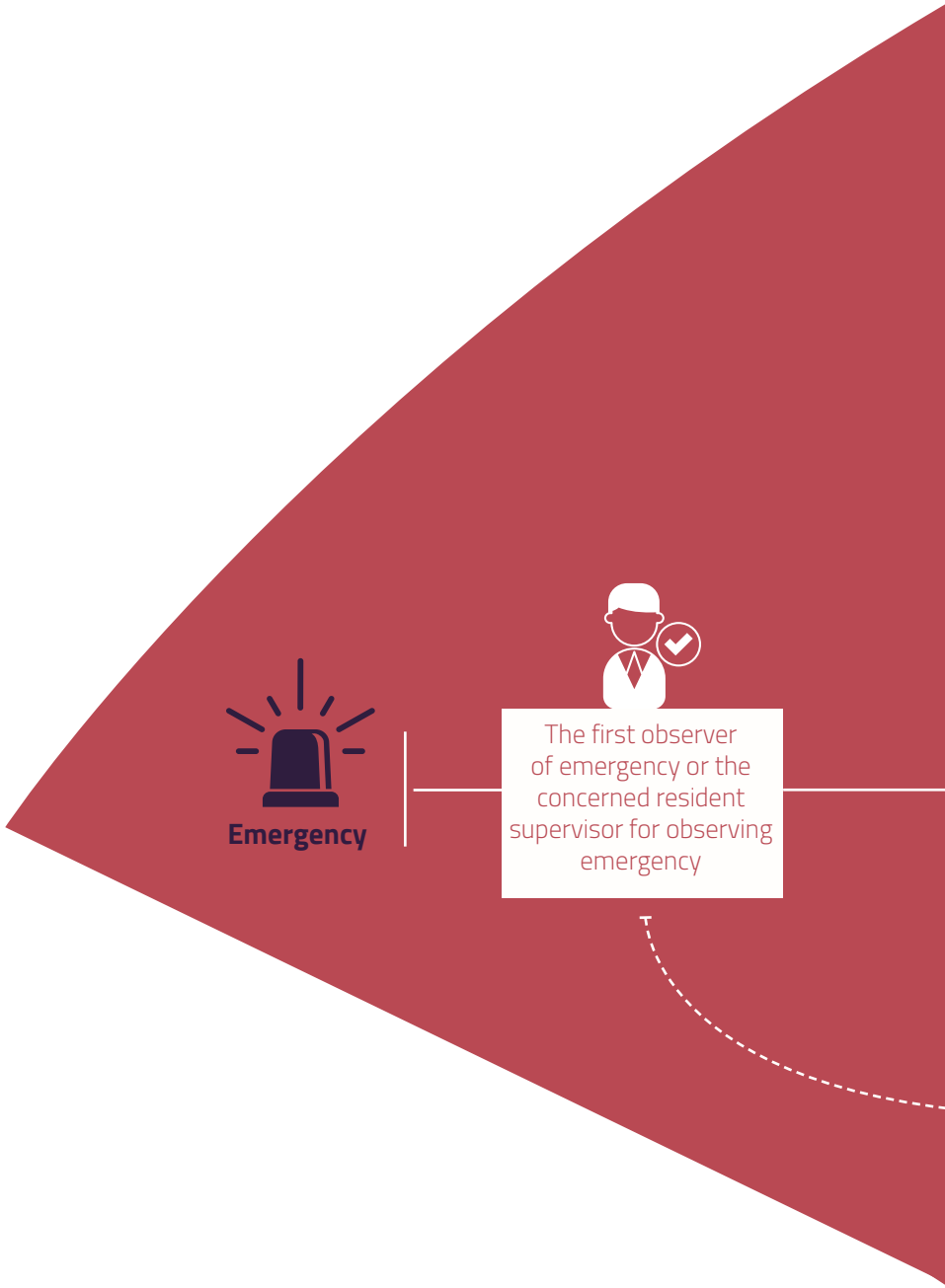
In case of detecting an emergency, the «first observer» is obliged to call the Emergency Centre on its number provided by Madayn. This observer «may be anyone within or outside Madayn. Therefore, Madayn provides a special form for reporting and recording accidents.

Figure 2: Steps of Reporting on Emergencies

6.2 Initial Actions to be taken by the Emergency Room or Emergency Officers

Upon receipt of any report, the Emergency Room shall immediately determine the type of emergency and its level. Consequently, it shall inform the competent authorities at the site and at Madayn of the emergency type so that they are able to take the appropriate actions. Among these actions, we highlight the following:

- The Emergency Room or emergency officers shall assess the situation and its seriousness. Accordingly, they are required to implement the appropriate emergency response plan in view of such assessment and its results.
- The concerned teams shall perform their mandated tasks upon receipt of emergency report from the Emergency Room.
- Alerts shall be directed to individuals located in the accident area.
- Fire shall be extinguished by using the resources available within the building.
- In the event of a level II or III emergency, the affected area shall be evacuated and the competent authorities shall be informed.



Notifying the Emergency Room about the emergency.

Emergency Call Center - 9999

Required Information
- Emergency location
- Emergency type
- Are there losses?

Can the tenant or the contractor control the emergency?

Yes

Level -1

Emergency management using internal resources

Has the emergency eased?

- Controlling matters related to waste and its disposal.
- Getting things back to normal.
- Interrogation or closure.
- Investigation or reporting.
- Revision and modification of emergency preparedness and response plans (if necessary).

No

Reporting the Emergencies Officer to call for assistance of the responsible of this specific emergency

Is there any possibility to control the emergency?

Yes

The emergency officer is required to announce that things are back to normal once the emergency ends.

Yes

Level -2

The concerned teams of implementation of "emergency preparedness and response plans'

Have mitigation measures been implemented?

No

No

Level – 3

Coordination between the emergency officer and the Civil Defence and other bodies and Governments

Assistance to Civil Defence on evacuation and rescue efforts to be provided by the emergency officer and Task Forces for the Implementation of Emergency Preparedness and Response Plans

Impact factors may differ depending on the variance of locations and processes. Hence, the importance of these factors for workers, government authorities and other stakeholders may also vary. Accordingly, the process of identifying different phased capabilities for operations may be carried out quite easily at the same location or for the same type of operation at different locations.

6.4 Emergency Response according to its Level

With the purpose of reducing the adverse effects on persons, environment and property that may occur as a result of emergencies and applying disaster recovery and business continuity measures within a reasonable period of time, Madayn or the Emergency Room shall take the following actions to respond to emergencies based on its classification:

1 Level I Emergency

- Notifying the relevant staff at Madayn on the emergency.
- Emergency status report shall be submitted by emergency officers, upon their arrival at the accident place, to the respondents.
- Verifying that emergency preparedness and response plans are developed in a manner that ensures the effective response to any emergencies.
- Ascertaining that the accident place is cordoned off.
- Evacuating all affected personnel to the gathering point, considering the type of the accident.
- Coordinating with all personnel to collect any information related to emergencies.
- Recording all relevant information about the accident and taken actions.

2 Level II Emergency

- Launching warming alarms, in addition to notifying the respective staff (both inside and outside the building).
- Ensuring the evacuation of all affected personnel and employees (excluding the emergency response team) to the designated emergency gathering point.
- Emergency status report shall be submitted by emergency officers, upon their arrival at the accident place, to the respondents.
- Contacting the relevant external authorities (e.g., the Civil Defence and Ambulance Authority, specialized subcontractors and other associated entities).
- Ensuring the lockdown of all affected units and facilities.
- In order to ensure adequate and quick response to emergencies, emergency officers shall appoint an on-site emergency controller to be responsible for coordinating with all emergency response teams.
- Notifying medical teams on the type of emergency.
- Coordinating with the tenant or the contractor to obtain all information related to emergencies.
- Recording all relevant information and taken actions.

3 Level III Emergency

- Launching warming alarms, in addition to notifying the respective staff (both inside and outside the building).
- Ensuring the evacuation of all employees from the accident area.
- Contacting the relevant external authorities (such as the Royal Oman Police, the Civil Defence, specialized subcontractors, etc.).
- Emergency status report shall be submitted by emergency officers, upon their arrival at the accident place, to the respondents.

- Given that the adverse effects of Level III emergencies may be beyond the control of Madayn, the Civil Defence shall be responsible for leading and coordinating the emergency response operations outside Madayn. On the other hand, emergency officers shall coordinate all efforts exerted within it.
- In order to ensure adequate and quick response to emergencies, emergency officers shall appoint an on-site emergency controller to be responsible for coordinating with all emergency response teams.
- Mobilizing the required relevant teams depending on the type of the accident (e.g., firefighting and rescue team, first aid team, emergency and evacuation
- team).

  Conducting rescue operations to save the lives of persons exposed to direct risk, in addition to considering survivors› physical and psychological conditions, and
- supporting them as required.
- Ensuring the lockdown of all affected units and facilities as appropriate.

  Prior to the announcement of "all-clear'' signal by blowing long warning alarms once things return to normal, the concerned officers shall be consulted.

6.5 Evacuation and Relocation Management

In the event of level II and III emergencies, all staff (including workers, visitors, and etc.) shall be evacuated from the affected area and its surroundings, and headed to the pre-designated gathering points within Madayn. A trained member of the team concerned with the implementation of the «emergency preparedness and response plans» shall also be appointed at the gathering points. He shall undertake the registration of all persons upon their arrival at the gathering point.

Depending on the type and level of the emergency, the Emergency Room and emergency officers shall determine whether or not to evacuate the affected area.

If an emergency is categorized as level II or III, several gathering points shall be identified so as to prevent the evacuees from approaching the affected area on their way to the main gathering point. It is also required to mark each gathering point with a noticeable sign with an identification number, such as the "Gathering Point'' mark.

Moreover, emergency officers shall request to count the number of employees who have been evacuated to the gathering point in a constant manner. Consequently, the competent authority shall submit the relevant reports to them.

In order to locate the individuals and receive additional instructions about the deployment of the evacuated staff, it is necessary for each gathering point

6.6 Emergency Termination

After verifying the elimination of the main cause of the emergency and the lifting of risks to people and property, emergency officers may declare the end of the emergency pursuant to the powers conferred upon them.

Prior to the commencement of any activities related to rescue operations, gathering evidences or restoration of work capacity and even though the "all-clear'' signal is launched, the team concerned with the implementation of emergency preparedness and response plans shall ensure that extreme caution is exercised upon entering the affected areas and carrying out screening of the area.

Furthermore, all established procedures pertinent to entering the affected area shall be observed. That team is also responsible for the safe re-entry to the affected area and guiding people accordingly.

7 Communication System

With the aim of ensuring an effective and timely communication during an emergency, a clear communications system shall be developed, which should consist of the following:

- Warning Alarms .
- Internal telephone network.
- Telephone guide.
- Speakers.
- Wireless communication devices.
- Call signals.

Additionally, for both internal and external communications, a list containing the equipment, its quantity, locations, types, usage limits, and performance standards shall be made available.

7.1 Internal Communications

The first observer of an emergency shall inform the Emergency Room, emergency officers and the team responsible for the implementation of emergency preparedness and response plans of the same. This team assumes the responsibility of providing the necessary information -upon its receipt- about emergency status to the emergency officer, who shall coordinate emergency response efforts in cooperation with Madayn.

Further, all team members shall be present 24/7. In case of absence of any member thereof, an updated list of their names and contact numbers shall be available at the Emergency Room in order to be accessible should their assistance be required. Their names shall also be listed as per priority order, since «respondents» are required to contact them according to that order. Should the first number do not respond, they must proceed to the next listed number, provided that the first number is recalled later and a fixed SMS stating that's there is an emergency occurred in the area shall be sent.

Serial No	Focal Point	Contact Numbers
		Office Telephone No
1	Emergency Officer (Emergency Preparedness and Response Plans)	24170700 71537907 **Inspection.Safety@madayn.om**
2	Emergency Room (Emergency Preparedness and Response Plans)	
3	Firefighting and Rescue Team and Response Plans)	
4	First Aid Team	

Table 1: Emergency Contact Numbers

Emergency officers are solely responsible for the communications regarding the termination of the emergency, or launching the "all-clear'' signal. They shall primarily ascertain the control of the emergency and ensure the safety of persons and property before declaring the emergency termination.

7.2 External Communications

Emergency officers are responsible for communicating with third parties in order to seek their assistance in the event of a level II or III emergency. Depending on the emergency and the instructions issued by these officers, Communications Department shall coordinate with Madayn and Civil Defence officials.

The on-site list of External Emergency Services and their contact numbers shall be utilized so as to notify the same upon the occurrence of an emergency. Additionally, all concerned authorities s uch as the Civil Defence (the authority responsible for deploying fire trucks and brigades), the police, medical facilities and other authorities (such as the Center for Emergency Management and labour inspection staff) shall be informed immediately. Information on the status of emergency shall be made available to the above-mentioned authorities and bodies so that they are able to provide the necessary assistance.

Focal Point	Contact Numbers	
	Office Telephone No.	Notice
Madayn Communications Team	24170700 71537907 9999 **Inspection.Safety@madayn.om**	Due to the multiple locations of industrial cities across the various governorates of the Sultanate of Oman, the emergency numbers for Madayn and the Royal Oman Police have been listed.
Civil Defence		
Royal Oman Police		
Hospitals		

Table (2): List of mobile or office telephone numbers of the staff members who shall be contacted.

8 Operations Control

In order to ensure the effective implementation of the contingency plan›s policy and objectives, a set of controls must be established. These controls are developed to ensure that all necessary equipment and resources are accessible, fully maintained, and ready for use at any time. In this regard, the following measures are required to be taken:

- Continuously maintaining and distributing the relevant HSE documents and manuals.
- Ensuring that the resources to be used in emergencies are not stored in danger zones, and they are placed in accessible locations.
- Verifying the validity date of perishable materials (such as batteries), as well as their spare parts.
- Replacement of consumables (such as foam and neutralizing agents).
- Providing new staff with the necessary induction trainings and personal protectiveequipment.

8.1 External Resources

For Madayn to better prepare and be ready for emergency and to ensure early warnings to its staff, it shall coordinate with the "Directorate General of Meteorology" so that it becomes aware of any foreseeable natural emergencies, such as heavy rains, rough sea waves, etc.

In order to obtain the necessary assistance during emergencies, Madayn shall conclude agreements with third parties, including but not limited to, the Royal Oman Police, the Civil Defence, fire brigades and medical care facilities. On the other hand, Madayn shall provide those third parties with a copy of the emergency preparedness and response plan, in addition to consulting them throughout the entire contingency planning process.

The intervention of Government and other entities in emergencies is based on the emergency level and its potential consequences. Thus, in order to ensure that all parties clearly understand each group›s roles and responsibilities at the time of the emergency, adequate consultation with those entities is. required. Moreover, Madayn shall execute formal partnership agreements with the aforementioned third parties. These agreements shall stipulate all aspects of cooperation between Madayn and the specified third parties, including details of assistance to be provided on a case-by-case basis

9 Actions to be taken following the Termination of Emergency

Post-emergency activities are not carried out just for a quick and efficient restoration of the normal operations at Madayn building or the area where the emergency occurred, but they also involve the assessment and investigation of emergency response. This is with a view to identifying ways to mitigate the future impacts of such emergencies or the associated areas of improvement.

Therefore, when investigating accidents, it is essential to define the roles, responsibilities, and duties of all staff members.

The following matters shall also be considered:

- Performing official investigations (e.g., investigations conducted by the police, firefighting services, or coroners).
- Recording evidences for investigations.
- Consulting Madayn staff, the Royal Oman Police, firefighting authorities and any other third parties concerned with emergency response, in addition to obtaining the necessary information from them.
- Emergency-specific legal responsibilities which shall be reported to the relevant authorities
- Investigation activities shall focus on determining opportunities to boost the effectiveness of the emergency response plan. These activities shall include the following points as detailed below:
    1. Analyzing the causes and factors leading to the accident.

2. Actions taken to mitigate its effects.
3. Precautions implemented to prevent its recurrence.
4. Effectiveness of current emergency procedures and the lessons learned.
5. Any available data which is considered important to assess the potential long-term impacts on Madayn, society and the environment.

- Taking the necessary measures to alert residents, communities, and other adjacent areas at the project site, including specific warning alarms and public address
- systems.

  Maintaining data of key entities at the site, the headquarters and other adjacent residential and commercial establishments which are likely to be affected by emergencies in order to communicate with them in anticipation of any emergency. Such data shall be updated as appropriate.

Chapter II

Health, Safety and Environment (HSE)

INVESTOR MANUAL

1 Purpose

The HSE Investor MANUAL is designed based on the HSE Requirements developed by the Public Establishment for Industrial Estates in line with MADAYN HSE Policy, Vision and Objectives. The purpose of this MANUAL is to provide recommendations and guidance to investors on demonstrating, documenting and continuing to improve their HSE performance by aligning their respective businesses. These recommendations and guidance ensuring the occupational health and safety for their employees and contractors / subcontractors, securing their assets, saving costs and complying with all applicable HSE legislation, demonstrating their commitment to further improving performance as well as helping to improve communication with employees, organizations, investors, contractors, subcontractors and other stakeholders.

Moreover, Investor shall comply with the 'Legal Legislation Manual' of MADAYN, which includes the legislation and regulations in force in industrial cities as well as the health, safety, environment and construction standards related to the place of residence of employees. The investor shall also be familiar with the 'Public Health and Safety Requirements» of MADAYN, which deals with construction and safety directives within the boundaries of the industrial city.

MADAYN provides its customers / investors with basic infrastructure such as roads, electricity, effluent treatment plant, waste collection stations, etc. This is in addition to providing land in all its areas in order to facilitate the growth of industries and reduce their effects on the environment and its risks related to the health and safety of employees of MADAYN and its customers. MADAYN is responsible for complying with legal regulations and adhering to its activities and carrying out its responsibilities and business within its territory in a manner that does not harm the environment and local communities, ensuring the health and safety of its employees, investors, subcontractors and visitors. Thus, MADAYN provides a leading example to be followed in all its industrial areas with regard to compliance and accountability for health, safety and environmental practices. MADAYN also aims to develop, implement and adhere to a comprehensive health, safety and environmental management system in all cities to protect its stakeholders from all types of pollution, risks and accidents in the workplace as well as to secure its assets.

2 HSE Policy

MADAYN›s HSE policy provides a comprehensive view developed by senior management of its commitment to protecting the occupational health and safety for its employees and stakeholders in all its regions in the Sultanate of Oman.

Moreover, this policy assists in setting HSE related management goals, objectives and programs to ensure minimum impact of activities and operations in the areas of MADAYN and encourages continuous

improvement of performance.

Investors are required to prepare their HSE policy in a manner that is consistent with ISO 14001 and OHSAS 18001 as well as the Corporate HSE Policy developed by MADAYN, which shall be imposed on the contractors and subcontractors as well. The purpose of the HSE Policy is to set out the obligations required towards:

- Prevention of pollution, ill health and injuries.
- Complying with all other applicable legal and contractual requirements in relation to HSE.
- Determine and review HSE goals and objectives periodically.
- Continue improving HSE performance.
- Informing all employees, contractors, visitors and other relevant stakeholders of the HSE Policy.
- Training, educating, preparing and providing their employees with the required information so as to ensure the promotion of HSE culture of among them as well as raising their level of awareness thereof.

2.1 Requirements

Investors are encouraged to define and document the HSE Policy within their operations and facilities in order to comply with the following:

- Identifying, managing and controlling their environmental impacts.
- Identifying, managing and controlling occupational risks.
- Ensuring compliance with all relevant HSE legal requirements.
- Conserving natural resources.
- Awareness, participation and conduct of HSE trainings and consultations.
- The necessity of ensuring that all the contractors and subcontractors appointed by them have been pre-qualified by the responsible department in MADAYN.

Investors are further encouraged to implement, monitor and continuously improve the HSE Policy, as well as ensuring that their subcontractors comply with this Policy.

It is proposed that investors apply the HSE policy and/ or specific HSE performance requirements to the work of their contractors and subcontractors by:

- Include them in the documents of the concluded contracts.
- HSE guidelines for their subcontractors.
- Influencing contractors regarding understanding of the policy and knowledge of objectives in line with policy commitments.

In addition, investors are encouraged to develop and document specific policies such as energy policy, water policy, employee relationship in workplace policy (human factors engineering and working conditions), contractor policy, and waste management policy, etc.

3 Roles, Responsibilities, Consequences and Powers

3.1 HSE Committee

Each investor shall establish an HSE Committee or equivalent (depending on the size and type of facility and relevant regulatory requirements). Below are some important recommendations relevant to the HSE Committee:

- The team shall consist of senior management and individuals with HSE-related responsibilities (committees established shall also meet regulatory requirements as applicable).
- The roles, responsibilities, consequences and powers of this team

shall be clearly defined, documented and communicated within the operational limits of investors.

- The Committee shall hold periodic meetings to consider the establishment›s performance and operation in relation to HSE matters.
- The team shall commit to submit a HSE Performance Report to the MADAYN HSE coordinating point as required, and in accordance with performance monitoring, management review and/ or continuous improvement requirements.

3.2 HSE Committee Responsibilities

- Investors shall appoint a manager who shall have full responsibilities and consequences in relation to the implementation of HSE practices and ensure that routine HSE performance checks (including contractors and subcontractors) are carried out. Such manager shall act as a point of contact with MADAYN, in addition to being responsible for reporting to MADAYN on HSE performance as required.
- Investors shall appoint competent persons with responsibility for managing HSE matters on a day-to-day basis. The designated persons shall be responsible for ensuring continuous compliance with the policies of MADAYN and the requirements of HSE.
- It is the responsibility of the Committee to develop, implement and promote HSE policies that meet the requirements of MADAYN Policy and its Public Health and Safety Requirements.
- Senior Investor Managers shall be responsible and accountable for the implementation and enhancement of management systems on the HSE matters.
- Senior Investor Managers shall be responsible and accountable for the establishment and effective implementation of certain actions related to HSE matters; as applicable (e.g., actions related to contractor management, occupational health and safety risk management etc., waste management, pest control and cleaning activities).

4 Recognition of Occupational Hazards

4.1 Studies related to Occupational Hazards and Risks

Investors shall prepare and maintain an updated version of the Hazard Identification and Occupational Risk Assessment or a similar assessment study.

conduct a hazard identification and risk assessment or equivalent assessment meeting the requirements of MADAYN HSE Procedures Manual.

The overall objective of the hazard identification and risk assessment study is to adhere to and follow the investor management road map to contribute to reducing the number of accidents and incidents to zero.

The procedure or process for hazard identification and risk assessment or any equivalent assessment study shall include, at a minimum, the following:

- **Hazard Identification and Risk Assessment Study:** Identifying, establishing, implementing and enhancing investor processes and/ or procedures for identifying occupational health and safety risks as well as assessing risks based on a work safety analysis or a comprehensive hazard or risk assessment using established methodologies such as hazard identification study and risk assessment.
- **Hazard Identification and Risk Assessment Study:**Identifying,

establishing, implementing and enhancing investor processes and/ or procedures for identifying occupational health and safety risks as well as assessing risks based on a work safety analysis or a comprehensive hazard or risk assessment using established methodologies such as hazard identification study and risk assessment.

- **Hazard Prevention and Control:** As a general approach, investor management shall ensure that HSM planning includes the adoption of a structured and coordinated approach to the prevention and control of physical, chemical, biological and radiological hazards related to health and safety.
- **Risk Mitigation Measures:** As part of the risk management process, investor management shall ensure that risk assessments are conducted by qualified and experienced professionals, as well as a comprehensive risk assessment taking into account political, economic, legal, military and social developments, any forms and causes of violence and the potential for future conflicts, by region
- **Risk Mitigation Measures:** The Investor management shall take all reasonable precautions to protect the safety of employees, contractors, subcontractors, workers and third parties affected by work activities, within its operational perimeters, introducing preventive measures (preferably avoiding risks and impacts rather than minimizing them) in the following order of priority:
    1. Eliminating hazards by deleting the activity from operations.
    2. Controlling the source of hazards through the use of an engineering control mechanism.
    3. Reducing risk by designing safe systems of work and structured control measures.
    4. Providing appropriate Personal Protective Equipment (PPE) in conjunction with continuous training, use and maintenance. The operational management shall control and monitor the provision and use of PPE.

5 Legal Requirements

MADAYN is subject to a range of statutory / regulatory and other mandatory contractual requirements, which relate to HSE issues. Regulatory or mandatory requirements may be stipulated in laws, regulations or standards / guidelines, which confer regulatory status under legislation, and may be enacted at the local, regional, governmental, national or international level.

MADAYN may also be subject to compliance with ‹other› requirements relevant to HSE issues. These requirements may apply at the local, regional, governmental, national or international level, as well. ‘Other’ requirements may include (but are not limited to):

- Contractual obligations to provide specific equipment for the protection and safety of the Contractor.
- Adherence to MADAYN HSE Policy.

5.1 Recognize the Applicable Requirements

Investors shall develop and implement procedures to identify all other relevant regulatory, legal and mandatory requirements, which relate to Investors HSE

issues. These procedures vary according to the nature of Investors work, and shall include (but not limited) the following:

- Reviewing the licensing and permit requirements of the concerned authorities.
- Reviewing regulatory / legal obligations including guidelines and standards, where appropriate.
- Reviewing recognized standards and code of practice signed by MADAYN at the corporate level.
- Organizing workshops involving operators and staff who are aware of applicable regulatory and other requirements.
- Conducting management and stakeholder surveys to identify other contractual or mandatory requirements.

Investors shall identify the employees who are responsible for determining all relevant regulatory, legal and other requirements. Personnel entrusted with this responsibility shall have the appropriate competencies necessary to identify, understand and interpret the relevant requirements that apply or may apply to its operations. These procedures shall also be applied on contractors and subcontractors.

5.2 Meet Current Applicable Requirements

Investors shall identify employees who need to obtain information relevant to regulatory, legal and other requirements in relation to their activities and work mechanisms. Assigned staff (e.g. HSE Manager and HSE Engineers) need to meet a wide range of regulatory requirements while others only

need to have special requirements depending on the role and responsibilities of individuals in the HSE team (e.g. a person handling hazardous chemicals may need to have Material Safety Data Sheets 'MSDS').

Some key considerations are set out below: Investors shall establish a method to ensure that the relevant personnel actually obtain the current and full version of the relevant regulatory, legal and other requirements. The process of obtaining information becomes very easy in an appropriate way. Such requirement is not met if workers have to search for information off-site.

- Investors shall apply the necessary procedures to ensure that information relevant to applicable regulatory, legal and other requirements is kept up to date.
- Investors shall conduct consultations with other investors or MADAYN (if necessary, regarding the requirements that have been reviewed and may apply to industrial cities).
- Investors shall ensure the implementation of monitoring and reviewing process for regulatory requirements and other future requirements that may apply to or affect the operations of MADAYN, as well as tracking and implementing these requirements as appropriate to ensure compliance.

6 Goals, Objectives and Programs

In order to drive improved HSE performance within investors operational boundaries, all MADAYN investors shall follow the requirements listed below in relation to setting goals and objectives and associated management.

6.1 Miscellaneous Requirements

In compliance with the applicable HSE Policy of MADAYN and to demonstrate adherence to this Procedures Manual, investors shall identify and document realistic and measurable goals and objectives as well as design and implement management programs to achieve them (to include contractors and subcontractors).

The following are some of the key considerations that investors shall keep in mind while setting relevant management objectives and programs:

- Objectives and goals shall be developed and aligned (or coordinated) with MADAYN›s HSE policies and framework for HSE including the HSE Procedure Manual and other MADAYN›s objectives and goals as well as other guidance documents.
- Objectives and goals shall take into account the results of the OHS risk assessment to be undertaken by investors to operate their business and facilities as well as the effectiveness of existing control measures. On developing goals and objectives, the financial, operational, technological and commercial constraints of MADAYN shall be taken into account.
- All MADAYN investors shall set and manage their own goals and objectives relevant to their operations. In addition, they shall ensure that these goals and objectives are aligned and designed to grant support in relation to the achievement of MADAYN›s goals and objectives. Goals and objectives shall also be aligned with the activities of contractors and subcontractors. If any contractor has to play any role to achieve a certain goal, he shall be informed of his role and given all support in order to achieve it.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7 Monitoring Operations

In order to ensure that processes, support activities, products and services relevant to investors are carried out in line with the objectives of the existing HSE Management System, operational processes / procedures should be monitored and status control systems should be put in place. These processes and activities shall be planned in a manner that meets the requirements of the Site HSE Management System including the objectives, purposes, management programs and HSE Policy.

The requirements for monitoring standard operational processes / procedure are listed below:

- Investors shall identify processes and activities associated with significant aspects or unacceptable risks that warrant consideration of available monitoring systems.
- Investors decide, based on their experience, whether documented operational control procedures are required.
- Investors shall ensure that documented operational monitoring is basically conducted for:
  1. Completing HSE objectives and programs in order to monitor and maintain performance.
  2. Goods and services procured to reduce environmental impacts or occupational health and safety risks.
  3. Activities assigned to contractors.
- Investors may decide whether to carry out operational monitoring procedures in coordination or in any other way such as, dos and don›ts, single-point lesson, image display or putting up signs.
- Investors shall review and approve the operational monitoring procedures performed by the department heads.
- Operational monitoring procedures shall include detailed HSE instructions to carry out and support any activities. Operational monitoring procedures shall be formed of a set of instructions that can be understood by any ordinary person to do any work.
- Operational monitoring procedures shall indicate the key operating standards that are critical to monitoring that process and set limits to these standards where appropriate.
- The Procurement Department shall establish, document and Inform the operational monitoring procedure / list to all suppliers whose supply or delivery of goods may have environmental or occupational health and safety risks.
- The required records shall be kept in accordance with the operational monitoring procedures of the concerned departments.
- Operational monitoring procedures shall provide necessary cross-references to other relevant procedures as appropriate.
- The Section Head shall prepare and observe operational monitor procedures applicable to Contract Personnel working in critical areas.
- Monitoring of operations shall include, but not be limited to, the following:

7.1 Pollution Prevention

During operations, Investors shall avoid the release of pollutants into

the environment (including air, water and land) during routine, non-routine and emergency/accidental activities. In the event that emissions cannot be avoided, the intensity and flow of emissions should be reduced or controlled.

7.2 Health and Safety Practices

Investors shall ensure compliance with all OSH practices and procedures of the HSE Policy, guidelines and requirements as stated in the HSE Beneficiary Update Service Procedure Manual, which shall be shared with Investors.

7.3 Equipment Safety

Investors shall identify, assess and minimize risks and damages related to shifts and transportation of equipment through the application of agreed monitoring and controls which shall include all preventive measures (e.g., guards, safety barriers, etc.…). Such preventive measures shall be designed and installed in accordance with appropriate standards for the safety of machinery and equipment.

7.4 Electrical Safety

Investors shall identify the risks and damages caused by fixed electrical wires and portable devices (disposal of defective or exposed electrical wires) as well as evaluating and reducing them. In addition, Investors shall ensure that rooms with high-voltage equipment are marked with warning signs ("Electrical Hazard") and that access to them is monitored and controlled. Furthermore, the management of MADAYN shall ensure that all electrical equipment is designed so that it can be isolated "Turned Off" while performing maintenance.

7.5 Working at Height

Investors shall have a safe working system to identify, assess and reduce risks and damages related to work at heights, which shall include fall prevention measures (e.g., fixed guardrails), so far as is necessary and practicable, preferably using fall prevention means (such as belts) or means of reducing its effects (such as inflatable pillows). In all cases, Investors shall ensure that their employees and the contractor›s employees are fully aware of the risk of working at height.

7.6 Special Hazardous Environments

Investors shall ensure whether the Permit to Work System is required for activities with potential risks, and measures are applied to eliminate the presence and adverse effects of such activities so far as is reasonably practicable. Activities with potential risks are listed below, but are not limited to:

- Use of high-voltage power lines.
- Use of pressure valves, tanks and piping systems.
- Work at height (e.g., roofs).
- Work in confined spaces.
- Welding Works such as welding, cutting and heating.
- Work on or passing through water surfaces.

7.7 Air quality:

In order to comply with the relevant emission limits, set by the Ministry of Environment and Climate Affairs, Investors shall identify and manage airborne emissions from identified sources, fugitive emissions, mobile and stationary sources, and from process activities related to combustion and storage of materials and other sources related to their activities.

7.8 Water and Wastewater Quality

Investors shall identify and manage wastewater discharges in compliance with relevant local regulations regarding surface water discharge, sewage systems, land use for disposal of treated effluent and inland sewage systems.

7.9 Hazardous Substances

In order to reduce hazardous substances emissions or their impact on the environment and human health, Investors shall ensure that hazardous substances are used, stored, handled, transported and disposed of in a safe manner. In case of being unable to do so, they shall try to reduce uncontrolled emissions. To prevent the catastrophic release of toxic, flammable, reactive or explosive substances into the environment and affect the health and safety of individuals and other stakeholders, including investors and other communities, local, regional or international limits and controls shall be observed during the handling or storage of hazardous substances, and appropriate risk management plans shall be developed. Moreover, investors shall try to reduce the use of hazardous substances or use less hazardous alternatives in current operations or in planned projects. It is prohibited for investor to manufacture, purchase, store or use hazardous substances prohibited in the Sultanate of Oman, and they shall abide by the ministerial decisions and laws related to the handling and storing of hazardous substances.

7.10 Hazardous and Non-Hazardous Wastes

In order to reduce the hazardous and non-hazardous wastes emissions or their impact on the environment and human health, investors shall ensure that hazardous and non-hazardous wastes are used, stored, handled, transported and disposed of in a safe manner. Moreover, they shall ensure and provide ways to reduce the amount of waste generated by adopting the hierarchy of its management (avoiding waste generation, reducing its quantity, reusing or recycling), so that the necessary action is determined, tracked and implemented when necessary, through the application of practical and technical adjustments and the reducing off-site waste disposal.

7.11 Surrounding Environment Noise and Dust

The Investor shall ensure that the noise and dust caused by the activities are managed and controlled in an effective manner, in compliance with local Omani standards, and so as not to affect neighboring investors and the environment of surrounding communities outside the boundaries of MADAYN.

7.12 Driving and Vehicle Safety

To ensure that safe measures are applied while driving, the investor shall identify, assess and try to reduce the risks and hazards in connection with mobility, for example, commuting to and from the workplace; moving while operating project equipment or machinery on public or private roads, and trying to use some tools such as vehicle monitoring systems so that they can be monitored and tracked.

8 Investigation of Accidents, Non-Conformities and Corrective & Preventive Actions

8.1 Requirements

- All accidents and near misses detected by the investor and the contractor shall be investigated. An analysis of their root causes shall be carried out, as well. In addition, the investor shall check such step.
- The results of the investigation and the actions that the investor decides to take shall be recorded, with the results of the investigation and the actions taken communicated to all relevant employees. The investor shall also inform the legal authorities, if necessary.

  Non-conformance observed during HSEMS implementation are inferred by:

  1. Monitoring and measuring key characteristics.
  2. Monitoring cases of non-compliance with operational control procedures.
  3. Reviewing emergency preparedness and response plan.
  4. Reviewing complaints filed by the concerned parties.
- The investor shall ensure that non-conformities are checked and analyzed.
- The investor shall develop the action plan based on the size of

the impact, specifying the responsibility and timeframe needed to implement the corrective and preventive actions.

- The investor shall ensure that the necessary amendments are made to the documented procedures as a result of the implementation of the corrective and preventive actions.
- The effectiveness of the corrective and preventive actions taken by the relevant officials of the investor shall be monitored. After having duly ascertained their effectiveness, actions record and related documents with details of the amendments made shall be kept.

responsible for compliance with the laws and regulations of the relevant governmental authorities in the Sultanate of Oman, and MADAYN disclaims responsibility for such matter.

- MADAYN's public health and safety requirements and other work-related regulations shall be complied with.
- All contractors working for or on behalf of MADAYN shall comply with the 'Public Health and Safety Requirements' issued by MADAYN, which summarize the health, safety and environmental expectations at the site. Such requirements should be made available to each contractor

CONTRACTORS MANUAL

1 Introduction

The purpose of issuing this manual is to assist all contractors, working within the boundaries of industrial zones, in the preparation and effective implementation of HSE programs in compliance with its regulations, goals and objectives.

1.1 Contractual and Legal Obligation

- The requirements imposed by MADAYN must be adhered to in conjunction with all applicable laws and regulations. Contractors are

at the introduction meeting to the public health and safety requirements of MADAYN held with investors, contractors and subcontractors.

- The contractor shall bear responsibility for adhering to 'Legislation Manual' of MADAYN, which clarifies all legislation and regulations applicable within industrial cities, in addition to clarifying all health and safety standards and construction standards for employees› accommodation. In addition, the contractor shall be aware of ‹Building Regulations› under which construction and safety guidelines within the boundaries of the Industrial City are clarified.
- All contractors working for or on behalf of MADAYN or its investors shall prepare, approve and implement their health and safety programs in accordance with the requirements of this manual. It shall be noted that the violation of such guidelines stipulated in this document is considered a violation of the provisions of the contract concluded with MADAYN and the contractor or the investor.

2 HSE

2.1 Contractors Program

As part of the health and safety familiarization process, the health and safety team shall explain the requirements to MADAYN stakeholders, investors, contractors, subcontractors and visitors. Furthermore, the regulation shall be available once requested by the health and safety team.

The 'Contractors Department' shall bear the responsibility for circulating the requirements to all employees and contractors, working in MADAYN of various grades, as well as explaining such requirements to them, and ensuring that they are duly implemented.

2.2 Program Outline

Contractors are responsible for ensuring that their HSE program includes the following:

- Providing HSE advice and consultation at all levels of the organization.
- Project HSE Organizational Structure.
- The method of ensuring the availability of special technical resources in HSE field.
- Clarifying how to prepare training programs on issues related to HSE, imposing their requirements, and clarifying the way to adhere to them, as well.
- As part of the risk mitigation and management strategy by identifying and assessing risks, emerging risks and impacts should be continuously assessed. Besides preparing implementation plans.
- The method that ensures the implementation of the HSE program.
- Follow up and circulate information related to HSE requirements stipulated in local requirements.
- The method to support MADAYN›s emergency response plans and procedures.
- Clarifying a communication plan in order to be able to periodically and regularly submit HSE performance reports, inspection reports, accidents investigation reports, etc.
- The method of notifying MADAYN of unsafe conditions or hazards and their significant effects on HSE.

2.3.1 Procedures

- Contractors shall submit to MADAYN their profiles and notify MADAYN before proceeding to carry out any work within its industrial boundaries.
- Once the contractors' profiles have been accepted, they shall submit the HSE Regulation and Program prior to being assigned the works, and then submit a detailed plan of the relevant site prior to commencing their work.
- Contractors shall bear the responsibility of performing periodic follow-up, monitoring and analysis during and after the work stages.
- Contractors shall submit a post-performance audit report of the Works. (Refer to the diagram below).

2.3.3 Figure (3): Emergency classification

Contractors shall submit their applications after completing the lists of their profiles.

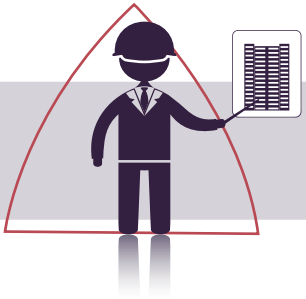
Compliance with public health and safety requirements shall be evaluated upon completion of tasks as well as reviewing business performance

HSE regulations shall be periodically followed up

The Contractor shall not be added to the list of contractors in case the list of works is not approved

The works shall be carried out in accordance with the terms of the general health and safety requirements set by the Contractor. Such terms shall be in line with the applicable public health and safety regulations of MADAYN

The investor shall train and guide the contractor

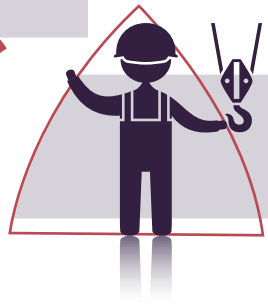


The Contracting Officer and the HSE Specialist are responsible for reviewing previous documents

The contractor awarded the tender shall submit the safety program for the HSE procedures of the works and the tasks assigned to him

'MADAYN or Investors' shall tender the tasks.

Contracting Officer shall prepare a list of main contractors



The contracting officer shall prepare a list of bidders to take over the tasks according to the type of service provided

2.3.2 HSE Documents

Contractors shall keep the following documents on site:

- A Copy of the Main Contract.
- Evidence that the Contractor›s employee's resident is in the form stipulated in the regulations referred to in the MADAYN's 'Legislation Manual'.
- A copy of the applicable MADAYN's HSE Manual (i.e., this document).
- HSE Organizational Structure (applicable at site).
- Training records stating that all employees are aware of the scope of works agreed between MADAYN and the contractor, which also proves that they have received appropriate training in accordance with the requirements of this manual.
- Copies of all HSE forms to be completed by the Contractor prior to or during the commencement of his works (e.g., work permits etc.).
- HSE Management Plans issued for the site that are in compliance with this Manual.
- Accident reports related to the project along with their investigation documents.
- Emergency preparedness and response plan, which includes:
  1. The overall scope and objectives of the Emergency Preparedness and Response Plan.
  2. Names and numbers of important emergency contacts .
  3. A list of all actual and potential emergencies.
  4. Preparedness and response plan for each emergency.
  5. The roles and responsibilities of the emergency teams that form the organizational structure of the facility.
  6. How to communicate and related systems.
  7. Emergency preparedness and response facilities and equipment.
  8. Training and awareness programs.
  9. Simulated firefighting plans.

3 Roles, Responsibilities, Powers and Accountabilities

The Contractor shall bear the responsibility for protecting the health and ensuring the safety of all his employees besides protecting the environment that may be affected by their activities at the sites of the Public Establishment for Industrial Estates. To achieve this, all contractors and subcontractors shall apply the HSE requirements and program in compliance with the requirements of MADAYN HSE Manual. Moreover, the contractor shall prepare and adhere to a regulation for HSE, provided that this regulation includes the following data:

- Adherence to the HSE Regulation and its goals.
- Management accountability method.
- Employee accountable method.
- How employees are trained.

3.1 Contractor and Subcontractor HSE Management Employees

Contractors shall appoint and assign a project site supervisor who shall bear the responsibility for HSE matters related to the Contractor 's work:

HSE Department employees are responsible for:

- Determine the general procedures needed to implement HSE related plans.
- Prepare and implement an on-site HSE communication system to ensure that all employees working for contractors and subcontractors are aware of HSE requirements and practices.
- Conduct periodic HSE site assessments, risk assessments and inspections.
- Follow up and report monthly to the competent MADAYN team at the HSE Department. Such reports shall include the compatibility of the project 's HSE requirements with its requirements for MADAYN and the one contained in the regulations.
- Initiate corrective actions, when required, regarding the violation reported and the observations made by the competent MADAYN team at HSE Department.
- Establish systems to ensure that all procedures identified during regular inspections, accidents investigations and safety communications are followed up until they are completed.
- Providing the necessary training and information to the project employees and subcontractors on the activities and inspections
- Regarding compliance with regulations regarding HSE legislation.
- Provide project employees with information regarding on-site emergency response procedures and plans.
- Holding health and safety meetings and accidents investigations as well as preparing reports, conduct follow-ups, and participate in all of these matters.

3.2 Application of Public Health and Safety Requirements

3.2.1 Follow up the Application of Public Health and Safety Requirements

MADAYN shall monitor and evaluate the effectiveness of the public health and safety requirements applied by contractors and investors with the aim of meeting the requirements of the obligations contained in the requirements applied by MADAYN, and their compliance with legal and other requirements, as well as with the aim of enabling them to report the main stages of their operations and activities that affect HSE directly within MADAYN. The follow-up process includes, but is not limited to:

- Recording observations in order to follow up the effectiveness of the relevant operational controls and to be able to know the extent to which these controls comply with the regulations applied by contractors and their goals and objectives.
- Examination and verification of evaluation and follow-up devices and their records.
- Follow up the effectiveness of controls.
- Follow up on poor health conditions, accidents and other evidence of violation of occupational health and safety regulations.

3.2.2 Accidents Reporting and Investigation

- The Contractor shall bear the responsibility for establishing the mechanism of procedures to be followed for reporting near misses, as well as training his employees in the application of this mechanism.

- The Contractor 's HSE Supervisor shall compile these accidents, analyse the cause of their occurrence, and then take appropriate action to mitigate the effects of such accidents.
- Action shall be taken to prevent the same accidents from recurring in the future.
- Commitment to record all accidents in the accident register.
- The accidents record shall be sent to MADAYN, indicating the corrective actions and preventive measures that need to be taken.
- Submit monthly reports to MADAYN on contractors› performance in relation to HSE fields.
- Submit annual reports.

3.2.3 Violation of Corrective and Preventive procedures

- Violation of HSE management systems is evidenced by:
  1. Monitoring and measuring key characteristics.
  2. Violation of work instructions.
  3. Internal Audit and Management Review.
  4. Reviewing emergency preparedness and response Plan.
  5. Complaints received from the concerned parties.
- Cases of violation shall be recorded and evaluated then corrective action shall be taken for these cases as soon as they are investigated and the reasons for their commission determined.
- Preventive measures shall include measures or changes in processes or activities that are likely to have contributed to the occurrence of violations.

The relevant accident and the reasons or factors contributing to the occurrence of the violation case shall be evaluated and included in the risk assessment, and such accidents shall include near misses and complaints, etc.

4 Environmental aspects

4.1 Waste Management

Contractors shall bear the responsibility to prepare and develop comprehensive waste management plans for all waste generated from their activities so that hazardous and non-hazardous solid and liquid waste can be managed, and so that the solid waste management plan clearly indicates the source of waste (including during spills) and the method of collection, as well as how it is stored, treated, recycled and disposed of.

Only approved and licensed suppliers of MADAYN shall be used for waste disposal, provided that waste recycling plans shall be submitted to the Corporation before the start of service.

4.1.1 Non-hazardous waste

This waste category includes household waste (mainly food waste) and commercial waste; waste left over from construction work and small pieces of metal and wood, as well as non-hazardous boxes or containers used during operation.

4.1.2 Hazardous Waste

Hazardous wastes are defined as wastes that have hazardous properties, as these wastes may harm man's health, life or the environment. Accordingly, the necessary permits and approvals for hazardous waste management shall be obtained from the competent authorities.

4.1.3 Waste Classification

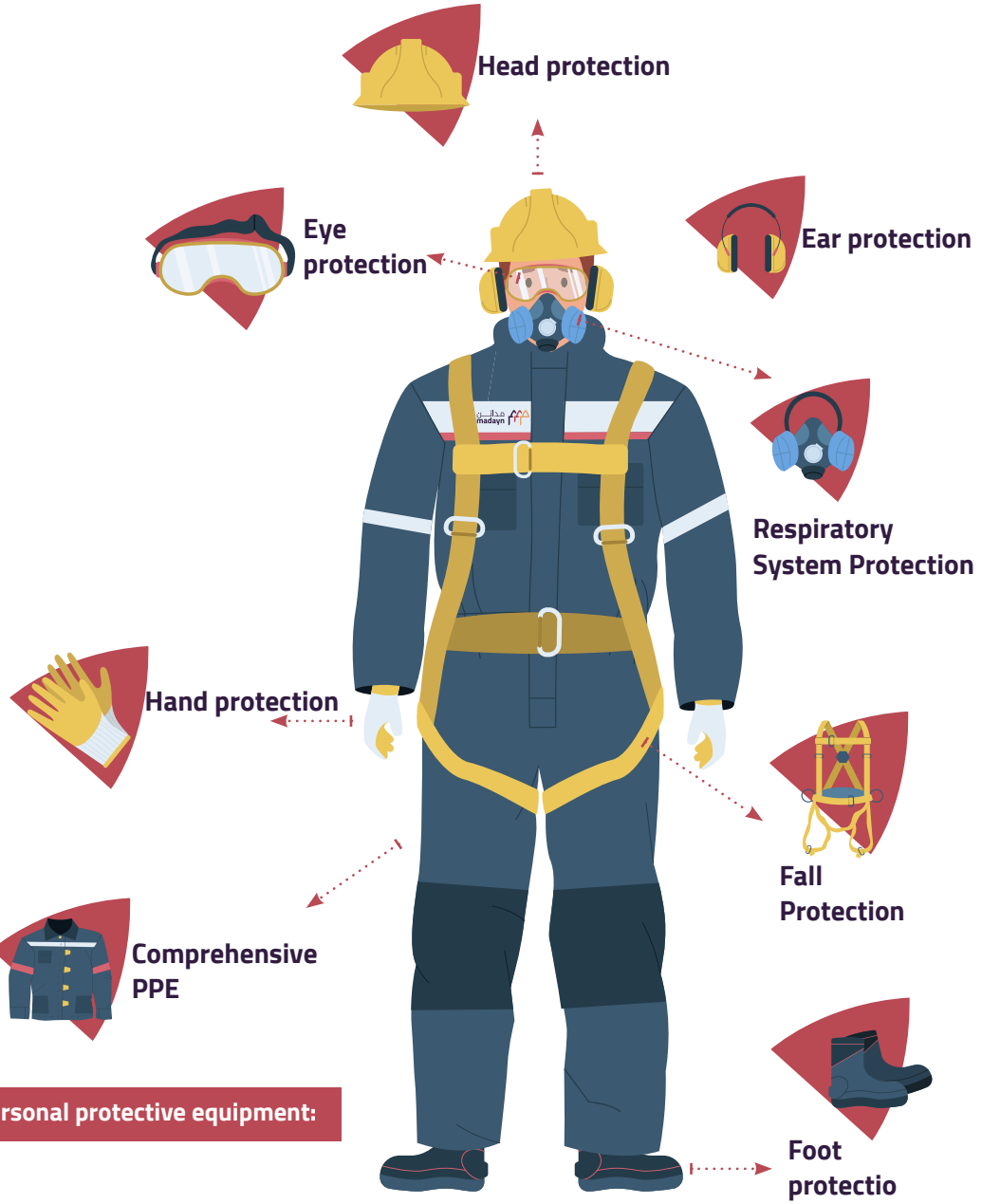
It is necessary to classify waste according to its type and the quantities left over from hazardous and non-hazardous waste, specifying the quantities of waste estimated to be generated in the waste management plan, as well as the amount of waste actually left over and recorded during the activities of contractors. The responsibility of the Contractor and the Investor to determine the quantities of waste actually left behind shall be included in the HSE reports submitted monthly to MADAYN indicating the necessary details related to the procedures for collecting, storing, recycling and disposing of such waste.

5 Work Instructions

This section outlines the work instructions, such as health and safety guidelines, issued to MADAYN contractors for their compliance, and refers the details of the work instructions to the attached appendixes.

5.1 Personal Protective Equipment (PPE)

Personal protective equipment (PPE) consists of protective clothing, helmets, goggles, or other clothing or equipment specifically designed to protect the body of the wearer from injury or illness. The purpose of wearing PPE is to reduce the exposure of employees to hazards while working in a hazardous work environment.



(3) shows personal protective equipment:

5.1.1 Safety Helmet (Head Protection)

- The helmet shall be inspected before and after each use, to ensure that it is sound on all sides and usable. In case of uncertainty, HSE personnel shall be consulted.
- All contractors at the worksite shall wear a non-metallic safety helmet.
- The chin strap in the helmet shall be made of a non-irritating, sweat-resistant material that does not cause skin diseases.
- A helmet with the hanger set at the end of the head shall always be worn.
- The size of the safety helmet shall be adjusted to the size of the worker 's head in order to provide adequate protection for the worker.
- The helmets shall be cleaned, washed with soap and water regularly as well as the necessity to be disposed of after any breakage, severe damage or exposure to high temperatures.
- The safety helmet shall be sound and free from defects. If damaged and, then they shall be marked as "defective'' and replaced or disposed of.
- Colour codes shall be added or labelled on safety helmets in order to be able to identify different individuals such as HSE team, engineers, workers, etc.

5.1.2 Gloves (Hand Protection)

- Appropriate hand gloves shall be used to give the required protection when handling various materials, metal welding and concrete, grinding and gas welding, using and handling chemicals and with electrical work (e.g. rubber insulated gloves, chrome leather gloves, leather cotton gloves, plastic gloves, etc.).
- Hand and arm shall be protected in order to protect workers from possible injuries such as thermal and chemical burns, bruises, cuts, electric shocks and absorption of chemicals through contact with skin.
- Gloves that have been produced for use but have not already been used shall be kept in their containers or in a place where they are not subjected to mechanical or chemical damage.
- In order to ensure that gloves are free from severe defects or damage (such as holes, cracks, bubbles, tears, the presence of foreign materials, the possibility of water penetration, puncture marks, voids (trapped air), protruding ripples, and signs of mold, such gloves shall be examined visually from the inside and outside before using them.

5.1.3 Protective Goggles

- Eyeglasses do not adequately protect. Therefore, goggles that fit comfortably into prescription glasses shall be used without conflicting with each other.
- In order to protect the eyes, face, forehead and front of the neck, a transparent mask supported in front of the face shall be used.
- Protective eyewear shall be suitable for the eyes or face so that it can prevent particles from entering the eyes. Such protective eyewear shall be tight enough to prevent it from falling, and at the same time, it shall be comfortable.
- Scratched, punctured, broken, bent or unsuitable glasses shall be

replaced, as damaged glasses blur vision as well as not provide the necessary protection.

- Eye shields are to be replaced when they are crooked and inflexible or their headband is torn not to cause the goggles to be unable to fit properly.
- Poor weather conditions and ventilation of the goggles can cause their lenses to fog. Therefore, they shall be disinfected and cleaned frequently.
- Eye and face protection equipment that has been previously used shall be disinfected before being made available for use by another employee.
- If protective equipment is intended for prolonged use by employees, the appliance shall be cleaned and sanitized regularly.
- Items shall be placed in clean, dust-resistant containers, such as a plastic box, bag, or envelope, to protect them until reuse.

5.1.4 Ear Protection Plugs

- Earplugs shall be used to seal the ear canal, as they may be performed (fabricated) or moldable (foam earplugs). Earplugs are produced in disposable shapes or reusable plugs.
- The earplugs are soft, comfortable and unobtrusively protect hearing, and are recommended for use in moderate noise situations.
- Earplugs are preferably worn when exposed to continuous noise.
- For extra protection, earplugs can be used with earmuffs.
- The earmuff consists of a sound-relieving material and soft earmuffs attached around the ear coated with a hard outer layer held together by a bond. This protector is an ideal choice for users who need to protect their ear from intermittent noise.
- Earmuffs are recommended for people who do not wish to wear earplugs, as well as during conditions where people move in and out of noise more often during their workday.
- Earmuffs shall be inspected by ensuring that the noise intensity is mitigated once worn correctly.
- Earmuffs shall be stored flat and away from high temperature areas or where there is excessive dust, dirt or moisture.
- Water and mild soap are required to clean the ear pad, pillows or plastic components when necessary, using solvents shall be avoided, as well.
- Earplugs shall always be worn to close the ear canal. Once worn, it shall be checked for effectiveness by speaking loudly, as it shall sound far away, as if you were talking inside a barrel. Ambient noise shall not seem as loud as before wearing the plugs.
- The earplug is gently pulled out; it shall not be loose. If the earplug moves easily, it shall be removed and reinserted deeper into the ear canal, provided that 1\4 of the earplug is outside the ear.
- The effectiveness of the plug shall be checked frequently during the period of wearing the earplugs. Whenever necessary, the area of hazardous noise shall be left and reset to ensure its effectiveness, as if the plugs become unset, then their ability to protect against noise will be reduced.

5.1.5 Body Protective Equipment

All employees shall wear appropriate clothing for the work to be carried out, as long trousers, shirts with sleeves and strong work shoes, in addition to adhering to the following requirements:

- Appropriate body protection shall be adhered to by wearing coats, and specialized workers shall wear aprons according to the type of activities. Persons working near moving machinery shall be ware of clothing and body parts sticking in the vicinity of such machinery.
  Clothing soiled with grease, paint, diluents, solvents, fuel, or similar materials shall not be worn.

5.2.6 Foot protection equipment

At least regular, long and sturdy work shoes are required. In addition, the following requirements, if any, shall be adhered to:

- Safety boots with a solid head and steel plate that they can be used at all times on construction sites especially while working with heavy equipment, rock boring machines, pavement breakers or activities involving a risk of foot injury.
- Safety shoes shall be inspected and ensure that they are not worn out before each time they may be used.
- Additional equipment shall be worn to protect foot, i.e. wear a shin guard, metatarsal guards, etc. This equipment shall be worn at any time. The work can create additional risks and possible injury to the foot, lower leg or ankle.

STAFF RESIDENCE INSTRUCTION MANUAL

1 Introduction

This Manual sets out the minimum requirements expected to be required for the construction of residence facilities for Staff within industrial areas. These Manual shall be read and consideration in the light of the provisions of Chapter No. (II) of «MADAYN» Legislation Manual, dealing with the description of the item « Staff Residence » .

2 Scope

This document applies to all investors and their nominated contractors and consultants, as well as to existing landlords in such areas who encourage the retroactive implementation of these requirements in order to improve their housing regulations.

3 Legal Requirements

landlords shall bear the responsibility for obtaining all necessary approvals and permits from the concerned authorities for the construction and operation of residential facilities.

4 Emergency Situations

Landlords shall undertake to ensure that all facilities are equipped to ensure that relevant emergency response measures are in place and that risk assessments are considered and documented for all possible incident scenarios, including EOC, equipment, signs and disaster reporting procedures as well as comprehensive resident identification, etc.

5 Applicable Principles

Each residence facility shall have the following components that help raise the standard of living:

- Adequacy Residence
- Easy access to the kitchen and dining halls.
- Privacy.
- Comfort.
- Security.
- Health
- Safety.
- Benefits
- Freedom in the workplace and leisure.
- Provide all means that make them feel at home.
- Sense of community.

6 Violation of this manual

If this manual is violated, then the facility is considered insufficiently qualified for housing and operation. Therefore, this violation shall be rectified and corrected within the time period agreed upon between the operator and the representative of MADAYN.

7 Design of Residence Facilities

The landlord shall comply, at a minimum, with the following:

7.1 Access to Residence:

The entrances to the residential facility shall be separated from the investment sector area, but it shall be allowed to pass through the gates of MADAYN. Such process shall be done in accordance with the controls organized between the two parties.

7.2 Location of the Residence:

In order to ensure that the risks to the resident, and the impacts that may result from the sensitivity of the local environment and neighboring communities, are controlled to the extent practicable, the location of the residential facility shall be equipped.

7.3 Location of the Building and Passage through the Corridors

It is necessary that:

- Construct all living facilities using appropriate materials, besides keeping them in good condition clean and free from rubbish.
  Consider the local climate and seasonal changes, in order to benefit from light, ventilation and heat gain or loss during the design and orientation of buildings and windows.
- Building living units in a way that highlights the aesthetic aspects and encourages social interaction.
- Setting up the layout of the corridor to ensure that sleeping or resting guests are not disturbed.
- Equipping the entrance to the residence with an external door that is resistant to weathering and door closure.
- Provide adequate lighting.

7.4 Noise Exposure Restrictions:

Buildings shall be provided with sound attenuation insulators through the selection of materials and systems that help reduce background noise levels in accordance with all applicable Omani laws and regulations.

8 Living Quarters and Sanitation Facilities

The landlord shall, at a minimum, ensure that the following items are verified and complied with:

8.1 Miscellaneous Requirements

- Providing amenities and entertainment facilities commensurate with the needs of the residents of the residential facility.
- Residents shall be protected from humidity, wind and sand factors.
- Pests in recently approved buildings shall be duly controlled.
- It is forbidden to prepare or cook food in places designated for sleeping.
- Sanitation facilities and latrines shall be maintained in good working condition.

- In order to ensure that facilities comply with health and safety standards at all times, Schedule inspections or HSE audits at a certain frequency.

8.2 Requirements for Bedrooms and Living Rooms

- The living rooms for men shall be separated from those for women.
- The height of the floor of the building shall not be less than 20 cm from the level of the outer perimeter.
- The area allocated to each resident shall be 4 square meters for the room, provided that this is commensurate with the design of the building, considering the need to provide additional space in the living unit allocated for certain considerations such as the placement of shoe cabinets, the height of the ceiling, the size of the corridors, storage space, and recreational facilities.
- A separated bed for each worker during day or night shifts shall be provided (alternating bed sharing is not allowed).
- Each worker shall be have one cupboard, provided that the workers share common public furniture (tables and chairs).
- All rooms shall be provided with sufficient natural lighting units and artificial lighting.
- All doors and windows shall be lockable.
- The facility shall be equipped with air conditioning.
- Provide a separate storage space for work shoes and other PPE, as well as a dedicated drying area.
- To prevent the entry of pests, the floor shall be covered with a suitable internal floor material.
- The living unit shall be ventilated and cleaned regularly and kept it in good condition, as well.

8.3 Requirements for Water Supply and Storage Facilities

- Providing clean and free drinking water to workers at all times, in accordance with local standards.
- Inspecting and testing of drinking water quality on a monthly basis.
- Providing cold water in public buildings and food halls.
- Providing a water tank with sufficient capacity, so that drinking water can be kept for at least 48 hours.
- Cleaning water tanks once a year.

8.4 Requirements for Sanitation Facilities

- Provide sufficient privacy, by building wall partitions from the ceiling to the floor, as well as lockable doors.
- It is prohibited for men and women to share any sanitation facilities and toilets.
- Keeping the floors of the shower facilities non-slippery, and building them of hard materials that are easy to wash resistant to moisture, as well as making sure that water is drained according to the correct manner to be followed.
- Providing shower cabins with lockable doors.
- Providing sufficient space for hanging, drying and ventilation of clothing.
- Proper lighting and ventilation shall be provided.
- Providing shower and toilet facilities with adequate cold and hot running water supply.

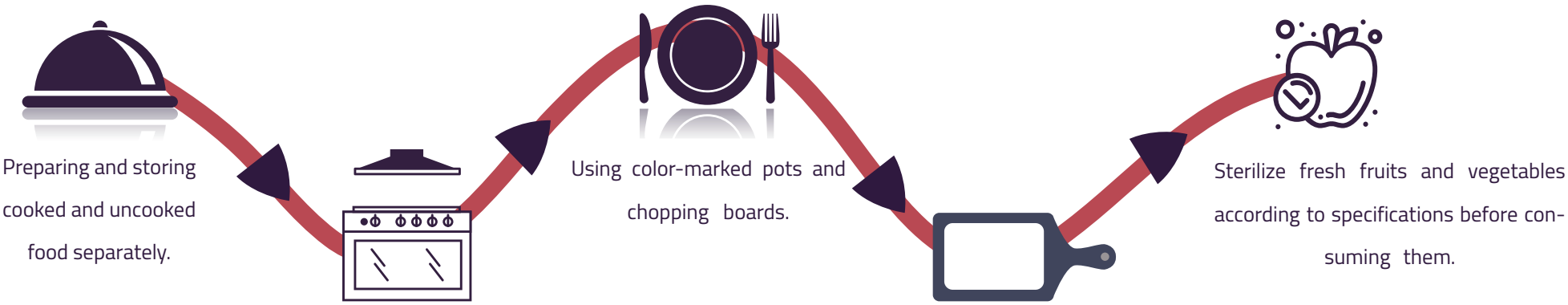
8.5 Requirements for Pest Control

- Pest eradication, vector control and decontamination of all living, dining and kitchen facilities, in line with local requirements and good practice. The spread of such pests and vectors shall be monitored periodically.
- Using pesticides or spraying them monthly in a way that prevents a negative impact on both the resident and the kitchen.
- Selecting pesticide handlers from trained technicians, obliging them to use the right PPE, or using an approved pest control service provider.

9 Ensuring Food Security And Safety

The landlord shall undertake to ensure that, at a minimum, the following requirements regarding food security and safety are followed:

9.1 Preventing The Spread Of Pollution



Preparing and storing cooked and uncooked food separately.

Equipping the kitchen interior with tables made of stainless steel only (wooden tables will not be allowed).

Using color-marked pots and chopping boards.

Using high-quality polypropylene chopping boards when cutting meat, fish and chicken.

Sterilize fresh fruits and vegetables according to specifications before consuming them.

9.2 Storage

- All food items shall be stored in a suitable well-lit room equipped with air conditioning, as well as labelling them with expiry dates.
- Storing food to ensure proper stock rotation on a "first in, first out'' basis.
- Adjust cold storage as per HACCP standards.
- Establishing a chemical warehouse, labelling it, preparing inventory lists, taking care to take note of its material safety data sheets and directing operating instructions accordingly, and preparing a first aid kit, as well.
- Preparing a warehouse for placing liquefied petroleum gas (in bulk or packed in cylinders), taking all safety measures and placing relevant signs.

10 Management of Wastewater and Waste Disposal Methods:

- All wastewater shall be disposed of in a manner that does not form a risk to health and the environment.
- Wastewater shall be disposed of through public infrastructure facilities dedicated to wastewater or sewage treatment, or through site-specific
- Wastewater treatment plants "STPs'' within the residential facility.
- Where appropriate, qualified and approved septic tanks shall be used to dispose of wastewater from washbasins, appropriate records shall be kept, too.
- Separation of all waste in accordance with the standards of the Ministry of Environment and Climate Affairs «MECA», and re-transfer by qualified and approved contractors.
- Keeping waste collection facilities clean and tidy throughout the day, with covered containers to place food waste.
- Disposal of medical waste in accordance with the provisions of the
- Omani regulations and the standards applied therein.
- Providing enough covered garbage bins, and dispose of them in the waste collection area daily.

11 Fire Prevention and Emergency Response

The following conditions shall be followed regarding firefighting and mitigation of the effects that may arise from emergency situations:

- All buildings and assembly areas should have an emergency action plan in place. Escape routes and emergency assembly points should be clearly explained.
- Installing and testing the fire alarm system periodically, with simulation exercises to extinguish fires at a specified frequency.
- Fire extinguishers and emergency equipment shall be provided as approved by the Civil Defence and Ambulance Authority.
- Installing first aid boxes as required.
- An EOC shall be established and maintained.
- Smoking areas shall be allocated throughout the residential facility as long as such area is among the places where the minimum fire risk is reduced to zero.

Chapter III
Security Requirements

Security Requirements

1 Introduction

1.1 Vision:

Our vision is to establish and develop a set of manuals and guidelines that will assess actual needs, while incorporating industry best practices. This aim is to safeguard the employees, partners, visitors, as well as our property and equipment. Our approach involves not only detecting accidents but also preventing them from occurring, responding in a professionally with minimal losses.

1.2 Mission:

The general framework of the manuals and guidelines at MADAYN is derived from the regulations stipulated by the Executive Office of the National Committee for National Defense, within the essential services sector. Such collaboration aims at preventing potential risks, developing protective and mitigative measures, and the responding effectively to such risks.

The growth of the MADAYN poses challenges in terms of providing the necessary emergency infrastructure and meeting the requirements of our workforce and operations. This necessitates the issuance of specialized manuals and guidelines that align with work mechanisms. These documents establish responsibilities and duties, empowering emergency committees and teams to carry out their tasks with a high degree of success, efficiency, and effectiveness. Ultimately, our goal is to ensure the facilities and resources of MADAYN.

1.3 Physical Protection in Industrial Cities:

The primary objectives of this manual are to establish a general framework that defines roles and provides guidance to MADAYN in the pursuit of its strategic vision, particularly in emergency situations. This framework is designed to align with the National Plan for National Defense, charting a clear path towards fulfilling the mission and vision of MADAYN.

Furthermore, it aims to develop standardized security manuals and guidelines that shall be provided to MADAYN, due to security imperatives, to cultivate a sense of security, enhance the security concepts of the MADAYN Security Department, foster a spirit of cooperation, and promote security awareness among all staff operating in MADAYN and its facilities. Moreover, such Manual offers direction on the appropriate behaviors that individuals should adhere to in accordance with the established manuals and guidelines.

2 Physical Protection

Security considerations are of paramount importance in various businesses and industries. In light of this, MADAYN has developed security guidelines

tailored specifically for industrial cities. The primary objective is to safeguard all stakeholders from security threats.

MADAYN›s security guidelines are rooted in the principle of facilitating movement for beneficiaries, coupled with intelligent technical monitoring systems and swift intervention protocols when necessary. Given that MADAYN and its industrial cities represent one of the most vital economic and investment pillars.

Accordingly, maintaining its security and the safety of its facilities at all times is a top priority for MADAYN. This is achieved through close collaboration with partners to provide and enhance security measures, ultimately fostering a secure working environment within these industrial cities and for their residents. These measures align with MADAYN's established procedures that are followed in order to achieve the desired goals.

2.1 Physical Protection

Guidelines and standards have been developed through the security design of facilities, with the possibility of integrating these principles into the design of any facility, by providing many security Perimeters aimed at safeguarding our partners, visitors, and employees. These security Perimeters, defined as «the series of Perimeters of protection for areas and the way of controlling and managing the same in order to deter and prevent access and penetrations,» include the following:

First Perimeter of Protection:

Positioned at the perimeter of the industrial city, this initial Perimeter limits access points and is known as the perimeter. It is established using fencing, natural barriers, or other physical obstacles. In some places, controllable access points with enhanced safety measures may be incorporated.

Second Perimeter of Protection:

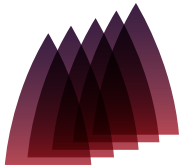
Comprising the exterior of buildings, this Perimeter includes doors, windows, or other openings. Protective components in this Perimeter encompass access controls and intrusion detection and suppression systems. Visual monitoring and the use of protective glass materials or personnel may be employed to manage specific entrances during designated periods.

Third Perimeter of Protection:

This Perimeter is situated within the building itself and serves to segregate authorized and unauthorized visitors.

Forth Perimeter of Protection:

Represents areas exclusively accessible to employees.



Fifth Perimeter of Protection:

Constitutes the security Perimeter for staff access to highly sensitive areas. Security design considerations in these areas shall adhere to applicable control and regulatory standards and guidelines.

2.2 Facility Security Design:

The physical design of buildings plays a pivotal role. It becomes particularly critical when integrating security systems with the elements included in the comprehensive security plan aimed at protecting MADAYN's facilities and addressing security concerns. Security considerations shall be an integral part of the security design, ensuring that security requirements, methods, and techniques are aligned with the latest developments in the field.

Some essential considerations are listed below:

- General elements related to risk factors, intrusions within the facility and the required control methods, including the provision of: Signage, barriers, direct monitoring of personnel and escorts, mechanical and electronic access control, audible or monitoring alarms.
- Developing a comprehensive security plan that includes the Parameter approach in general, including areas, access control points, roads and routes when emergencies occur.

Criteria and Guiding Principles for General Design:

- The primary purpose is to provide best practices that help tangible and intangible protect assets from potential risks. These assets include for example: Personnel, premises, sensitive and personal information.
- **Internal Environment:** The internal environment shall be designed to enable users to easily identify and navigate pathways that facilitate work procedures, while also aligning with security needs and life safety requirements. The extent and scope of services within the facility may vary from one establishment to another, contingent upon the specific components and the type of work conducted.

In all cases, there are fundamental criteria that must be met when designing a building, including:

2.2.1 General Area:

This encompasses essential areas like the access points of the industrial city, the building›s perimeter, the lobby, and the elevator.

2.2.2 Reception Area:

Security measures are enforced when moving from the public area to the access area, facilitating communication between the public and MADAYN representatives.The reception area is situated in the building›s lobby, with public access restricted to specific hours of the day or under specific circumstances.

2.2.3 Operation Area:

Access to this area is restricted to employees and authorized contractors who possess permits granting them access to the area, along with identification specifying the facilities they are permitted to enter within the buildings. It's important to note that the general public is prohibited from entering this area unless they have obtained authorization and are accompanied by individuals, as per the requisite procedures in this regard.

2.2.4 Restricted Area:

Access to this area is limited to authorized personnel only.

2.3 Access Control:

Control management shall be coordinated with operating procedures and the type of systems used, taking into account that electronic security systems are integrated and unified, if used.

Special design characteristics of electronic systems shall include the following:

- Determining the location of early warning devices in strategic locations in the facilities.
- The use of audio-visual control techniques in specific security areas or other important areas in order to follow the daily activity and event.
- Determining the necessary gate and outlet devices, so that these devices are permanent and suitable for the environment in which they are used.
- Implementation of a single and integrated access and exit control system at all MADAYN sites.
- Providing security systems for scalable gates through a flexible infrastructure with emergency pathways.
- Restricting the access of employees of authorized contractors who are responsible for the management and maintenance of specific systems.
- These systems may include mechanical, electrical, HVAC, plumbing, electrical cabinets, elevator machine rooms, and water supply systems.
- Limit access to data centers, areas with other servers and devices, and areas where systems are monitored, including ICT and cybersecurity systems.

Access to facility rooftops is restricted in the same manner as access to spaces housing mechanical, electrical, and plumbing systems. This includes control over ceiling access openings and doors that lead to these secure areas.

2.4 Procedures for the Protection of the Industrial City

The objective of implementing physical protection measures for the industrial city is to prevent unauthorized or unwelcome individuals from gaining access to the premises. This objective serves as the cornerstone of the facility›s security, and it is essential to explore measures that guarantee comprehensive security and safeguard against unauthorized access.

To achieve this, certain considerations shall be established from the outset:

- Identifying the locations where suitable fences shall be established.
- Identifying the ways for controlling access through gates.
- Installing observation posts equipped with security cameras.
- Establishing an additional perimeter to safeguard buildings and facilities.
- Verifying the contents of items carried by individuals within buildings and facilities.
- Periodically inspecting critical areas within the city to ensure the absence of any materials that could compromise security.
- Inspecting enclosed spaces within buildings and facilities to confirm the functionality of locks and to ensure there are no fire hazards.
- Regulation of security Lighting for Buildings and Facilities: It is considered one of the most important pillars of securing buildings and facilities because it is the most important obstacle to intruders or saboteurs, as it provides the following advantages:

1. Detection of intruders attempting to enter the facility illegally.
2. Verification of individuals accessing the facility.
3. Monitoring and inspecting the movements of various types of vehicles.

2.4.1 Types of Lighting:

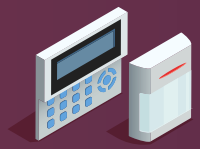
Outdoor Lighting:

Outdoor lighting fixtures are installed along the perimeters and walls of the industrial city. The gates are equipped with illuminated lampshades at the top to facilitate monitoring of movements during access and exit. Additionally, the security room is illuminated with subdued lighting, which is kept at a lower level of brightness compared to the gate lights to avoid drawing undue attention from outsiders.

Indoor Lighting:

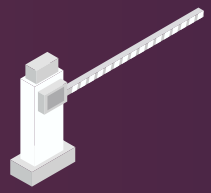
Indoor Lighting shall be installed in the internal roads of the industrial city, taking into account the clarity and adequacy of lighting for the work of surveillance cameras.

2.4.2 Types of Devices Used in the Security Field:



Gate & Port Alarms:

It uses readable and encrypted cards to open the doors.



Door Opening System with Automatic Alarm System:

The person using the card places it inside the card reader for reading and verification. If the card›s information matches the authorized data, the door is unlocked. However, if there is no match, the device triggers an alert indicating an attempted entry by an unauthorized person. Additionally, if there is an unauthorized attempt to breach the security without using valid access cards, the system also sends out an alert.

Monitoring Devices:

Monitoring devices re managed by cameras positioned on fences and at various angles, all of which are connected to the automated monitoring operations room. This system plays a pivotal role in ensuring the security of the facility, both from internal and external threats. The recorded may be utilized for reporting for reporting and monitoring.

2.5 Facility Security Design:

2.5.1 Exterior Environmental Design

Industrial cities are surrounded by boundaries defined by clear visual signs at access points to define city boundaries. Signage placed at these access points provides clear guidance for individuals to use designated vehicle lanes and routes, helping to regulate traffic entry procedures at

the main gates for efficient operations.

Road bumps shall be installed to reduce vehicle speed as they approach MADAYN entrances. It is strictly prohibited to plant densely packed trees near these entrances, as this can obstruct the visibility of security personnel.

2.5.2 Physical Perimeter Measures

- The ground area along the fence line shall be cleaned and leveled to eliminate any gaps beneath the fences. The area shall remain free from all obstructions for a distance of up to 3 meters on both sides of the fence.
- All gates in the fence line shall be designed to resist penetration and climbing, similar to the specifications of the fence itself.
- The distance between the bottom of any gate and the road surface shall not exceed 75 mm when the gate is in the closed position.
- Unmanned gates must be closed.

2.6 Fence and Gates

2.6.1 Fence :

The fence serves as both a physical and logical barrier to deter unauthorized entry into the facility, enhancing control over access points. Establishing fences involves adhering to technical guidelines and principles that ensure they fulfill their intended purpose while minimizing guarding costs. These rules may be summarized as follows:

- Fences shall be constructed using wire mesh with openings not exceeding two inches, and the wire used shall be sufficiently strong. The height of the mesh shall not be less than two and a half meters.
- The edges of the wire mesh shall be reinforced with barbed wire.
- The mesh shall include a suitable underground submersible barrier to prevent infiltration from beneath the fence.
- Adequate flat distances from the ground, free of obstructions, buildings, or crops, shall be maintained around the external fences of the facility, both on the inside and outside. These areas are referred to as “Approach Areas”.
- Access openings in external fences, such as gates and others, shall be minimized, and unused openings shall be closed.
- Regular maintenance of the fences is essential, and the facility›s Maintenance Section shall be responsible for inspecting the fences periodically and performing necessary repairs.
- Signs with instructions to avoid approaching the fences shall be prominently displayed.

Classification No. I Fence:

This type of fence is employed in industrial cities demanding complete control, including free zones and industrial cities situated in sensitive areas along international borders, the fence shall be subject to the approval of the security entities. Its specifications shall include the following:

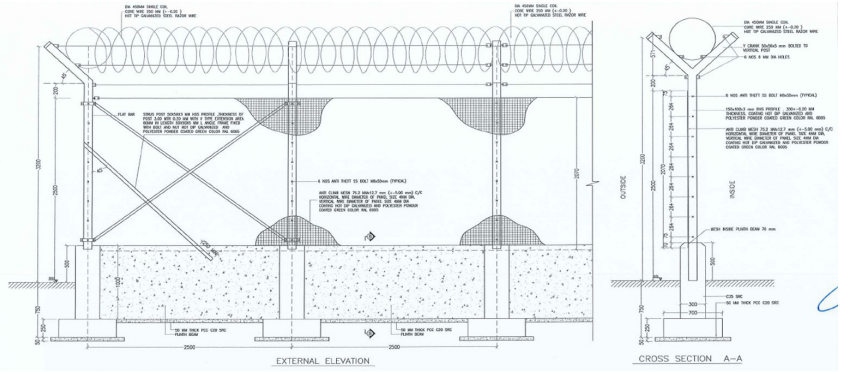


Figure 1: Classification No. 1

Classification No. 2 Fence:

This type of fence is used in low-risk industrial cities, noting that it is the most widely used type in industrial cities.

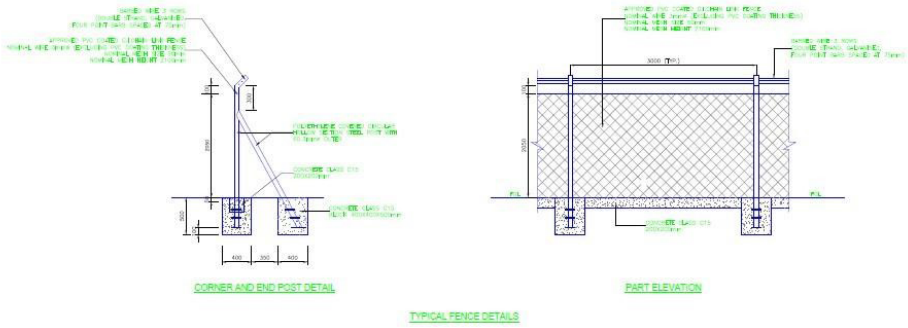


Figure 2: Grade (2)

Its specifications are as follows:

SEPCS	Grade 1	Grade 2
Height (m)	3.2	3.2
Spacing between Posts (m)	2.5	2.5
Concrete (plinth beam)	PCC 50 mm C20 SRC + Plinth beam RC class C30 300 x 1000 mm 500 mm of Plinth beam below FGL 500 mm of Plinth beam above FGL	Concrete class C15 200 x 200 mm below FGL only
Foundation	700 x 700 x 250 mm	Concrete class C15 400 x 400 x 500 mm
Posts	150x 100x 3 mm RHS PROFILE 300+- 0.2 MM THICKNESS. COATIED GREEN COLOR RAL 6005 “Y” CRANK 50x50X5mm BOLTED TO VIRTCAL POST.	POLYETHYLENE COVERED CIRCULAR HOLLOW SECTION STEEL POST WITH 60.3mm OUTER
Wires	DI 450 MM SINGLE COIL CORE WIRE 250 MM (+- 0.20) HOT TIP GALVANIZED RAZOR WILRE.	BARBED WIRE 3 ROWS (DOUBLE STRAND, GALVANISED, FOUR POINT BARB SPACED AT 75mm)
Mesh and Coating	ANTI CLIMB MESH 75.2 MMx12.7MM (+- 5.00 MM)	APPROVED PVC COATED G.I. CHAIN LINK

	C/C HORIZONTAL WIRE DAIM-ETER OF PANEL 4MM DIA, VERTICA WIRE DIAMETER OF PANEL SIZE 4 MM DIA, COTING HOT DIP CLAVA-NIZED AND PLYESTER POWDER COATED GREEN CLOLR RAL 6005	FENCE NOMINAL WIRE 3mm (EXCLUDING PVC COATING THICKNESS) NOMINAL MESH SIZE 50mm NOMINAL MESH HEIGHT 2100mm

Concrete brick walls can be used in some locations in industrial cities that require this type of protection - such as the facades and near the main gates. The use of concrete fences depends on the location and nature of each industrial city.

2.6.2 Gates and Guard Rooms

It is the point of entry/ exit of vehicles and individuals from industrial cities, and its purpose is as follows:

- Control the entry/ exit of unauthorized persons
- Control the entry/ exit of authorized vehicles
- Block unauthorized persons from entry.
- Support organizing the work flow.

The most important specifications required for the gates are as follows:

- Sufficient parking space must be provided inside and outside the gate.
- Mechanically and manually operated road barriers must be provided.
- A Guard room must be provided.
- Adequate lighting shall be provided to enable identification of persons and vehicles.
- Adequate security staff must be provided.
  CCTV must be provided.
- Adequate number of gates must be provided for security systems surrounding industrial cities.
- Durable and rigid gates must be provided.
- Speed bumps must be constructed to control speeds at entrances.
- An average distance of I meter between lanes (in case of more than one lane) must be maintained.
- A communication system must be provided with the control room of the central security.
- Cameras must be provided for all entry and exit lanes.
- Display boards shall be provided in sufficient sizes (used for the purposes of displaying mandatory advertisements, notices, etc.)

2.6.3 Traffic Management

- Traffic shall be managed at the entry/exit gates of Madayn. In addition, parking spaces must be effectively managed in order to reduce congestion, assist in search and access control procedures as well as establish traffic control measures to slow the speed of approaching vehicles.
- Traffic control measures, including speed bumps, should be used to slow the incoming traffic. Also, separate routes for internal/ external monitoring should be provided at entry/ exit points.
- A vehicle inspection area shall be provided and clearly identified if necessary, and the vehicle shall be inspected without obstructing the flow of traffic.

- A parking area shall be provided at the point of entry to control visitor access to permitted shuttle vehicles.

2.6.4 Security Lighting Works

Security lighting works shall be carried out to support the protection of people/ property from criminal activities and secure the relevant area. To better understand the principles of security lighting, security objectives must be understood in order to prepare an appropriate security plan. The objectives are as follows:

- Provide a clear view of the secured area and enable anyone to move to or around it as quickly as possible.
- Enabling the guards to recognize the face of people at a distance of at least 9 meters.
- Facilitate the proper use of other security devices available in the secured area.
- Security lighting shall be installed along the perimeter fences and must be evenly distributed along the perimeter.
- Surveillance cameras shall have adequate illumination levels to clearly detect any person in all climatic conditions and all lighting conditions.
- The area covered by the lighting should match the area covered by the surveillance cameras.

2.7 Central Control Center "CCC"

The CCC performs critical monitoring and control tasks to manage security in Madayn, and the same should be in the headquarters /industrial cities. An access control point to the center should be provided. Furthermore, Access to the center should be controlled using the access card, biometric reader and / or PIN device, noting that unauthorized persons shall not have an automatic access to the center. In this regard, the CCC environment should be controlled so that temperature and humidity are maintained within certain limits of the working environment and operating systems.

The CCC room shall contain high-quality displays, control unit data and online operating software, enabling operators to have full access to all surveillance systems and cameras in the industrial city.

Requirements for Control Center:


Telephone - Multiline and Hotline.


E-mail


Wireless Communications


SMS / Voicemail or Mail


Large Screens


Computers /Workstations

Alarm Panel/ Sirens

Control Panel

2.7.1 Access Control Systems

- The automated access control system shall be installed and must cover all Madayn locations.
- Investors who own private buildings are required to install their own access control system.
- A common access card shall be used, which grants access to all the designated buildings and facilities under the access rights granted to each individual. Access control system must be able to distinguish between permanent employees, visitors and contractors.
- Access control system controllers shall remain operational in the event that communications with the system servers are interrupted. After restoring communications, the data shall be automatically updated.
- The security team should manage all access control activities.
- Employee access control measures should be implemented at the entrance to all locations and offices of Madayn in order to prevent unauthorized access. When additional security is required to enhance perimeter security, the security team shall request the implementation of access controls for all personnel entering or leaving Madayn's premises.

2.7.2 Requirements for the operation of surveillance cameras

Surveillance cameras - also known as video surveillance technology - is a technology through which video cameras transmit signals to a specific group of observers in a specific place. the signals of surveillance cameras are not sent publicly to everyone, such as television broadcast signals. The term "surveillance cameras" is mostly applied to surveillance cameras used in shops, offices, civilian and military facilities, etc. Surveillance cameras shall be placed at entry/ exit points and control areas to monitor and record personnel. Surveillance Cameras footage shall be recorded and maintained for a minimum of ninety (90) days.

Surveillance cameras should provide videos that meet three requirement

Provides images of people with good accuracy and enough details to reliably identify the person.

Provides images of people with sufficient accuracy to enable observers to identify the person.

Availability of images with sufficient accuracy and details to detect anyone present in the field of vision.

After a security incident or during an investigation, Surveillance Cameras clips can be extracted from the system to help identify suspects or witnesses. The extraction of clips shall be carried out within the framework of official investigations only, and this must be approved by the Director General of Madayn or their deputy. Only clips of the investigated time and place should be extracted, and all efforts should be made to protect the privacy of individuals.

Only the Head of Security shall have the authority to use surveillance camera systems and programs, and routine work by security personnel is limited to monitoring applications only. The Head of Security may temporarily delegate their authorities to another person with regard to the use of the surveillance cameras system.

Third parties, such as the Royal Oman Police or any other investigative body, shall submit a written request to be able to access the surveillance camera data, and it is prohibited to transfer such data outside Madayn except with the approval of the Director General of the same.

When outdoor cameras are installed, they must be provided with a casing to protect the same from environmental factors and weather fluctuations, including bright sunlight, high temperatures, strong winds, dust, rain, and extremely low temperatures. When surveillance cameras are installed in hazardous areas, they should be placed in an environmentally friendly manner so that they do not interact with other factors.

Surveillance cameras shall operate 24 hours 365 days a year in all available lighting conditions. Where illumination levels are insufficient for the operation of surveillance cameras, additional security lighting shall be provided.

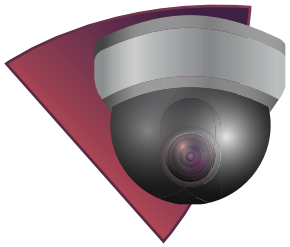
As for surveillance cameras recordings – Surveillance cameras capacity should be sufficient to record data for a period of 90 days for all cameras operating simultaneously.

2.8 Cameras:

The need to use surveillance cameras to secure all the elements of project is increasing day by day, therefore, it is important to install surveillance cameras in the appropriate places in your project to avoid intrusions and thefts, and to ensure that security personnel work with the required efficiency to ensure a safe surveillance system.

- The proper surveillance system is based on the selection of the elements of the system with great accuracy and the selection of durable types of high quality that operate efficiently. There are two types of cameras: indoor and outdoor cameras, including fixed cameras and mobile cameras.

2.9 Surveillance Cameras Types:



The First Type - Indoor Cameras: These are cameras installed inside any closed place, and this type comes with various sizes, shapes and colors. The most common examples of this type are surveillance cameras known as "Dome and Bullet»

The Second Type - Outdoor Cameras: Some of these cameras cover long distances and some cover medium distances. This type is installed outside the facility to ensure that the gates and perimeter of the building are monitored. The outdoor cameras must be resistant to dust, sunlight, rain and all other weather factors. These cameras also have a night vision feature and are supplied in many types and shapes.

3 Security Guards

Security-related matters are essential for various businesses and industries. Accordingly, Madayn aims to develop and implement a comprehensive health, safety, security and environment policy in all industrial zones in order to protect all its stakeholders from all types of risks in the workplace and accidents, as well as to secure its assets.

The security policy and principles of «Madayn» are based on the principle of ensuring the ease of movement for beneficiaries with smart technical monitoring and rapid intervention when needed, considering that «Madayn» and its industrial cities are one of the most important vital economic and investment centers.

Therefore, maintaining security in «Madayn» and ensuring the safety of its facilities at all times is one of the main tasks that «Madayn» aims to provide and promote, in coordination with its partners, to create a safe work environment for the industrial cities and occupants by following the agreed policies and procedures in order to achieve the desired goals.

3.1 Security Guards

3.1.1 General Duties

- Avoid anything that violates the honor and ethics of the job whether inside or outside the workplace.
- Abstain from accepting or soliciting bribes, gifts, gratuities, mediation.
- Adhere to proper etiquette in dealing with the public, superiors, and colleagues.
- Act patiently, politely and courteously when dealing with others.
- Maintain honesty and integrity in all works and adhere to regulations, instructions and laws.
- Act with great skill and wisdom in dealing with problems.
- Adhere to the proper appearance of the safety and security personnel.
- Maintain calmness and tranquility within the facilities and units.
- Provide assistance when requested and help the injured if needed.

3.1.2 Detailed Duties Of Security Personnel:

- Manage all site security and safety operations, handle the same and avoid escalation.
- Conduct the initial investigation in issues and incidents that occur at the site, whether referred by officials, or discovered by the Security and Safety Department after obtaining the approval of the Head of Security Department.
- Issue entry permits for cars in accordance with the regulations in force.
- Work to raise awareness of safety and security for all.
- Monitor the employees and workers of the operating establishments and the occupants of the site within the limits of its competence.
- Supervise the security operations, considering the relevant regulations.
- Organize on-site guarding shifts on working days, holidays and vacations.
- Develop the efficiency of guard workers through guidance and coordination with the relevant department.
- Supervise the guarding of buildings and preserve it from acts of vandalism or theft.
- Provide security for site visitors, including VIPs and delegations.
- Handle security incidents/ violations and apply the necessary measures in this regard.
- Conduct investigations with suspects and refer them to the competent authority after the approval of the head of the Security Department.

3.1.3 Security Officers:

- Ensure the general etiquette and good appearance of the patrol and guard personnel in duty.
- Ensure that personnel receive custody of the job and guarding tools and ensure that they are fit for work. Educate group members regarding their duties, deploy them to guard points, and notify them of any security updates that must be considered.
- Patrol the security personnel to ensure they are dully alert and performing their duties.
- Monitor compliance with general and facility security instructions and control any violations thereof.

- Monitor the entry/ exit of personnel, visitors, and facility occupants in accordance with instructions.
- Timely respond to calls from guard points when an emergency occurs.
- Prepare a comprehensive report that includes the progress of work and security events during the shift and submit the same to the Head of Security Department or their deputy.

3.1.4 General Duties of Security Personnel:

- Respect officers affiliated with different departments and centers, as well as respect arrangements related to the conduct of work.
- Maintain the items in their custody.
- Hand over lost items to the direct manager without tampering with such items.
- Maintain accuracy while reporting all information to the officer and abstain from providing false information.
- Abstain from talking with others regarding matters related to job duties.
- Maintain the cleanliness of the site and abstain from misusing the properties.
- Abstain from eating, drinking, smoking or reading newspapers during shifts.
- Carry the identification card while being on site and present it upon request.
- Wear the official uniform designated for the job in a proper manner.
- Implement the orders accurately and honestly.
- Abstain from disclosing secrets that the guard becomes aware of by virtue of their position, even after quitting the service.
- Adhere to the shift attendance and departure times, and fulfill all special requirements.
- Adhere to procedures and instructions related to events held on site.
- Avoid being in areas other than those designated for the workplace.
- Abstain from damaging, tampering with, or disrupting the site's assets.
- Attend the shift at the specified times and abstain from leaving until the replacement guard arrives.
- Bear full responsibility before the unit manager or supervisor with regard to the assigned tasks.
- Carry out guard duties to the fullest during the shift according to the relevant program.
- Implement instructions, decisions and orders issued by the competent officer without hesitation.
- Never leave the site except in special cases, provided that coordination is made with the supervisor and an alternative guard is provided.
- Understand guard instructions before handling the relevant tasks, and ensure to acquire all the supplies required to complete the tasks.
- Inspect the guarded area and ensure that it is free of any foreign objects.
- Adhere to implementing administrative instructions, such as refraining from smoking during the shift.
- Ensure the good functioning of all site security tools, procedures, and activities, such as lighting, etc.
- Observe monitoring, alarm, firefighting and safety devices and ensure that the same are fit for operations.
- Monitor the daily operations of vehicle, occupants and personnel, and

- verify that they are regulated in accordance with security instructions and that there are no defects in the same.
- Having field skills to ensure security in the establishment and its vital facilities is maintained. Such skills are acquired after continuous training.

Observation skills

Insight

Intelligence

Reasoning

Intuition

Research and investigation

Sense of security

Deduction skills

3.1.5 Duties and responsibilities of a security guard during the following activities:

Activities to be conducted during field operations:

- Monitor the entrances and exits of the site and all its units and other facilities.
- Delivery and receipt of the site according to an official form in which all procedures are recorded.
- Contact the direct manager immediately in case of finding anything that might imply a threat to the site.
- Make an effort to calm down any quarrel or any behavior that harms the public's peace.
- Detain the parties to the dispute and notify the line manager immediately.
- Abstain from making any decisions outside the scope of responsibility assigned to the guard before referring to the line manager.
- Knowledge of all site elements, including entrances, exits, emergency doors, equipment and installations.
- Knowledge of how to use wireless devices.
- Handle issues, irregularities or errors in information, and report the same to the operations department and the supervisor.
- Ensure the safety of the devices or equipment in the guard's possession and verify that the same are suitable for use.
- Properly use and maintain the devices or equipment in the guard's possession.
- Abstain from using the phone of the service center except for work purposes only.
- Ensure that communication devices are in order at the beginning of each shift.
- Conduct inspection patrols within the site.
- Patrol the site and follow up on security and safety matters.
- Monitor fire alarm panels on site.
- Support personnel and providing them with assistance in emergency.
- knowledge of fire extinguishing, their types, operating locations, and how to stop them.
- Knowledge of the locations of fixed fire extinguishers and fire valves inside the building.
- Knowledge of the locations of external and internal gas and water valves.
- Knowledge of all the building's contents, including equipment, installations, and hazardous materials.
- Prepare a daily report at the end of the shift, including all notes. (Attached)

Activities to be conducted after the end of the field operations:

- Ensure that all doors and entrances are closed.
- Ensure that lights, air conditioners, fans, faucets and water valves are turned off.
- Patrol the building after the end of the operations to ensure that all workers left and inspect dangerous areas.
- Inspect the building from the outside to ensure its safety and to ensure that there are no dangerous materials.

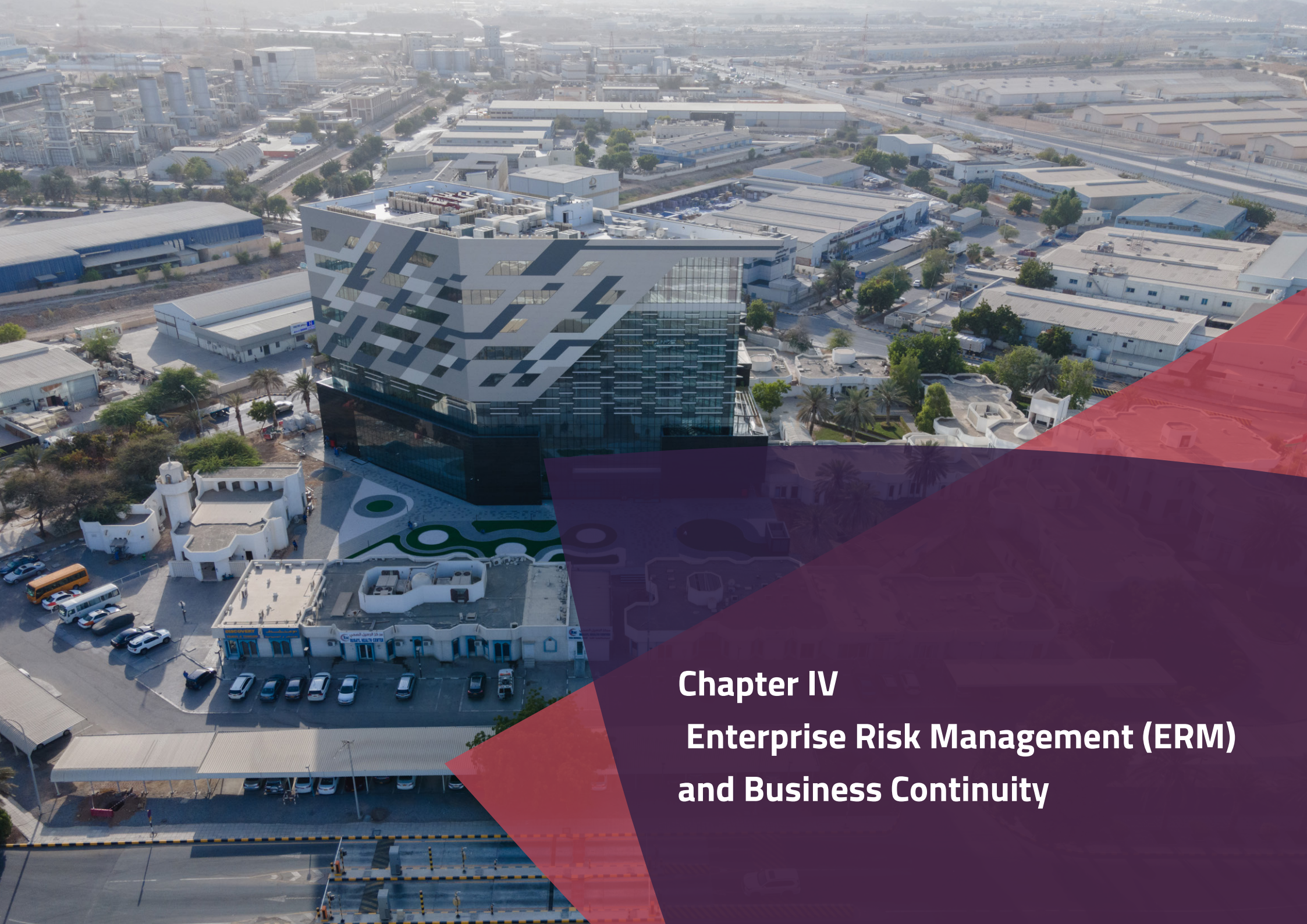
- The guard shall be responsible for the building›s keys. These keys are received and handed over from shift to shift and recorded in the building›s status record.
- The security personnel must pass through the building and inspect the general condition in all places that fall under their responsibility to ensure that they are free of any danger.
- Ensure that there are no flammable materials, waste or equipment that may create danger to the building, remove the same from the building as soon as possible and submit a report thereon to the relevant department.
- Do not allow workers to store any flammable materials such as paint, wood, cardboard, or anything else that creates danger to property and the safety of the building.
- Inspect automatic alarm and extinguishing devices, ensure their operation, and inform the concerned department of malfunctions to coordinate with officials and carry out the necessary maintenance operations.
- Ensure the safety of the site and stop works that could affect the safety.
- Ensure that all doors of vacant rooms and rooms with electrical panels are closed and that no waste is accumulated therein.

Procedures to be followed in emergency situations:

- Turn on alarms.
- Turn off mechanical equipment and cut off electrical power and gas sources.
- Asking site employees and occupants to evacuate the facility as well as internal and external sites, and directing them to the nearest exits.
- Ensure that all building occupants are fully aware of exits and the safe way to exit.
- Ensure that all paths are free of obstacles and that there are information signs on them.
- Ensure that doors and windows are closed except for exits designated for evacuation operations.
- Ensure that all emergency exit doors and corridors leading to them are open.
- Inspect the assembly point to ensure it meets the shelter conditions.
- Fight the fire using fire extinguishers available on site.
  Open the water valves of the automatic water sprinkler system to extinguish the fire.
- Assist in closing roads and isolating internal/ external hazardous locations.
- Prevent anyone from returning to the building after the evacuation for any purpose.
- Organize the traffic of persons and internal/ external vehicles.
- Assist in transporting injured and sick people.
- Maintain order and prevent citizens from gathering around the building and obstructing evacuations.
- Prevent any non-authorized personnel from entering the building.

Procedures to be followed at the gates of industrial cities:

- The site gate shall be vigilantly guarded.
- The gates barrier shall be permanently closed to control the entry of vehicles and maintain order at the gate.
- The gates shall be locked after the end of the official working hours. Verify that all gas valves are closed, electrical power is turned off, and mechanical equipment is turned off.
- Prevent the exit of any property from the site except after obtaining written approval from the relevant department.
- Prevent the entry of any unauthorized person who has not obtained permission to enter the site.
- Request the identification card of any suspicious person before entering the site.
- Ensure that no equipment or other devices enter without the full documentation of its data.
- Prevent unauthorized vehicles from entering.
- Prevent buses from parking on the roads or in the parking lanes.
- Help facilitate passage through the gate as quickly as possible.
- The absence of a security personnel must be verified by ensuring that the guard room is constantly empty.
- Constantly patrol the guard area to be aware of all conditions related to that area.
- Immediately refer all reports received at the gate to the operations room in order to take the necessary action.
- Organize the traffic in front of the site, and prevent cars from parking incorrectly.
- The fences/ walls shall be monitored daily and ensure it is not breached or altered in any manner.
- Monitor emergency doors, remove any obstacle that impedes passage through them, and submit a report regarding any malfunction.



Chapter IV
Enterprise Risk Management (ERM) and Business Continuity

1 Introduction

This policy reflects Madayn›s clear commitment to the development and implementation of a risk management and business continuity system. This system will enable Madayn to employ the necessary capabilities to manage risk and business continuity so that it can achieve an effective response in cases where there is a significant interruption in the workflow.

This policy has been prepared to guide the management concerning risk management and business continuity to ensure its successful and effective operations.

Madayn's risk management and business continuity system in force meets the specifications and standards of the International Organization for Standardization «ISO», the system operates on the basis of enhancing the safety, security and business continuity at the Establishment. Madayn is also keen to achieve its strategic plans, ensure the continuous provision of its services to beneficiaries, and the preservation of assets and acquisitions.

2 Purpose of the Document

The purpose of this document is to develop a framework for establishing, implementing, maintaining and improving a risk management and business continuity system at Madayn on an ongoing basis.

3 Scope of Work

This policy applies to the services provided by Madayn and the sites where support is provided, as this policy addresses all departments/sections and sites of Madayn in accordance with the ERM framework.

4 Objectives

The key objectives of Madayn through its Risk Management and Business Continuity System are as follows:

- Develop sustainable risk management procedures so that Madayn can focus on the key risks faced by its departments.
- Integrate the risk management process into the awareness and daily activities of all Madayn staff and employees.
- Integrate the risk management process into strategic planning, budgeting and strategic decision-making processes.
- Ensure the continuity of the provision of the basic services in accordance with the agreed levels and the provision of such services in accordance with the approved timelines for the works.
- Enhance HR preparedness and response to potential emergencies.
- Mitigate the effects of any events resulting in disruption to the workflow.
- Follow up and continuously develop the necessary plans/ procedures to provide support in response/ recovery operations in accordance with the approved timelines, and Compliance with International Standards for Risk Management System (ISO 31000) and Business Continuity Management System (ISO 22301).

5 Enterprise Risk Management (ERM) and Business Continuity Policy

Madayn is committed to implementing an ERM system under which potential risks faced by Madayn in its operational and administrative processes are identified and monitored, as well as applying business continuity measures in order to reduce the impact of adverse events and respond to the same in an objective and predetermined manner.

6 Management Instructions with regard to the Enterprise Risk Management (ERM) and Business Continuity

The following instructions has been issued to set the extent to which the management is committed to meeting ERM and business continuity requirements in order for Madayn to be able to achieve the desired objectives of implementing the system.

6.1 General Instructions regarding ERM

- The Risk Management and Business Continuity Policy meets the requirements of the latest version of the International Standards for Risk Management System (ISO 31000) and Business Continuity Management System (ISO 22301).

6.2 Instructions on Training and Awareness Management

- Madayn seeks to provide appropriate training to all key risk management staff in order for them to effectively implement and manage the ERM and Business Continuity Policy.
- Madayn aspire to provide all its employees with risk management and business continuity education.

6.3 Instructions on Test Management, Review and Performance Measurement

- Madayn adheres to conducting tests and training regarding all basic services that it provides on a regular basis.
- Madayn shall review all the framework documents of the Risk Management and Business Continuity System on a periodic basis to ensure that the information contained therein is correct and updated.

7 Policy Circulation

The policy shall be circulated to all Madayn employees as part of onboarding requirements.

8 Policy Review

This policy is subject to a unified review process in Madayn, for which the CEO of Madayn is responsible. The CEO shall personally or through specialists review and update the policy continuously.

9 Policy Distribution

This policy is distributed to key stakeholders identified by Madayn.

10 Controls and Exceptions

The risk management process shall not address issues that arise from matters that fall handled under Businesses as Usual operations, such as amendments to regulations, business risks, credit risks, fraud risks, natural disasters, health, safety and environmental risks, legal issues and non-compliance with rules and regulations issued by government or regulatory authorities. However, identifying the relevant risks shall be of one of the responsibilities of the person concerned with these operations by including the same in the risk register.

Chapter V:
Appendices

Appendix 1: Facilities Risk Classification

Facility	Risk
Food industry	1. Machinery and tools risks 2. Radiation 3. Noise 4. Environmental pollution and infectious diseases 5. Heat 6. Collision with Forklifts 7. Ventilation 8. Firebreaks 9. Chemical substances 10. Psychological stress
Petroleum and natural gas	1. Machinery and tools risks 2. Radiation 3. Noise 4. Environmental pollution and infectious diseases 5. Temperature 6. Collision with Forklifts 7. Ventilation 8. Firebreaks 9. Chemical substances 10. Psychological stress
Construction and building	1. Falls from heights 2. Collapsing Trenches 3. Collision with moving equipment 4. Collapsing scaffolding 5. Fall of objects 6. Temperature
Petrochemical, Coal, Plastics and Paper Industries	1. Chemicals leaks 2. Air pollution 3. Intoxicating 4. Radiation 5. Firebreaks 6. Chemical substances
Electricity, Water & Gas	1. Electrocution 2. Suffocation 3. Firebreaks 4. Burns 5. Gas leaks 6. Electric arc risks
Workshops of various types	1. Machinery and tools risks 2. Gas leaks 3. Noise 4. Suffocation 5. Temperature 6. Burns 7. Ventilation 8. Collision with moving equipment 9. Firebreaks 10. Air pollution & Noise

Appendix (2) Welding Works procedures

The following procedure was developed to enable contractors to take appropriate safety precautions during the implementation of hot works. Such works may not be carried out without obtaining a work permit approved by the concerned departments. This procedure applies to all contractors working in Madayn which were assigned to carry out hot works.

Definition

Welding Works refers to activities that may result in a spark or flame using flammable materials that would cause a firebreak, risk of explosion,

damage, or injury within the work environment. Examples of works included in the definition of hot work are as provided below:

- Shearing and gas welding - electric arc welding and gas welding.
- Tools that generate sparks – Cutting, drilling tools, etc.
- Burning materials near flammable sources.

Procedure

To control and reduce the risks resulting from Welding Works activities, this procedure shall be adhered to in order to determine the method used to assess the risks, the action plan required to complete the tasks, select the appropriate personal protective equipment, ensure the training and qualification of the personnel assigned to the tasks, and inspect the work area before starting the hot work and after its completion.

Welding Works preparations

Before proceeding with Welding Works activities, the following procedure shall be completed:

- Ensure the Welding Works Permit is issued fully and correctly.
- The Welding Works Permit shall remain valid for the duration of the shift on the day of its issuance only, and a new permit shall be issued if the
- Welding Works are proceeded on the following day.
- Taking into account the details of work activities as well as necessary precautions must be considered.
- Inspecting the work area to ensure that it is isolated from other activities, thus reducing the risks to other areas.
- Reducing pressure, completing drainage works or cleaning systems before proceeding with Welding Works activities, as well as ensuring proper ventilation in the work area.
- Isolate any operated electrical equipment (pumps, motors, etc.), and units isolated from electricity shall be marked.
- Concealment of hazardous fluid and gas pipelines connected to the equipment and closure of various valves to ensure mechanical isolation of the system.
- Ensure that surrounding areas do not contain any flammable liquids or vapors that could lead to hazards.
- Measure the minimum ignition and oxygen level as well as providing proper ventilation at all times.
- Keep the fire extinguisher and fire hose connection in a ready-to-use condition.
- Preparedness for rescue operations.
- Provide sufficient lighting to carry out the task in the event that Welding Works are carried out in confined spaces and the use of a 24-volt flame-proof flashlight equipped with a glass cage and metal protection.
- For confined space hot works, procedures for entering confined spaces must be fulfilled in addition to this procedure.
- When the work is to be completed at heights, the area should be cordoned off by placing a barrier below the work location as well as using fire retardant materials.
- Ensure the provision of a safe working platform when working at heights, and scaffolding/ ladders must be inspected before reaching elevated

- places. Safe access means must be provided to access/ exit the location designated for work. Please follow the procedures for working at heights.
- Appropriate rescue, firefighting, first aid and medical services shall be available in the event of an accident.
- Appropriate supervision of skilled and trained workers should be provided according to the nature of the work.
- Ensure proper procedures are carried out for switchboards and earthing works while handling electric/ powered tools.
- A ground circuit breaker should be provided when it is necessary to use a power tool with more than 24 volts.

Hazards Evaluation

A Welding Works difficulties and risk assessment is required, noting that the common Welding Works risks are as follows:

- Fire/ Explosion
- The secondary effects of the explosion represented in the scattering of objects
- Exposure to toxic gases
- Eye injury caused by a foreign object.
- Eye injury due to welding resulting in infrared and ultraviolet radiation
- Electric Shock
- Contact with hot objects/ materials
- Exposure to toxic or corrosive chemicals
- Suffocation
- Noise
- Dust

Risks may involve one or more of the above items, depending on the nature of the works conducted.

Personal protective equipment

The following protective equipment shall be used during the execution of Welding Works due to the possibility of exposure to the aforementioned hazards. Accordingly, the number of protective equipment used depends on the nature and requirements of the work.

- The welding shield shall be used in welding operations and the assistant shall use goggles. The welding barrier should be used for the protection of personnel in close proximity.
- Safety Helmet
- Latex gloves made of chrome leather or latex gloves made of tarp
- Safety shoes
- Fire-Resistant apparatus
- Fire shield to prevent welding slag and sparks from getting out of the work area
- Earplug or earmuff
- Dust cover

The permit issuer shall ensure that the permit clearly identifies the hazards of the works subject of the permit and stating the obligation to use the necessary PPE and RPE during the execution of the works. The entity to which the permit was issued must comply with the instructions issued in this regard.

Post Completion of Hot Works

Immediately upon completion of the activities for hot works, the following procedures shall be followed:

- Ensure proper preparatory measures are taken as well as removal of used tools and equipment and replacement of related items.
- Carry out leak or compression testing to ensure leaks are repaired and that insulation works are carried out and insulation materials are used correctly. Return the flow path of the fluid or gas pipeline to the area.
- Restoration of electricity supply (and removal of insulation markings) only after the same is inspected by qualified technicians.
- Removal of scaffolding and other fixtures.
- Conduct a comprehensive inspection of the work area and declare the completion of the work.

Appendix (3) Working at Heights Procedures

Post Completion of Hot Works

Heights

This term is used to refer to unsafe places where the required works entail the risk of people falling.

Light Ceiling

Including conducting works on corrugated asbestos sheets or plastic roofing sheets.

Safe working platforms

The elevated and safe work area, which has the minimum requirements of safety barriers/ iron reinforcements and can be moved safely. The following are examples of safe work platforms:

- Platforms constructed as a permanent part of the workstation (e.g. sample collection platform constructed on the
- chimney)

  Mobile platforms designed to be moved from one place to another. (Mobile Platforms)

Hazards Evaluation

Before issuing the permit, the concerned authority should conduct a risk assessment, whenever the works subject of the permit includes working from heights/ light ceiling and the following risks are possible:

- A person falls from heights
- Fall of materials, such as falling slabs, tools, ladders, collapsing escalators, roof ladders, falling paints, asphalt, etc.
- Electrical shock or exposure to overhead electrical conductors.
- Exposure to flames and fumes that are smelly, toxic, corrosive, or flammable and that come out of the vent/ exhaust pipe.

Procedure

- Workers should be protected from falling while working from high places more than 3 meters above ground level by the use of a fall protection belt/ lifeline and a roof ladder.
- A permit is required to work at heights that are more than 3 meters, or if the works involve a risk of falling with no safe work platform.
- The permit issuer shall inspect the work area in cooperation with one or more representatives of the works compliance department to verify the use of the following safe methods:
  1. Connect ladders/ scaffolds to provide stable support
  2. Provide workers with fall protection lifelines to support them while working at heights
  3. Lifting tools/ equipment to and from the work area (the person must be able to climb into the work area freely).
- Protect the area and personnel in the work area from falling objects as well as cordoning of areas surrounding the work area to prevent unauthorized people from entering the work area.
- Inspect and access the work platform to ensure that it is securely constructed before commencing work activities.
- People who change places while working at heights should be provided with two lifelines to ensure optimal support, and at least one lifeline

should be used at all times.

- Safe means of access/ exit of the work area should be provided. If a fixed ladder is not used, an escalator/ rope ladder shall be used to work at heights.
- Every person working at heights/ light ceilings shall wear a fall protection belt, which shall be protected by the use of a suitable harness attached to the lifeline fixed to the fall protection belt. The direction of fall should be straight down so that the lifeline user does not collide with any adjacent structure as a result of the swing.
- The fall protection belt must be used while working on roofs, and the fall protection belt must be worn in the event that parts of the roof are to be replaced or the rood is not structurally sound.
- The fall protection belt shall be attached to a secure point at the top of the roof.
- A vigilant observer should be provided to monitor movement within the work area and the person working at heights.
- Weather conditions such as sudden gusty winds need to be reviewed and appropriate precautions should be adopted when handling sheets.
- It is prohibited to leave any tools/ materials on the roof or at heights after the completion of each working day.
- Isolation of electrical power supply is required as needed.

Working at heights

The following procedures have been developed to ensure safe work practices and protection from fall injuries that may occur to people working at heights above 3 meters or on light ceilings. These procedures also address people who do not carry out work from high places such as:

Working on an overhead pipe rack.

Working on scaffolds

Work on windows and light ceiling.

Personal protective equipment

The following protective equipment shall be used during work from heights and on light ceilings, in order to avoid the possibility of injury due to the aforementioned hazards. However, more than one protection device must be used depending on the nature and requirements of the work.

- Chin Belt Safety Helmet
- Safety harness or safety lines
- Roof and access ladder
- Safety net (If Required)
- Dust mask
- Safety shoes

Appendix (4): Working on Electrical systems

Definition

Electric power supply system: It is a system that combines all electrical conductors and devices with a common source to provide the same with electrical energy. The permit to work on the electrical power supply system applies to the following:

- Electrical substation which includes high voltage transformers, main control panels and distribution lines.
- Light fixtures over 3 meters high.

Procedure

Before issuing the permit, the concerned authority shall conduct a risk assessment, as workers are often exposed to the following risks while working on electrical supply systems.


Electrocution


Burns


Fire explosion


Falls from heights

Procedure

- Only qualified and authorized contractors with a certificate of competence or a technician approved by the competent department are allowed to work on the electrical system.
- Ensure the power is disconnected from the device before issuing the work permit.
- Air breakers, miniature circuit breakers, molded circuit breakers, ground circuit breakers, switches, fuse units and electrical (open) power valves shall be closed.
- Appropriate instruments and gauges shall be used which include: Voltage meter, ampere meter, insulated pliers, insulated screwdriver and other devices/ tools.
- Warning signs should read “Danger - Do not Operate”. All signs should be serially numbered by the permit issuer.
- Rubber gloves and boots designed for electrical operations should be provided and used.
- When it is required to disconnect the high-voltage line, isolated gloves should be used to switch or disconnection switch operated by an electrical assembly.

- After disconnecting the high-voltage line, it is necessary to discharge the amplitude current using a suitable earthing wire.
- Provision and use of rubber carpets to work on electrical works.
- A wooden ladder or a suitable self-supporting aluminum ladder with a rubber base shall be used while working at heights.
- When using mobile electric power tools, ensure that such tools are properly grounded.
- The competent department shall conduct an on-site verification of the above conditions and ensure that energy is disconnected from all sources supplied with electrical energy.
- After the completion/ suspension of works, the permit holder shall ensure that all persons working on the task are evacuated.
- All work tools/ devices must be moved from the workplace to a safe place.
- Temporary earthing connections or other available safety devices should be removed.
- The permit holder must sign the permit and return the same to the permit issuer.
- The permit issuer should sign the permit and assign the relevant technician to remove the provided signs prior to issuing the system safety permit and to re-switch (turn on) the circuit breakers, switches, connections or valves.

Electrical Power Systems Works

The following procedures outline the means necessary to prevent potential injury - such as trauma or burn injury - while working on electrical systems. sessment, as workers are often exposed to the following risks while working on electrical supply systems.

Personal protective equipment

The following protective equipment shall be used while carrying out works related to electrical power supply system resulting from the above-mentioned hazards. Therefore, the question of using more than one safety device depends on the nature and requirements of the work.


Electricity insulating gloves


Rubber boots and electro-resistant boots


Helmet


Belts, protection/ safety devices

Appendix (5): Working at confined spaces

The following must be adhered to in order to determine the maximum requirements to protect the health and safety of workers in confined spaces:

- This procedure shall be applied to all contractors and subcontractors who are forced to enter dangerous confined spaces within the Public

Establishment for Industrial Estates.

- The provisions of this procedures must be complied with when entering all confined spaces.

Procedure

The permit issuer must clearly identify the potential hazards resulting from working in confined spaces, and require the use of personal protective equipment or respiratory protection equipment during the execution of the task. The permit holder must comply with the instructions issued by the competent department and the following precautions must be taken when preparing to enter confined spaces:

- Lowering the pressure of the workspace if it is operated above atmospheric pressure.
- Cleaning and cooling the device.
- Disinfect the device with proper disinfection tools depending on the chemicals used in the device. Such as: Water, steam and air.
- Isolate and place warning signs on all energy sources such as electrical, pneumatic, hydraulic, mechanical and potential energy sources.
- Isolate all electrical power sources and all control devices in addition to placing warning signs and testing the same. All controls (power buttons and computer as needed) must be tested to ensure that they are not turned on. Please follow the procedures for closing or placing warning signs.
- Removed dielectric valves shall be kept in the office of the plant or the area, and its location must be marked in the valve box.
- It is also necessary to remove the spiral belt from the mechanical insulation equipment.
- All hazardous chemical connections shall be isolated. Please follow the procedures for closing or placing warning signs.
- Positive mechanical isolation is required by installing barriers that prevent the entry of toxic, flammable or corrosive chemicals. Do not rely solely on valve isolation where there is a possibility of the valve being activated or accidentally actuated by another person. Procedures for line activation are also required to install or remove barriers.
- The **"Danger - Do Not Operate"** sign shall be used after ensuring that the isolation is carried out correctly, and the permit issuer shall assign a serial number for all signs.
- Exhaust or air pumping device shall be provided for proper ventilation and comfort of personnel. The air pumping device with the air exchange capacity of 6 times per hour should be used and the exhaust should be directed outside the work space, and one point should be specified to pump fresh air near the person inside. The capacity should be prescribed on the device itself.
- For example, in order to provide prolonged ventilation with a minimum air exchange in the space of 6 times per hour, the following equation should be used:

$$\text{Ventilation duration (minutes)} = \frac{\text{Tank size } (m^3) \times 60 \text{ (min/h)} \times 6}{\text{Volume of air exiting the pumping (device } (m^3/h)}$$

The pumping device hose should extend throughout confined spaces to ventilate all corners.

- First, the hose must be placed through the designated hole. After ventilation of confined spaces, the pumping device should be closed and the technician should wait at least 5 minutes to measure the lower flammability limit and levels of oxygen. The top, middle and bottom of confined spaces should be checked (gases, vapors and fumes of lighter, heavier or of similar weight density).

Reading	Base
Lower flammability limit more than zero but less than 5%	Access to confined spaces is permitted.
Lower flammability limit is more than 5%	Access is prohibited*
Oxygen level between 19.5 and 23.5%	Access to confined spaces is permitted.
Oxygen level below 19.5%	Access is prohibited*
Oxygen level more than 23.5%	Access is prohibited*

An air-supplied breathing apparatus (face mask with air hose or self-contained breathing apparatus).

- The level of oxygen, flammable vapor, and toxic substances shall be monitored every two hours or as needed to ensure that no potential changes in confined space climate occur during the entry process, and

intermediate level test readings shall be added to the confined space access checklist form.

- All personnel working in the vicinity of the confined space area should be briefed on the work in progress.
- The foreman shall continuously monitor persons arriving at the confined spaces, and shall request another foreman to continue visual monitoring if their vision is blocked due to angles, barriers or any other obstacles, etc., and the second foreman shall be stationed outside confined spaces.
- The designated workers and foreman must be trained to access confined spaces.
- A self-contained breathing apparatus or face mask with an air hose should be ready for immediate use by the foreman.
- A person in confined spaces shall wear personal protective equipment or respiratory protection equipment specified through this procedure as a minimum.
- A person accessing confined spaces must wear a full fall protection belt with a lifeline. The other end of the lifeline should be attached to a fixed point and the foreman shall slowly operate the fall protection belt as needed by the person entering and exiting confined spaces. If possible, a wooden ladder or rope ladder can be provided. If a tripod or block is used, then the lifeline end must be attached to the tripod or block.
- The area surrounding the confined space must be cordoned off and marked to avoid unauthorized entry, in addition to reviewing all process and operations within the area surrounding the confined space area and closing areas containing hazards.
- The level of toxins must be measured, and the level may not exceed the permitted ratio and the permitted average exposure time (see the relevant Material Safety Data Sheet). The safe time period for exposure must be specified.
- The rope ladder shall be secured to the equipment or attached to a fixed structure.
- The temperature must be measured, and access to confined spaces is prohibited if the temperature is more than room temperature (or 45 degrees maximum).
- Only use a 24V flameproof flashlight to illuminate confined spaces and use exterior lighting. It is also necessary to guard the flashlight with a glass/ metal protection.
- A ground circuit breaker is required for all electric power hand tools. No electrical cable connections are allowed inside confined spaces.
- Appropriate arrangements shall be made for all lifeguards and the foreman.
- If gas cutting is required inside the ship or confined spaces, ensure that the gas cutting lamp is ignited before entering the ship or confined spaces, as well as check the lower ignition limit and ensure that the test is negative before entering the ignition lamp area.
- It is prohibited to ignite the gas cut-off lamp inside confined spaces. The flaming gas cut-off lamp shall be removed at the time of commencement of work and shall be removed immediately during breaks after completion of work. It is also prohibited to use gas cylinders in confined spaces. The lower ignition limit should be checked, i.e. >5%, before inserting the flaming lamp.
- Welding Works (spark test) shall be carried out on the designated tank

opening prior to commencing any of the Welding Works within confined spaces. It is prohibited to carry any flammable material in large quantity (more than 1 liter) inside confined spaces. It is also prohibited to carry out any kind of Welding Works while the flammable materials used for rubber lining works are inside the ship. Face mask with air hose is required while the rubber liner or fiber reinforced plastic liner works are being conducted.

Preparations for relief and rescue procedures from confined spaces or for the entry of the ship to the port

- The authorized person and the foreman must be aware of the risks that may be encountered the entry of the ship.
- A person entering a confined space must wear a full body harness with a lifeline.
- The person authorized to enter shall wear personal protective equipment or respiratory protection equipment as specified in this procedure and indicated on the permit.
- An authorized person must leave the confined space immediately when requested to do so.
- All hot work permits shall be suspended in adjacent areas.
- A wooden or rope ladder should be used to enter.
- An ignition-proof 24V flashlight is only used in the confined space and additional light must be provided from the outside. The lamp shall be protected a glass/ metal protection.
- The rescue team should consist of three people trained in rescue operations.
- Two people (rescue workers) should wear safety belts, a self-contained breathing apparatus kit, or an eye mask and descend one by one using a lifeline to provide assistance when needed.
- Before entering a confined space, rescuers should ensure:
    1. To perform pre-entry testing to ensure the suitability of the self-contained breathing apparatus kit or eye mask.
    2. To fasten the safety line or safety belt to a fixed point outside the entry opening.
    3. The foreman is prohibited from entering the tank unless the assistant arrives at the confined space.
- The foreman must be positioned on land near the entry opening to stay in contact with workers at sea and participate in the rescue operation, if necessary. The foreman should also be provided with a whistle to be used for emergency communication purposes.
- The injured person should wear a full safety belt so that the rescuer at sea can pull them out, as well as the foreman on land. Full-body safety belts with a lifeline of appropriate length shall be used in all confined spaces as rescue equipment. A mount and a confined space barrier shall also be used.
- The injured person must be transferred immediately to the first aid center. If breathing is irregular or stopped, the patient should be placed on CPR or given oxygen.
- After giving first aid or CPR if necessary, the injured should be admitted to hospital without any delay.

Personal protective equipment

Subject to the above risks, PPE must be used when entering confined spaces. However, the use of more than one equipment depends on the nature of the job and its requirements.

- Self-contained Breathing Apparatus
- Respirator with mask.
- Gas mask with filter or dust mask.
- Welding flame shields or goggles (as appropriate)
- Helmet.
- Chrome leather hand gloves, cloth and leather hand gloves, rubber or PVC hand gloves.
- Full body lifelines.
- Safety shoes
- Suit or overalls made of polyvinyl chloride.
- Exhaust air and fresh air pumping device.
- Flame-proof flashlight or flame-proof torch or flashlight with glass/ metal protection.

Appendix (6): Spray painting works

The following procedure is intended to provide practical guidelines on the control of occupational health hazards resulting from the spray-painting process.

Hazards Evaluation

- The supplier shall provide a copy of the Material Safety Data Sheet (MSDS) in respect of all materials used in the spray-painting process and the hazards as specified in the Material Safety Data Sheet shall be complied with (MSDS).
- Safe handling procedures should be followed for hazardous materials, and emergency procedures should be added to emergency training operations.
- All spray painters should be trained with regard to the correct use of fire extinguishers.
- A first aid box shall be provided and maintained in a fully prepared condition and provided to the custody of the person present who specializes in first aid.
- Eyewash facilities shall be provided and all personnel must be informed of their location.

Procedures

- Spray painting work shall not be assigned to any employee with a history of asthma or any other respiratory condition that prevents them from wearing a ventilator.
- Food and drink shall not be kept, prepared or ingested in spray paint compartments, paint mixing area, shading or any other contaminated area.
- Spray painters should wash their hands and face before eating, drinking

or smoking and at the end of the day.

- All spray painters shall be equipped with the necessary protective clothing, e.g. overalls, gloves, respirator.
- All spray painters shall be provided with a composite air purification filter consisting of a dust filter and an organic vapor absorbent cartridge. The respirator protective factor should also be of grade 10 protection factor.
- All contractors should conduct pre-employment health assessment and periodic health monitoring program for all employees.
- Spray painting should be carried out in a designated compartment.
- The spray compartment shall be maintained in accordance with the manufacturer's requirements and its performance tested and evaluated by the manufacturer or approved contractor at least once every twelve months.
- It is prohibited to carry out spray painting work when the automatic ventilation system is out of service.
- The correct balance of air and liquid must be maintained in the spray machine to reduce the size of the paint droplets and thus reduce the excess spray.
- Unnecessary machinery and equipment shall not be kept in the spray compartment/ area.
- In some compartments, a curtain of water is maintained on the wall to prevent paint from settling on the wall while the spray-painting work is being carried out. In such a case, the drain should be appropriately designed to avoid flashing and treat the water before it is discharged into the environment.
- The exhaust engine, its fittings and lighting shall be explosion-proof according to the standards applied to the control switches outside the compartment.
- The exhaust must pass through a debugger or scrubber before being discharged into the environment.
- Separate covered container should be provided for immediate disposal of filter elements and paint contaminated components/ parts. The compartment should also be clearly marked with the warning "Caution - do not ignite flames or use flammable materials here", and the waste should be disposed of by a licensed waste collector.
- The following procedures shall be followed for storing and handling paint and paint thinners:
    1. Flammable materials should be stored in tightly sealed containers, with clear labels indicating the nature of their contents
    2. Container lids should be replaced after each use
    3. Flammable storage areas should be ventilated
    4. The amount of spray coating material allowed in the painting area should be kept to a minimum and should not exceed what is required for daily painting operations.
    5. Flammable liquids should be stored in designated containers.
- A periodic health monitoring program should be established to ensure that spray paint workers are not exposed to adverse health effects from work and that they do not have a health condition that may prevent them from wearing a ventilator
- All spray equipment should be regularly cleaned and maintained in accordance with the manufacturer's instructions to protect the operator's health, reduce fire hazards and ensure optimal equipment performance.

- These cleanings should only be carried out inside the paint compartment with exhaust ventilation turned on.
- The filter parts of the automatic ventilation system for the paint compartment should be replaced in accordance with the manufacturer's instructions to prevent deposits that may reduce airflow below the required level. All waste filtration elements should be disposed of immediately in a separate tray.
- The spray machine and paint container should be depressurized before any maintenance.
- All cleaning parts used should be placed in metal containers with tightly sealed lids and moistened with water before being properly disposed of at the end of each working day.
- The compressor air receiver (pressure container) shall be inspected by a professional engineer or equivalent technician in accordance with local regulatory requirements.
- If there is a residual concentration of hydrocarbon vapor in the atmosphere, it is prohibited to use any sparking substances when carrying out maintenance work.

Appendix (7): Excavation Works Procedures

This procedure addresses the principles and methods aimed at reducing hazards or minimizing the risks resulting from excavation works. Excavation of deep vertical corridors, tunneling, boring and excavation of concrete foundations using blasting method are excluded from this procedure.

Hazards Evaluation

The permit issuer shall carry out a risk assessment prior to the issuance of the work permit. The following risks are common in most of the excavation works.

- Electrocution injury as a result of contact with a damaged active cable.
- Falling hazards.
- Objects falling on personnel working in the excavated area.
- A vehicle falls into a trench.
- Damaging or puncturing the subterranean pipeline. (Service Utilities and Fire Fighting).
- Damage or puncture of communication cables.
- Exposure to hypoxia or toxic gases.
- Falling rocks/ unstable soil.

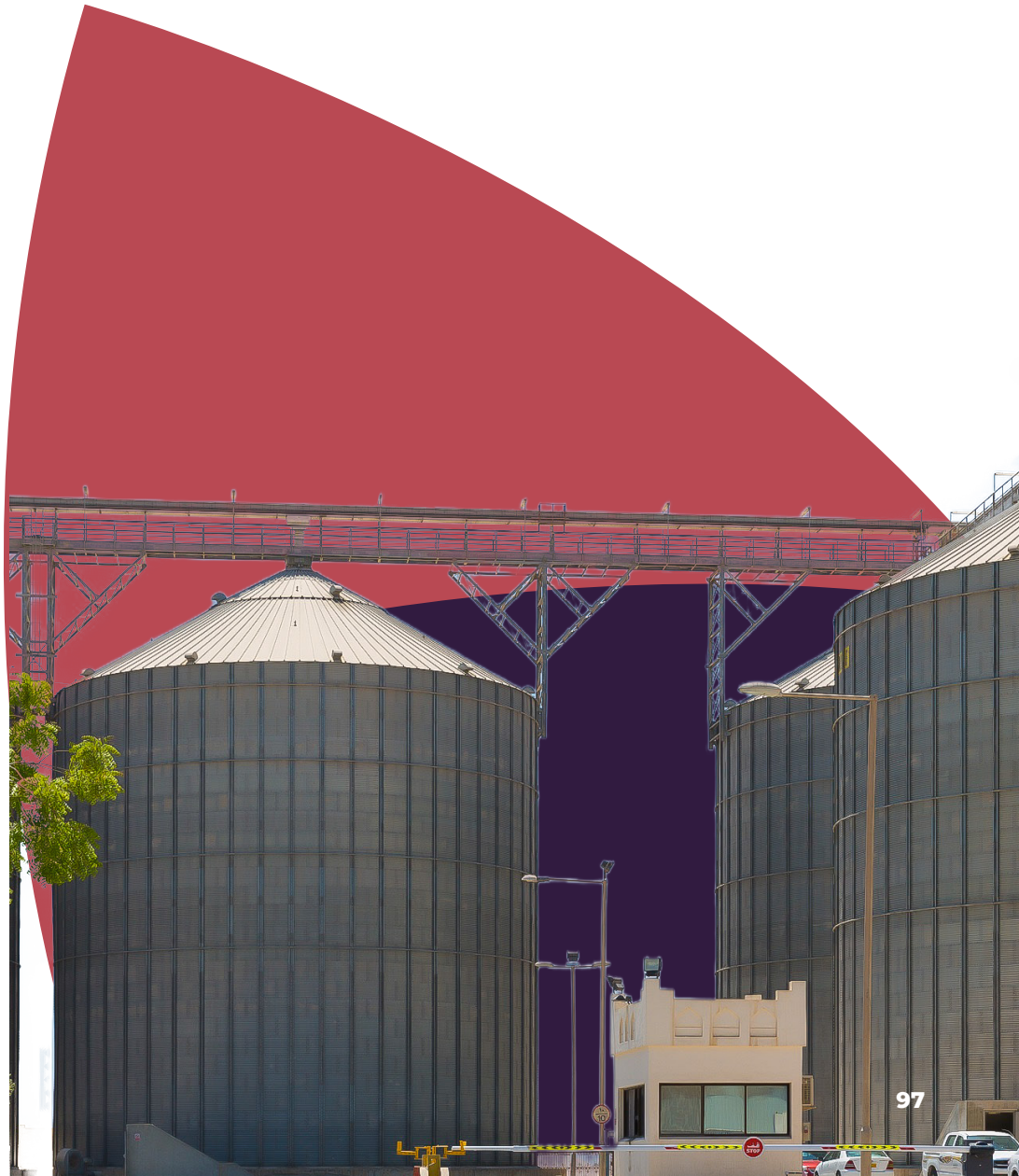
Procedures

When carrying out excavation works, the Contractor shall ensure the following:

- Preparation of detailed excavation plan, engineering review, planning and demonstration of excavation method, examine the properties of soil, types of machinery and other resources.
- Identify hazards associated with the activity and prepare a job safety assessment, as well as review the same on a daily basis considering site conditions and explain safety procedures or contingency plan during pre-work meetings.
- Obtain excavation permit specifying underground service utilities to be

removed which may include electrical cables, sewage pipes, water network pipes, etc. A cable detector can be used prior to the start of excavation work. The necessary permits must be obtained from the competent authorities in the event of any risks or additional activity.

- If unexpected service utilities are discovered during excavation, the Contractor shall stop the excavation works and notify the site supervisor immediately. Work may be resumed only after obtaining a further permit, in consultation with the competent person.
- In the event that a cable or service facility is found, the Engineer shall stop work until the excavation permit is obtained, and a trial trench should be excavated using only manual equipment. The depth of the trial trench should not exceed 1.5 meters in general or 2.0 meters in special cases in order to detect the presence of any cable, gas pipeline or other facilities. In the event that no cable or service lines of other facilities are detected through the trial trench, mechanical excavation may proceed to a depth of 1.2 m. The entire process shall be repeated for the next 1.2 m.
- Mechanical Excavation: Where all facilities or buildings are located by surface markings or hand drilled trenches, mechanical excavation may be proceeded under the close supervision of the site supervisor. No person shall enter the excavators traffic area.
- The electrical department of the plant or site shall test and verify the integrity of all equipment, electrical connections and machinery used in excavation.
- Adjacent buildings should be considered when proceeding with excavation work.
- All excavation work shall be reviewed periodically by a competent per-



son.

- Reinforcements and ramps are required for excavation works over 1.5m deep.
- Excavation nets and reinforcements shall be inspected by a competent person before starting work on a daily basis and after rainfall and storms. If there is evidence of possible caves or slides, all excavation works should be suspended until adequate precautions are taken to protect personnel.
- The excavated material shall be kept at least one meter from the edge of the excavation works and shall be transported away to the designated place. Alternatively, effective barriers or other retainers may be used to prevent excavated material or other objects from falling into excavated areas.
- The transportation plan of the excavated material handling vehicle shall be planned and approved.
- The power supply for all electrical equipment or light bulbs shall be equipped with ground circuit breakers (to be activated when 30 mA current leaks into the ground).
- Movement of heavy vehicles and cranes shall be within 1 meter or 1.5 times the depth of excavation - whichever is greater. Where vehicles or equipment operate in the vicinity of excavation work, the sides of the trench should be reinforced or supported as necessary to withstand the force to which they are exposed as a result of overloading. Panels or other large barriers should also be installed to protect the edge of the relevant trenches.
- During excavation works, if there is a possibility of water accumulation and if the excavation depth is more than 2.2 meters, a double rescue rope shall be used for the entire body and the rope should be supported with the adequate belt.
- Hand Tool Excavation: If underground pipes, cables, or structures are detected or suspected, the relevant trenches should be excavated using hand tools before using mechanical excavators. Excavation with hand tools is to be proceeded within 3 meters of the target and the excavation tools should be equipped with insulating handles.
- Ensure that there are no exposed active wires in work areas accessible to workers other than those authorized to work on active power lines. In case of excavation works exceeding 4.5 meters, it should be verified that suitable means of communication and proper ventilation are provided, and the prevailing climate within the excavated area should be monitored to ensure the availability of sufficient oxygen level (19.5% to 23.5%) and to verify any other toxic gases.
- Ensure that there are no vibrations from an external source that may affect the excavation works.

The excavation requirements are as follows:

Ramps

- All ramps should be excavated while ensuring the provision of the adequate angle of stability, except for areas where hard rock permits horizontal excavation or prior partitioning. The angle of stability must be neutralized when there are water conditions, silt materials, loose rocks,

areas showing erosion, deep frost movement and slip levels.

- Except for hard rock, excavation below the level of the foundation base of any foundation or auxiliary wall shall not be permitted, unless the wall has been reinforced and all other precautions have been taken to ensure the stability of the adjacent walls to protect the working personnel or those near the excavation works.

Reinforcement Process

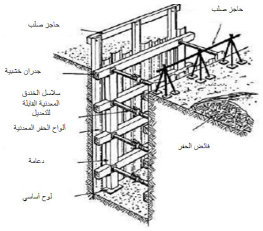
- Excavation shall be reinforced/ supported.

  Excavation works shall be reinforced to a depth of 1.5 meters or deeper, and unstable ground excavation works shall be reinforced.

  Either method should be used for reinforcement. However, regardless of the style, the materials used should be in good condition.

1. Wooden reinforcement - Intact, cavity-free and properly dimensioned planks shall be used.
2. Metal reinforcement – Galvanized steel sheet used for tensioning should be used strongly supported by steel bars or a 1.2-meter scaffold in the horizontal and vertical direction with a cross support, and should be installed appropriately. The protruding terminals of the scaffold pipes should also be covered.
3. Foundations, wooden reinforcements and other support means shall be designed to meet acceptable engineering requirements. When tie rods are used to constrain the top of sheets or other tensioning systems, the bars shall be securely fixed at the rear at the angle of stability.

- Adequate means of drainage should be provided through drainage manholes or other methods for supports extending below the groundwater table.
- When using tightly sealed tensioner, full loading due to the groundwater table shall be assumed, unless this is bypassed by the provision of openings, drains or any other means. Additional ties and supports shall be provided to allow for necessary temporary removal of individual supports.



Reinforcement by metal sheet

Hydraulic reinforcement

Wooden reinforcement

Safe Access

- Safe means of entry and exit of workers shall be provided. For example, unobstructed entry/ exit corridor, stairs, ramp, walkway, etc. should be provided.
- It must be ensured that the excavated area does not prevent the access of personnel and materials to the site with the necessary signage placed and displayed in the appropriate locations. An alternative route for traffic should be provided (with appropriate signage) in case of road blockage.

The trench must be provided with a standard and fixed ladder to facilitate safe entry/ exit if the depth of excavation is 1.2 meters or more.

- Trenches with a depth of 1.2 meters or more should be equipped with spaced ladders so that the lateral travel of the employee up to the ladder does not exceed 8 meters, and the height of the ladder should extend up to 1 meter on the surface of the ground and this ladder must be secured.

1. Mud, sand or gravel should not accumulate on the track or road.
2. Suitable walkways over the pits should be provided for pedestrians so that they can move from side to side, and theses walkways must be equipped with at least two grids of steel grating fixed on horizontal stands with guardrail.
3. The slope of the excavation vehicle roads should not be more than 1:10.

Safe Access Platforms

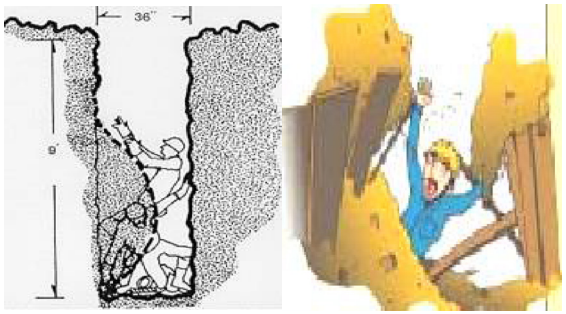
Barriers

- Excavation areas should be fenced and barricaded to prevent personnel and others from falling, and a warning sign in Arabic, English and other appropriate languages should be displayed in prominent places.
- No trench, drain, or other excavation site should be left without fences overnight, and appropriate warning sign such as fluorescent warning tapes and flashing red lights should be provided to warn personnel during the night.
- Adequate lighting (minimum 25 lux) should be maintained day/ night according to the site condition until the area becomes visible.
- For guide barriers (depth less than 1.0m) – they should install 1.8 m from the edge of the excavation site (plastic tape and sign board) and the barrier tape should be installed at two levels of height i.e. 0.5m and 1.0m from the ground.
- For guard barriers (more than 1.0m in depth) – barriers should be installed at least 1.8m from the edge of the excavation site, and these guard barriers should withstand 100kg of load/thrust and rigid and installed on horizontal stands at a height of 0.5m and 1.0m respectively from the ground surface with suitable vertical supports. The remoteness and distance of these barriers can also be reviewed and placed farther than 1.8 when circumstances so require.
- If barriers or parts thereof are removed, they should be replaced as soon as practicable, and persons should be placed to warn personnel until such barriers are replaced.

Barricading Excavation Areas

Precautions against collapse, leakage and similar risks

- Caution should be exercised when it rains or when there are water leaks from adjacent areas, as special gratings barricades should be located away from the excavation site whenever possible.
- When the job involves cutting and shearing, a specialized engineer must design the necessary supports.
- If there is evidence of caves, slides or ramps, all excavation work should be suspended in order to provide further protection to the workers.
- It shall be ensured that there are no scaffolding or temporary structures adjacent to the excavated area or drains unless adequate measures are taken based on a formal risk assessment.



Caves/ Slides and Cliffs

Dewatering

- Necessary measures shall be taken to ensure proper drainage of the area adjacent to the excavation works. Water diversion channels, dams, or other suitable means may be used to prevent surface water from infiltrating the excavation area.
- Workers are prohibited from working in excavation areas where water is present or accumulates until appropriate risk mitigation precautions are taken.
- To prevent water flowing in a reverse direction into the pit, water drainage shall be directed into the pit in a remote location.
- If excavation works disrupt natural flow of surface water, water diversion channels, dams or other suitable methods shall be used to obstruct the entry of surface water into the excavation area.

Emergency Rescue

- The supervisor shall inform the employees of the location of the first aid kit and the designated assembly points of the site.
- Emergency rescue equipment, such as breathing apparatus, safety harnesses or portable basket, shall be accessible in cases of exposure to hazardous weather conditions or when there is an anticipation of atmospheric changes during work at drilling sites. Therefore, this shall be available for use.

Trenching Requirements

- Trenches with variable or soft material sides, and those with a depth of 1.5 meters or more, shall be reinforced, covered with slabs, or supported in a secure manner that it is sufficiently secured to protect workers inside. Alternatively, sloping the sides of the trench may be done above the level of 1.5 meters to prevent collapse, with a slope ratio not exceeding 0.3 meters horizontally for every 0.15 meters vertically.

- The materials used for covering, reinforcement, reinforcement and reinforcement must be in good condition during use, ensuring the safety of wood materials, which shall be free of large openings (the wood used shall meet at least Grade No. 2 standards). Effective installation and fixing shall extend to the bottom of the excavation place.
- Trenches shall be reinforced and supported during excavation work.
- Cross beams or trench supports shall be correctly positioned horizontally and spaced vertically to prevent slipping or collapsing.

Appendix (8): Procedures Pertaining to Welding and Cutting Works Using Gases

Gases Properties

- Oxygen gas, though inherently non-flammable, promotes and supports accelerated combustion, so it can be very dangerous, especially in confined spaces where swift volatilization is impeded. Adding only a small amount of oxygen can also lead to the risk of a violent fire from any stray spark or welding flame due to normal weather conditions and conditions.
- Acetylene is a highly flammable gas that forms an explosive mixture in the air and can be released and ignited via any proximate spark, flame, or thermal source. Hence, it is imperative that all connections, especially those associated with gas cylinders, are hermetically sealed, hoses are maintained in good condition, and all valves are securely closed upon the completion of works.
- LPG is a mixture of butane and propane, which is highly flammable and heavier than air as it flows at floor level and settles in low places such as cellars and pits.

Gas Cylinders

- Acetylene cylinders are laden with a permeable substance, namely charcoal or an acetone-soaked clog material. It is imperative that these cylinders are consistently maintained in an upright position due to the nature of their design. These cylinders typically operate at a pressure of 250 psi with a volume of 8.5 cubic meters. The utilization of copper piping in connections shall be avoided as they will react with acetylene.
- Oxygen gas shall be confined within pressurized cylinders up to 2200 psi, volume 6.9 m3.

Storage of Oxygen and Fuel Gas Cylinders

- The flooring of the storage area shall maintain a level surface devoid of undulations.
- Gas cylinders shall be kept away from heat sources.
- Cylinders shall be stored in a dry, secure, well-ventilated place, away from highly flammable materials.
- Defined locations for cylinder storage shall be designated, away from stairs or walkways, and placed within areas that safeguard them against
- potential harm or falling due to passing or falling objects.

  Storing cylinders in unventilated enclosures, such as cabinets or closets, is strictly prohibited.

- The storage of oxygen cylinders and those containing flammable gases, such as acetylene and hydrogen, within the same room is expressly prohibited.
- All gas cylinders must always be stored vertically and secured by chains to prevent falling.
- All cylinders shall be protected from excessive temperatures, and may be stored in outdoor places, provided that adequate protection against adverse weather conditions is assured. -Cylinders stored in outdoor places shall be secured from continuous direct sunlight.
- Cylinders containing oxygen gas shall be stored separately from fuel gas cylinders, maintaining a minimum separation distance of 3 meters between their respective storage areas.
- The utilization of full oxygen and fuel gas cylinders shall adhere to a strict rotation schedule, as per the supplier.
- Filled and empty cylinder valves shall be closed.
- The valve protection covers, if any, shall always be in their designated place, ensuring they are tightly sealed except during cylinder utilization or when connecting cylinders for use.

Welding Machine

- All welding cables must possess full flexibility and insulation, alongside the capability to meet the maximum current demands of ongoing works.
- When connecting or attaching cables, large insulated conductors, with a capacity at least equal to that of the cables, must be used. In instances where cable lugs are used for connections, these lugs shall be fastened

securely using bolts to establish a robust electrical connection. Moreover, exposed metallic components of the lugs must be completely isolated.

- The welding wire shall be securely fastened to the workpiece and shall be shortened whenever possible.

Manual Electrode Holders

- Any parts carrying a current that passes through the holder's parts shall be completely insulated to withstand the highest voltage directed towards the grounding, specifically, those parts that the welder directly grasps. It is also recommended, whenever feasible under service and working conditions, to insulate all metallic or current-conveying parts, including the strips responsible for securing the electrodes.
- The cable shall be remained devoid of any defects or connections within a minimum distance of 3.0 meters from the pole holder.

Grounding Method

- The welding current shall be reconnected to the welding machine using a single cable connecting the workplace to the welding machine. It is permissible to establish a cable connection from the welding machine using a joint conductor or a structure affiliated with or connected to the workpiece.
- Utilizing pipelines containing flammable gases or liquids, as well as conduits carrying electrical conductors with an earth return circuit, wire rope, reinforcing bars, and similar materials, for the conduction of welding current, is strictly prohibited.
- All grounding connections shall undergo inspection to ensure mechanical and electrical strength and durability commensurate with the required current capacity.

Electric Shock

To prevent electric shocks the following precautions shall be taken:

- Welders operating electric arc welding equipment shall have comprehensive knowledge of safety-related requirements. They shall be well-versed in the causes of electric shock and the measures to mitigate such risks.
- Although the voltage essential for the operation of arc welding equipment is low, the mishandling of welding cables, electrode holders, and other welding machine components remains a plausible hazard. It is crucial to note that this voltage, under certain circumstances, can be life-threatening. This risk escalates in sweltering weather conditions, particularly when the welder perspires or when the environment is damp or wet.
- Throughout the welding task, the welders shall insulate their bodies from both the workpiece and the metallic electrode, along with its holders. This necessitates the use of suitable safety shoes, gloves and an apron (as needed).
- Harmless contact with the electrode in one case does not guarantee similar outcomes in other situations.
- When the electrode is not in use, it shall be removed from the holders in order to prevent the risk of electrical contact with conductive persons or

objects. Additionally, electrode holders shall be placed in a manner that reduces the likelihood of electrical contact between them and individuals or conductive objects when they are not used.

- The Instrumentation engineers shall regularly inspect the welding machine to ensure that the electrical connections and insulation on the holders and cables are in good condition.
- Any suspected unsafe conditions shall be reported immediately to the Instrumentation engineers, the use of such welding equipment shall be ceased until its safety is confirmed. Any necessary repairs shall exclusively be undertaken by qualified personnel.
- The (secondary) welding terminals shall be organized in a manner that precludes inadvertent or unintended contact with current-carrying components.

Operations & Maintenance

- Welding equipment shall be kept safe at all times; therefore, periodic inspection shall be carried out.
- The printed rules and instructions related to the way of operating and maintaining the welding equipment provided by the manufacturers shall be strictly followed.
- The power supply to the welding equipment shall be disconnected when the welder departs the work area, halts work temporarily, or relocates the machine. -The appliance shall also be disconnected from the power source when it is not used.
- Welding equipment necessitates maintenance to ensure its mechanical and electrical integrity, thereby avoiding unnecessary hazards.
- Welding equipment used in outdoor places shall be protected from volatile weather conditions. Protective covers shall not hinder the required ventilation process to prevent the machine from overheating. During periods of non-use, the appliances shall be stored in clean and dry places. Any equipment exposed to moisture shall undergo thorough drying before utilization.
- Periodically, generator-type welding machines shall be meticulously cleaned using clean, dry compressed air.

Cables and Connectors

- In the event that welding cables become corroded during work, leading to the exposure of bare and uninsulated cables and conductors, the exposed part shall be adequately insulated with heat-resistant tape.
- Welding cables shall be kept dry and free of grease and oil to prevent premature damage to insulation materials, if possible.

Fire Prevention and Protection during Cutting and Welding

Before conducting gas cutting or welding operations, the workpiece shall be moved to a secure location or the combustible and flammable materials shall be removed from the workspace. Furthermore, adequate ventilation shall be conducted in areas where welding fumes may accumulate. If the material is flammable and cannot be transported, it shall be protected from direct contact with flame, heat, sparks or hot slag. Suitable protectors or covers such as metal plates, metal fiber plates, or fire-resistant blankets

shall be used for this purpose. In such instances, a welding work permit is required. Protectors or covers shall be used to prevent cylinders from being exposed to hot particles passing through openings in floors and walls. Fire extinguishers and water buckets shall be kept nearby.

Prevent Gas Leakage from Gas Cut-off Tools

- Hoses shall be kept clear of sharp edges and abrasive surfaces, over which vehicles may pass.
- Hot metal or spray shall not come into contact with hoses.
- Gas cylinders shall be securely chained and stored vertically to avert potential falling or collision hazards. These cylinders can be affixed to a wheeled cart, for example, wall mount, or by using other suitable support.
- The gas supply must be switched off at the cylinder upon task completion.
- All equipment shall be kept in good condition.
- All connections and equipment shall be inspected regularly to detect and rectify any malfunctions or leaks.
- Gas cylinders must not be placed in inadequately ventilated spaces or confined areas.

Welding or Cutting Empty Diesel or Gasoline Tanks.

Welding or cutting operations on oil drums, automotive fuel tanks, or any other containers, particularly those, especially those that may contain flammable liquid and gas, are strictly prohibited. If welding or cutting these tanks becomes necessary, the following precautions shall be taken prior to commencing work:

- All grease shall be removed from the tanks using alkaline solution or a suitable degreasing agent.
- Subsequently, the tanks shall undergo a thorough hot water rinse and be allowed to dry over a span of several days.
- Tank lids shall be opened.
- A minimum of three-quarters of the tank capacity shall be filled with water prior to initiating welding operations.

Spray Protection

Spray protection works, if any, shall be maintained continuously during welding or cutting work. In cases where welding or cutting is to be conducted in proximity to automatic sprinkler heads, temporary safeguards such as asbestos plates or wet cloth guards shall be used to protect individual threads.

Personal Protective Equipment (PPE) or Respiratory Protective Equipment

While conducting welding work, the following safety equipment shall be utilized in accordance with the preceding instructions:

Safety helmet.

Protective face mask, respirators and safety goggles.

Full body safety harness.

Safety shoes or rubber boots.

Hand gloves made of chrome-tanned leather or those made of fabric and leather.

Appendix (9) Civil Works Procedures

Identifying HSE Risks

Prior to commencing any civil works, the Contractor shall identify HSE hazards pertinent to the works. This identification shall be conducted through a comprehensive job safety analysis or by employing a hazard and risk assessment methodology, as necessary.

Assessment of Anticipated Risks

The following are common hazards typically encountered at construction sites:

- Electric Shock
- Burns
- Fire and explosions
- Falls from elevated places.
- Contact with hot objects.
- Excessive noise.
- Dust emissions.
- Trenches and excavation sites.
- Presence of Nails and Construction Materials on Site
- Moving heavy equipment.

The hazards may include one or more of the above mentioned depending on the nature of the civil works.

Selection of Competent and Skilled Personnel

The appointment of competent and skilled personnel shall be guided by the work safety analysis or risk assessment, which identifies the specific risks and their associated types. Contractors shall ensure the selection of qualified and skilled personnel for their teams in accordance with the identified risks. This selection process shall consider that these personnel possess the requisite technical qualifications and expertise.

Personal Protective Equipment (PPE) or Respiratory Protective Equipment

During civil works, one or more of the following safety tools shall be used, taking into consideration the previously identified hazards. The utilization of safety devices is contingent upon the specific nature of the task and the associated risks:

Safety helmet.

Goggles or safety goggles (shields for welding as required).

Hand gloves.

Safety harness or harness equipped with a life-line to prevent falls when working at elevated locations

Safety shoes

Earplugs or earmuffs.

Flame-resistant clothing (essential in areas with high Lower Explosive Limits - LEL)

Dustproof mask

HSE Risks Communication

All contractual personnel shall be informed of the HSE risks related to, as well as the potential consequences that may occur if HSE guidelines and directives are not adhered to. This shall be communicated through work instructions or through detailed instructions provided to the Contractor.

HSE Requirements Training Courses

All contractors shall organize an HSE induction training program for all their personnel, especially those who are engaged in hazardous or high-risk operations. Introductory training shall include practical demonstrations, visual presentations, and case studies, which shall encompass prior incidents occurring on-site or in other locations. Following the conclusion of the induction training, an evaluation shall be undertaken through formal feedback sessions.

Work Permit Systems

The Contractor's Safety, Health, and Environment Representative shall conduct a daily assessment of the work site prior to commencing any works. Work permits shall be issued for the necessary number of workers and for the required duration. Each Daily Work Permit shall be either closed or renewed, depending on the type of work required.

Appendix (10): Procedures for Preparatory Measures Activities

The purpose of this standard is to provide principles and methodologies with the intention of reducing or minimizing risks stemming from preparatory measures (general care activities, organization, cleaning and maintenance). This standard applies to all sites affiliated with Madayn.

Risks Evaluation

Common risks related to preparatory measures are as follows:

- Tripping, slipping or falling.
- Sources of fires.
- Objects falling due to inadequate storage practices.
- Electrical shock hazards leading to fatalities.
- Bad smells
- Dust Emission.
- Health problems
- Safe use of chemicals.
- Storage Practices
- Correct cleaning agents.
- Malfunctioning machinery.
- Defective furniture.
- Inadequate lighting (visual fatigue).
- Improper ventilation system.
- Risks may include one or more of the above risks depending on the nature of the preparatory measures activities.

Procedures for General Preparatory Measures

- Identification and maintenance of housekeeping requirements and procedures.
- Identification of equipment and consumables in accordance with work area requirements.

- Recognition of specific requisites for various preparatory measures activities.
- Ongoing monitoring of work sites.
- Maintenance and proper storage of equipment and supplies for preparatory measures.
- Conducting preparatory measures duties in adherence to workplace procedures.
- Development of checklists and routine inspection of work areas to ensure compliance with workplace standards.
- Keeping records of preparatory measures
- Immediate reporting and rectification of identified issues, errors, and malfunctions.
- Implementation of required precautions and actions to mitigate, manage, or eliminate vulnerabilities.
- Monitoring work activities as per planned schedule.
- Amending works depending on different operational emergencies and risk situations

Electrical Power Systems, Street Lighting, Access Control and Backup Generator Sets

- Electrical systems, including all equipment and fixtures, shall be fully operated and maintained in accordance with the Operation and Maintenance Manuals.
- All connections shall be inspected to identify any signs of overheating, cracked or damaged connectors, or any indications of wear, including tracking or concavity.
- Insulation tools shall be inspected for signs of damage, cracking, peeling, or overheating.
- All electrical rooms, electrical equipment in outdoor places, electric shaft doors, meter boxes, etc. in units and apartments shall be closed at all times, with access restricted exclusively to authorized personnel.
- Connections and connectors shall be ensured to be are clean and dry.
- All meters shall be checked periodically to ensure their proper functionality and accurate readings.
- All lighting fixtures, including stars, lamps, ballasts, starters, transformers, couplings, etc. shall be insured to be in optimal working condition.
- Any replacements shall be carried out promptly.
- The grounding system shall be maintained to ensure the continuity of the grounding at all points in the electrical system, up to the main distribution board at each outlet. This entails the essential maintenance of all ground pits, including necessary irrigation measures and others.
- Measures shall be taken to facilitate the work of the statutory inspectors by conducting regular checks at specified intervals, ensuring the validity of all licenses and permits at all times.
- Monthly monitoring records, inspections and installations of electrical and mechanical equipment shall be maintained.

Fire and Alarm Systems

- Ensure that all smoke and heat detectors, as well as sprinklers, are maintained in perfect working condition at all times. Regular inspections

shall be conducted to verify that alarms are functioning as intended.

- The condition of the Fire Alarm Control Panel shall be checked every day.
- The fire reserve tanks (both underground and aboveground) shall consistently remain full and shall not be repurposed for other uses.
- The ventilation and smoke exhaust system shall be operated periodically to guarantee its proper operation.
- Proper maintenance shall be carried out for all indicators, panels, alarms and emergency devices.
- The monthly inspection of the fire extinguisher shall be carried out, with semi-annual inspection for maintenance and refilling as required.
- All types of fire extinguishers shall be operated periodically and a record shall be kept of expiry dates and replacements.
- Monthly maintenance of the fire alarm system and firefighting system shall be carried out.
- The condition of the fire and spray pumps shall be checked and maintained on a monthly basis.
- A record of the details of the services provided shall be kept.
- Fire training and alarm testing shall be done twice a year.

Lifts, HVAC and Pumps

- The entire system of HVAC, lift and pump shall be operated and maintained in accordance with the operation and maintenance manuals and specifications provided by the original manufacturers or installation contractors.
- Daily inspections of lifts, HVAC systems, and pumps are mandatory. Periodic inspection of all installed equipment, such as radiator, AHUs, pumps including piping and complete piping, shall be conducted to ensure that they operate within the designated parameters as stipulated upon delivery.
- Detailed records of all service shall be maintained.
- Regular weekly maintenance, including minor repairs and regular cleanings of filters, coils, and GRP tanks, shall be carried out. Address any malfunctions promptly.
- Regular inspection for various valves within the piping system, cracks, proper water level in the installation tank, pipe joints, etc. shall be carried out.
- Noise levels in the ventilation system shall be checked.
- Monthly monitoring and maintenance of lifts, HVAC systems, and pumps shall be carried out.

Cleaning of Floors, Toilets, Outdoor Areas, Facades and Waste Collection

- All bathrooms, factory rooms, ladders, lobbies, office premises, meeting rooms, walls, interior glass, false ceiling, stores, furniture, computers, equipment, etc. shall be cleaned and maintained, in accordance with the approved procedures and schedule.
- The assigned manpower shall be available to carry out the cleaning tasks within each designated timeframe.
- Outdoor areas such as roads, signs, walkways, substations, pump rooms, parking canopies, and others shall be cleaned and maintained. Food must be kept clean and safe in canteens and kitchens, in accordance with HACCP and ISO 22000 standards.

- Thorough cleaning shall be performed at regular intervals.
- Facades shall be thoroughly cleaned on a quarterly basis.
- Waste shall be gathered and dumped in storage bins within buildings.
- Waste collection and disposal shall occur daily or as required.
- Waste containers shall be emptied daily and replaced when necessary.
- Garbage bins and adjacent areas shall undergo daily inspection, rubbish and trash shall be removed as needed.
- Routine preventive maintenance procedures shall be carried out, including inspections to identify cracks, leaks, and other issues that could disrupt system functionality (this can be carried out during the cleaning process).
- Defective equipment identified during inspection shall be promptly repaired.
- Records of inspections and maintenance activities shall be documented and archived.
- Personnel shall be educated on preventive maintenance inspections.
- Appropriate erosion and sediment control practices are used during repair work.
- Catch ponds shall undergo at least annual inspections during cleaning activities.

Landscaping (Plants, Pest Control, and Others)

- Ensure watering of plants, as well as trimming of grass, hedges, shrubs, and tree branches when required.
- Plant waste shall be disposed of daily.
- Transplants shall be implemented three times a year.
- The soil shall be ploughed and fertilized with each planting process.
- Regular inspections and maintenance of sprinkler and irrigation systems shall be carried out.
- Clean and cultivate the area around trees and add organic fertilizers twice a year.
- Monthly maintenance shall be ensured.

Pest control

- The pest control process shall adhere to the principles and guidelines of Integrated Pest Management (IPM).
- Under controlled and safe conditions, insecticides, pesticides, and fungicides may be applied, if necessary.
- The container shall be sealed, being transferred to unspecified containers is strictly prohibited.
- Pesticides and fungicides shall be stored in designated chemical storage areas, according to a safety data sheet.
- Comprehensive treatment reports, spray logs, and a customer logbook shall be prepared daily.
- Treatment schedules must be maintained to ensure control of the breeding cycles of all pests.
- Bait Stations shall be maintained for rodent control.
- Ensure that staff accommodation is free of cimex lectularius.
- Thorough inspections of all buildings shall be carried out to ensure that they are free from termite infestations, the investor and Madayn shall be informed if any issues are identified.

The Required Personal Protective Equipment (PPE)

- Transplants shall be implemented three times a year.
- The soil shall be ploughed and fertilized with each planting process.
- Regular inspections and maintenance of sprinkler and irrigation systems shall be carried out.
- Clean and cultivate the area around trees and add organic fertilizers twice a year.
- Monthly maintenance shall be ensured.

Hand gloves.

Goggles or safety goggles.

Hand gloves.

Safety shoes.

Dustproof Mask.

END OF THE ENGLISH VERSION