

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

Approved by:
Planning & Development
Director:



ADWEA HSE PROCEDURE MANUAL

**IDENTIFICATION & EVALUATION OF HSE ASPECTS/HAZARDS
AND RISK ASSESSMENT PROCEDURE**

Written by: _____ **Date :**
HSE SPECIALIST

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PLANNING & DEVELOPMENT DIRECTOR

Effective Date:



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Page 2 of 12

**IDENTIFICATION & EVALUATION OF HSE
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Approved by:
Planning & Development
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TABLE OF CONTENT

PAGE

AMENDMENTS SHEET

3

1. PURPOSE

4

2. SCOPE

4

3. RESPONSIBILITY

4

4. REFERENCES

4

5. DEFINITIONS

4

6. PROCEDURE

5

7. DOCUMENTATION

9



**ABU DHABI WATER AND ELECTRICITY
AUTHORITY (ADWEA)**

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Effective Date : 18.06.2009

Volume	Chapter	Version
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Page 4 of 12

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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1. Purpose

The purpose of this procedure is to establish a uniform and consistent method for the identification, evaluation & control of Occupational Health, Safety & Environmental aspects/hazards within ADWEA's business activities. This shall ensure the appropriate methodology is adopted :

- To identify HSE aspects/hazards related to the activities, products & services.
- To determine the risks associated with the identified hazards.
- To indicate the level of risks related to each hazard/impact.
- To identify any risk control measures needed.

2. Scope

This procedure shall apply to all activities, products & services that are under the control of ADWEA. It shall be applicable to each relevant level & function of ADWEA for the implementation of this process.

3. Responsibility & Authority

The HSE Specialist and Heads of each relevant Division/Department or the persons nominated on behalf of them are responsible to identify and evaluate HSE aspects/hazards and assess the risk associated with all types of activities within ADWEA's control.

4. Reference Documents

ISO 14001 – 2004 Environmental Management Systems Requirements
OHSAS 18001 – 2007 Occupational Health, Safety Assessment Standard.
ADWEA Risk Management Guidelines (volume 19 chapter 9)

5. Definitions

Shall, is taken to mean mandatory requirement.

Should, is taken to mean a requirement to be met to the greatest extent practicable.

May is taken to mean a requirement to be met open to the discretion of the authorised person.

Standard is taken to mean National Standards, manufacturer specifications, drawings or equivalent.



**ABU DHABI WATER AND ELECTRICITY
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Effective Date : 18.06.2009

Volume	Chapter	Version
19	22	2

Page 5 of 12

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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Statutory requirements, is taken to mean laws, regulations applicable in the United Arab Emirates

Aspect, An aspect is an element of an organisation's activities, products or services, which interact with occupational health, safety and environmental performance i.e., shall have a potential effect on environment and have a significant occupational health & safety risk.

Hazard, Source, situation, or act with a potential for harm in terms of human injury or ill health, or a combination of these.

Ill Health, identifiable, adverse physical or mental condition arising from and/or made worse by a work activity and/or work –related situation.

Risk, Combination of the Likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health that can be caused by the event or exposure(s).

Acceptable Risk, Risk that has been reduced to a level that can be tolerated by the organisation having regard to its legal obligations and its own HSE policy.

Consequence (or severity), Is the loss that can be inflicted if the hazard event occurs.

ALARP- means to reduce a risk to a level which is 'As Low As Reasonably Practicable' and involves balancing reduction in risk against the time, trouble, difficulty and cost of achieving it. This level represents the point, objectively assessed, at which the time, trouble, difficulty and cost of further reduction measures become unreasonably disproportionate to the additional risk reduction obtained.

6. PROCEDURE

6.1 The Hazard/ Aspect based approach

This approach has the advantage of focusing on a particular hazard / aspect of all of the jobs within ADWEA premises or department. The hazard-based approach can work well for specific assessments where the assessment exercise is confined to particular hazards, such as manual handling, hazardous substances, workplace noise, display screen equipment (VDU workstations), etc.

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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Planning & Development
Director:

6.2 Identification of HSE Aspects/Hazards and Impacts

All divisions will identify the environmental aspects and OH&S hazards for each of their process or activity. All inputs to and out put from the process / activity as well as sub-processes within the system shall be considered

Each aspect/hazard will be examined to determine how it interacts with the HSE and such interactions, whether beneficial or adverse, are listed as impacts. Based on each activity, associated risk will be assessed and listed as per the stipulated criteria.

Identification of hazards and Risk assessment procedures take into account the following issues:

- Routine and non-routine activities.
- Activities of all persons having access to workplace (including contractors and visitors)
- Human behaviour, capabilities and other human factor.
- Identified Hazards originating outside the workplace which capable of adversely affecting the health and safety of persons under the control of ADWEA within the workplace.
- Hazards created in the vicinity of the workplaces by work related activities under the control of ADWEA.
- Infrastructure, equipment and material at the workplace, whether provide by ADWEA or other.
- Changes or proposed changes in the organization, its activities or materials.
- Modification to the HSE management system, including temporary changes, and their impacts on operations, process, and activities.
- Any applicable legal obligation relating to the risk assessment and implementation of necessary control.
- The design of work areas, process, installation, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities.

All division will insure the participation of all employees by their appropriate involvement in hazards identification, risk assessment and determination of control.

6.3 Evaluating & Classification of HSE Aspects/Hazards (Qualitative)

After identifying all HSE Hazards/aspects, these identified hazards/aspects shall be determine whether they are High, Medium or low risk using the qualitative approach.

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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Director:

The qualitative approach also uses a risk potential matrix as a guide in determining risk potential. The matrix as depicted in Figure (1) facilitates quick reference and assignment of risk levels for each of the three risk categories (High, Medium, Low). Thus hazards identified during audits, inspections, reviews, accident/incident investigation, qualitative risk assessment etc. may be assessed using this matrix.

Figure (1)

					Probability								
					A	B	C	D	E				
Severity	People	Assets	Environ-ment	Repu -tation	Improbable Has occurred in world wide industry but not in ADWEA Group Companies	Remote Has occurred in other ADWEA Group Companies	Occasional Has occurred specifically in the concerned Company	Probable Happens several times per year in this specific Company	Frequent Happens several times per year in same location in this specific company				
5. Catastrophic	Multiple fatalities Or permanent Total disabilities	Extensive Damage	Massive Effect	Inter- national Impact		HIGH RISK							
4. Severe	Single fatality Or permanent Total disability	Major Damage	Major Effect	National Impact									
3. Critical	Major injury Or health Effects	Local Damage	Localised Effect	Consider- able Impact						MEDIUM RISK (ALARP)			
2. Marginal	Minor injury Or health Effects	Minor Damage	Minor Effect	Minor Impact									
1. Negligible	Slight injury Or health Effects	Slight Damage	Slight Effect	Slight Impact						LOW RISK			

The risk matrix is divided into three risk categories as defined below:

High Risk: Unacceptably high

This level of risk exposes the Company to intolerable losses to People, Assets, Environment or Reputation. The hazard should be eliminated or its risk reduced to tolerable levels immediately.

ACTION MUST BE TAKEN IMMEDIATELY TO LOWER THE RISK.

Medium Risk: Acceptable but must be managed at ALARP

The hazard(s) must be managed to reduce the frequency and/or the severity of the hazardous events to ALARP.

Risk reduction measures must be planned and documented.

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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Low Risk: *Acceptable without required further action.*
Correction(s) may be applied as resources allow.

While assigning any HSE hazard/aspect as High, consideration shall be given to criteria such as:

- Whether the hazard/aspect is identified in the policy
- Whether the hazard /aspect is governed by legal and other requirements
- Whether the hazard/aspect is of concern to local community or interested party
- Whether the hazard/aspect is likely to be hazardous to health, property or environment
- Any HSE hazard/aspect, which is not subjected to the above criteria, shall not be considered in assigning for significant HSE aspect.
- HSE hazards/aspects that are within the stipulated criteria shall be subjected to further review before assigning significance. The following points are considered in the review:
 - Whether it is under the control of the company
 - Nature & scale of impact on human health as well as to the environment
 - Frequency of occurrence
 - High adverse environmental impact.

Detailed breakdown of consequences for the four Risk Management Categories

1. People

Severity	Description
5	Multiple fatalities – from an accident or occupational illness e.g. poisoning
4	Single fatality or permanent total disability – from an accident or occupational illness e.g. poisoning
3	Major injury or health effects (including permanent disability) – affecting work performance in the longer term, e.g. prolonged absence from work. Irreversible health damage without loss of life, e.g. noise induced hearing loss, chronic back injuries.
2	Minor injury or health effects – affecting work performance, e.g. restriction to activities (restricted work case – RWC) or need to take a time off work to recover (lost time incident – LTI). Limited, reversible health effects, e.g. skin irritation, food poisoning.
1	Slight injury or health effects (including first aid case – FAC and medical treatment case – MTC). Not affecting work performance or causing disability.

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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Planning & Development
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2. Assets

Severity	Description
5	Extensive damage – substantial or total loss of operation (costs in excess of US\$ 10,000,000)*
4	Major – partial operation loss (2 weeks shutdown, costs up to US\$10,000,000)*
3	Local damage – partial shutdown (can be restarted but costs up to US\$ 500,000)*
2	Minor damage – brief disruption (costs less than US\$ 100,000)*
1	Slight damage – No disruption to operation (costs less than US\$100,000)*

* These losses in US\$ are meant as guidance only. Individual Group Companies may use more appropriate figures provided they are within the above quoted limits.

3. Environment

Severity	Description
5	Massive effect – persistent severe environmental damage or severe nuisance extending over a large area. In terms of commercial or recreational use or nature conservation, a major economic loss for the company. Constant, high exceedance of statutory or prescribed limits.
4	Major effect – severe environmental damage. The company is required to take extensive measures to restore polluted or damaged environment to its original state. Extended exceedance of statutory or prescribed limits.
3	Localised effect – limited loss of discharges of known toxicity. Repeated exceedance of statutory or prescribed limits. Affecting neighbourhood. Spontaneous recovery of limited damage within one year.
2	Minor effect – contamination. Damage sufficiently large to attack the environment. Single exceedance of statutory or prescribed limits. Single complaint. No permanent effect on the environment.
1	Slight effect – local environmental damage. Within the fence and within systems. Negligible financial consequences.

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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4. Reputation

Severity	Description
5	International Impact – International public attention. Extensive adverse attention in international media. National/international policies with potentially severe impact on access to new areas, grants of licenses.
4	National impact – national public concern. Extensive adverse attention in the national media. Regional/national policies with potentially restrictive measures and/or impact on grant of licenses.
3	Considerable impact – regional public concern. Extensive adverse attention in local media. Slight national media and/or local/regional political attention. Adverse stance of local government and/or action groups.
2	Limited impact – some local public concern. Some local media and/or political attention with potentially adverse aspects for company operations.
1	Slight impact – public awareness may exist, but there is no public concern.

All these factors are considered while setting Objectives and Targets

Based on the above “Risk Classification Matrix”, associated risks are classified as H = High; M = Medium; L = Low; depending upon its degree of hazards/impacts considering the above criteria, thus allowing to determine an appropriate control measure to each identified hazard.

The results of the hazard/aspects identification and risk classification will be recorded using Hazard Identification, Risk Assessment & Risk Control Form (F-007)

6.4 Significant HSE Aspects/Hazards

HSE Specialist and respective Division/Department Heads or nominated persons on behalf of them will review the filled up forms F-007. After reviewing these documents prepared from all divisions, HSE Specialist will prepare a list of significant aspects and hazards (high risk associated), considering only the aspects/hazards appropriate to the nature and scale of impact of activities or products of the Company. Concerned Division Heads along with the HSE Specialist will review the significant aspects/hazards thus listed out.

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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Record of such review and approved significant HSE aspects / hazards will be maintained by HSE Specialist, which are considered during setting Objectives & Targets for continual improvement on the ADWEA's Integrated Management System performance.

6.5 Manage the Risk to Acceptable Levels

After the risk has been identified and analysed as per above, assessor will recommend what preventive/corrective action (if any) is necessary to manage the hazard at an acceptable and ALARP risk level. Depending on the nature of the specific hazard(s),

The following hierarchy of control is followed while identifying and applying the additional control(s) on any risk:

- **Elimination.**

Eliminate the risk by removing the hazard.

- **Substitution:**

Substitute less hazardous materials, equipment, process or substances

- **Engineering controls isolation :**

Make structural changes to the work environment, work system, tools or equipment. Use mechanical aids or manual handling devices. Enclose or isolate the hazard through the use of guards or remote handling techniques. provide local or general exhaust ventilation.

- **Administrative controls :**

appropriate administrative procedures such as polices, guideline, standard operating procedures(SOPs), registries, work permit, safety signage, job rotation , job timing, routine maintenance and housekeeping. provide training on hazards and correct work procedures.

- **Personal protective equipment (PPE) :**

Provide correctly fitted and properly maintained personal protective equipment (PPE), and/or protective clothing and training in its use.

If the risk is low, no action may be required. Medium and high risks require that management formulate a corrective action plan, which should include:

- Agreed actions, responsible person(s), and completion date(s). In formulating these plans, it is important to realise that risk management measures include organisational and system measures, such as:

- Personnel training and qualification procedures

**IDENTIFICATION & EVALUATION OF HSE
ASPECTS/HAZARDS AND RISK ASSESSMENT PROCEDURE**

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- Change control and documentation procedures
- Quality assurance, maintenance and inspection procedures
- Periodic personnel medical check-ups and prophylactic medical treatments such as vaccination/immunisation).
- **Personnel behaviour.**

- Follow up that includes regular updates for progress to ensure actions are closed per the plan.

7 Review :

Review to existing control measures will be done (as necessary), depending on previous audits findings, incidents records, inspections or adopting new technical knowledge.

8 Documentation

F-007: ADWEA Hazard Identification, Risk Assessment and Risk Control Form