

 هيئة مياه وكهرباء أبوظبي Abu Dhabi Water & Electricity Authority	ABU DHABI WATER AND ELECTRICITY AUTHORITY (ADWEA)	Effective Date : 18.06.2009		
		Volume	Chapter	Version
		19	3	2
Page 1 of 13				

PROCEDURE TITLE: Health, Safety & Environment (HSE) Impact Assessment Procedure	Approved by:
	Planning & Development Director:



ADWEA HSE PROCEDURE MANUAL

HEALTH, SAFETY & ENVIRONMENT (HSE) IMPACT ASSESSMENT PROCEDURE

Prepared by: _____ *Date:* _____
 HSE SPECIALIST

Reviewed by: _____ *Date:* _____
 TECHNICAL ADVISOR

Approved by: _____ *Date:* _____
 PLANNING &
 DEVELOPMENT DIRECTOR

CONTENTS

SECTION

PAGE

1. OBJECTIVES	4
2. SCOPE	4
3. POLICY	4
4. REFERENCES	4
5. DEFINITIONS	4
6. PROCEDURE	5
6.1 Responsibilities	5
6.2 Project Phases	6
6.3 HSE Impact Assessment	6
6.4 Conducting HSEIA	6
6.5 HSEIA Phases	7
6.6 HSEIA Document Structure	7
7. Environmental Requirements related to Disinfection and Disposal of Water used to Clean Pipelines	10
8. Guidelines for Environmental Concerns	12



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 4 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

1. OBJECTIVE

The purpose of this procedure is to ensure that all projects are being reviewed as per the Local, Federal and International requirements (as applicable) and the best practices in order to determine if there is a need for the preparation of a Health, Safety and Environment Impact Assessment (**HSEIA**).

2. SCOPE

This procedure applies to all projects, for new facilities and the modification or decommissioning of existing facilities, in addition to discharging disinfected/treated water used to test and clean new water lines. It gives a standardised method for determining those projects that require a HSEIA.

3. POLICY

- Minimize the impact to the environment in compliance with the Federal and Local legislation concerning HSE and the International rules, standards and requirements.
- Develop systems and procedures to reduce HSE risks to a practicable minimum and audit work practices.
- To design, modify and decommission facilities in a manner that reduces HSE risks to an acceptable limit.

4. REFERENCES

- 4.1 Federal Law No. 24 for the year 1999 with respect to the protection of the environment.
- 4.2 Law No. 16 for the year 2005 (re-organizing the Environmental Agency).
- 4.3 ADWEA procedure "Volume 19 – Chapter 4 – Standards for effluents and emissions Discharge" shall be referred to.

5. DEFINITIONS

Deminimis: Having little or no impact.

Discharge: A release to the environment including emissions, effluents and solid/hazardous waste disposal.

Effluent: A liquid discharge, usually referring to water-borne discharges to surface water, groundwater or land.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 5 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

Emission: Intermittent or continuous release of gaseous contaminants to the environment, usually an atmospheric discharge.

Environment: The biological and non-living systems within which we live.

HAZOP: (Hazard and Operability Study) a technique by which a team critically examines a design and/or a process through a series of logical and systematic questions for the purpose of identification and assessment of potential hazards and their consequences which prevent efficient operation.

HSE Section: In ADWEA it is the HSE Engineer in the Projects Directorate. In Group Companies it is the Senior HSE person who may be an Advisor, Head of HSE or Senior HSE Engineer.

HSEIA: Health, Safety and Environment Impact Assessment including, as required, Risk Assessment, HAZOPs, Health and Environment impact assessment.

Risk Assessment: Qualitative and/or Quantitative Risk Assessment.

Waste: By-product of consumption, that which remains.

Document: Information and its supporting medium (paper, magnetic, electronic or optical computer disc, photograph or master sample, or combination thereof).

Procedure: Specified way to carry out an activity or a process

Record : Document stating results achieved or providing evidence of activity performed

6. PROCEDURE

6.1 Responsibilities

The ADWEA HSE Specialist is the focal point in ADWEA; he shall ensure that the ADWEA's Projects Directorate and the Affiliates are receiving the latest Regulations, requirements and procedures. He can be referred to for any clarification and/or advice.

The Project Manager through his HSE Section and/or the Consultant shall review all projects (for new facilities or modification of existing ones) at the various designs, construction, operational, commissioning and decommissioning stages. This review shall be in writing and contain a determination if the project has no impact, if it is deminimis or if an HSEIA is required.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 6 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

The concerned Project Manager and /or Consultant shall be responsible for all HSE activities of all related projects and shall seek the advice of his HSE section at all times, and the ADWEA HSE Specialist as necessary..

For projects/modifications managed by one of the Group Companies, The above will be referred to the HSE Section of that Company. Company HSE Section shall coordinate with ADWEA HSE Specialist and other outside parties (e.g. Local Authorities, Environment Agency) as deemed necessary.

Based on the HSEIA study findings, the HSE Section shall decide if the study is to be send to the Environmental Agency for their approval. This shall be done in co-ordination with ADWEA HSE Specialist.

6.2 Project Phases

Determination of the potential for impact (for Health, Safety and environmental concerns) shall be made for each of the four phases of a project as listed below. If an HSEIA is required, each phase HSEIA must be completed and approved by the HSE Section and/or Consultant prior to the commencement of those activities involved in the next phase. Current HSE procedures and Company & statutory standards/requirements shall be used to assess the need for an Impact Assessment. The guidelines given in the Attachment shall be used to assess environmental concerns.

Phase 1: Conceptual design and Front End Engineering and Design (FEED) stage of the project including all work up to the decision to go to final design and/or tender for the project.

Phase 11: Construction phase of the project that commences at the end of the FEED stage and encompasses tender and award, mobilization, construction, performance testing, pre-commissioning, commissioning, acceptance of the project and contractor demobilization.

Phase 111: Operational phase of a project, commencing at acceptance from the contractor of the finished project for continuous operation.

Phase 1V: Shutdown phase of a project including, mothballing, decommissioning, and/or removal or discontinuation of an operation including site restoration.

The HSEIA shall commence at a sensible time prior to the planned shutdown.

6.3 Health, Safety and Environmental Impact Assessment

If a project is deemed to have sufficient HSE concerns, it is the HSE Section to determine that an HSEIA is required.



ABU DHABI WATER AND ELECTRICITY AUTHORITY (ADWEA)

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 7 of 13

PROCEDURE TITLE: Health, Safety & Environment (HSE) Impact Assessment Procedure

Approved by:

Planning & Development Director:

HSEIA is to be conducted by a party that is independent of the project contractor or subcontractor. This independent party should not be hired by the project contractor. The HSEIA consultant should be hired directly by the Company to avoid any conflict of interest.

6.4 Conducting an HSEIA

- The concerned department (e.g Projects Directorate/Projects Division) to include the HSEIA cost in the project budget.
- HSE Section and/or Consultant will outline the scope of work for the HSEIA in liaison with the concerned department.
- HSE Section and/or Consultant will prepare the bidders list for a qualified independent party.
- HSE Section and/or Consultant will review the technical offers/quotations.
- After award, HSE Section and/or Consultant will coordinate with and supervise the HSEIA selected consultant and approve the final report.

6.5 HSEIA Phases

HSEIAs are to be prepared for each of the four phases of a project. The HSEIA for each phase may be completed separately or in combination with other phases. Each HSEIA phase must be satisfactorily completed and approved before the project may proceed.

6.6 HSEIA Document Structure

6.6.1 Executive summary

Shall at least be a summary overview of:

- Project description and background.
- Project timing to operation
- Project life cycle
- Raw materials and energy requirements
- Products and by-products produced
- Wastes and emissions produced
- Significant impacts
- Mitigation measures
- Resultant HSE impact contribution
- On-site/off-site emergency preparedness
- Recommendations and next steps
- Conclusions



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 8 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

6.6.2 HSE Impact Assessment Summary

Shall include a summary discussion of the following, including mitigation measures:

- Life Cycle description and evaluation
- Siting evaluation
- Environmental impacts
- Wastes, emissions and effluents and their reduction, substitution, re-use, recycle, elimination and/or disposal.
- Occupational and environmental health issues
- Safety issues
- Risk Assessment and HAZOPs issues
- Crisis Management and Emergency Action Issues and Plans
- Infrastructure issues
- Cost and savings of short and long term impacts, control and mitigation measures, and risk reduction.

6.6.3 HSE Data and Assessments

Shall contain in chapters and/or appendices the collection of data and the resultant analysis of this data.

As appropriate, U.A.E and Abu Dhabi Laws and Regulations, Company and International requirements/standards will be addressed for each issue.

The impact analysis should include a summary/table of pollutants/hazards sources, potential impacts and severity. At least the following shall be addressed, where applicable.

- a) Description of planned action with plot plans and other drawings. This does not need to include detailed project drawings. Schematic drawings will suffice.
- b) Time line or proposed schedule. Projected life of the project to be addressed.
- c) Description of products and by-products.
- d) A general mass balance for normal operations, anticipated upset conditions, and emergency shutdown situations. Address raw materials and outside provided resources (such as electricity) consumed, processed, manufactured, transported and/or used in this facility.
- e) Risks and hazards operation analysis/assessment addressing, as appropriate, at least, fire and explosion, equipment separation for over-pressure control, business interruption, safety, occupational and environmental health exposures, environmental impacts, infrastructure, pipeline releases, feed-stocks, raw materials, chemicals and radioactive usage.
- f) Emergency action plans. Include onsite and offsite exposures, risks, resource and infrastructure requirements.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 9 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

- g) Site location description of the existing environment, including at least, geography, geology, soil, vegetation, agriculture, land usage (site and surrounding area), access, water bottoms, wetlands and other significant aspects of the chosen location and shall include roads, pipelines and electrical transmission routes.
- h) Meteorology, climatology and air quality on a regional and immediate site basis. Existing air quality and project impacts upon air quality must be addressed.
- i) Ecology of area including common, threatened and endangered species of flora and fauna, both indigenous and migratory to the area.
- j) Water resources evaluation for area and site shall include surface water and groundwater.
- k) Archaeology and other important anthropology or natural sites must be identified and impacts discussed. A survey may be required to assess the importance of the site.
- l) Cultural impacts on local people and populations due to construction and operation of the project.
- m) As applicable, access to site shall detail ingress and egress by roads, walkways or other means of access for walking, vehicles, marine craft and construction and heavy equipment.
- n) Supporting resources upon which demands are made and are not part of the project site shall be addressed. This includes, but not limited to: The need for supply of electricity, potable water, irrigation water, cooling water, sewage treatment, fire fighting, housing, schools, medical facilities, recreational facilities, roads, airports, shipping lanes, port facilities and other required local, private or government services.
- o) List of major equipment that emits or creates emissions, effluents or waste streams either continuously or intermittently. Include design specifications for throughput, fuel, water, or chemical consumption and waste generated.
- p) List of all chemicals and materials, other than laboratory chemicals and non hazardous spare parts, to be used or stored at the site.
- q) Radiation exposures including radio isotopes, x-ray equipment and sources.
- r) Identify all discharges associated with the project including emissions, effluents to land, surface and groundwater, solid and other waste generated at site and associated support resources. This shall include construction, start-up, performance and acceptance testing, normal operations, planned maintenance and expected upset type conditions.
- s) Fire fighting systems, equipment, water supply, appropriate foam, chemicals, deluge systems, response needs and training requirements.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 10 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

- t) Work environment in relation to equipment accessibility, illumination, noise, vibration, heat stress, personal protective equipment.
- u) Occupational exposures to employees and possible health threatening exposures to the neighbouring community shall be addressed. This shall include physical, chemical and biological exposures.
- v) Describe the operational sampling/monitoring methods proposed for Health, Safety and Environment control and discuss data collection and management.

7. Environmental Requirements related to Disinfection and Disposal of Water used to Clean Water Pipelines (As Required by the Environmental Agency)

“Route”

7.1 With respect to noise, shall be in line with the last item under 8.2 below.

7.2 With respect to pipe cleaning and water disposal, the following shall be followed:

- The project owner has to take all necessary arrangements for the Environmental Agency Inspectors to enter site, where disposal takes place, at any time.
- In the case where the cleaning water is being disposed to land, it is required to design adequate evaporating ponds/tanks to contain this water without being disposed to open land.
- The size of these ponds/tanks has to be three times the volume of the generated pipeline cleaning water.
- Adequate fence shall be installed around the ponds to prevent animals (camels) from drinking the disposed water in the ponds.
- Ensure that the project operations do not restrict the movement of vehicles during filling and emptying the pipes with/from water by using water tankers, until this water is being disposed by a party approved by the Environment Agency.
- It is important to take samples from the determined points (highlighted) on the drawings and to measure and monitor the chlorine concentration and the PH in the disposed water, by using local measuring tools, twice a day (once at day time and once during night time) and ensure that it does not exceed the limits stipulated in the Local and Federal laws.
- In case where the disposed water escapes from the ponds, the disposal operation shall be immediately stopped and the project owner or his representative shall be fully responsible for any damages in the surrounding environment and will be responsible to find solutions and take necessary actions to enable him complete the disposal operation.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 11 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

- It is strictly prohibited, for any reason, to use any chemical during the disposal operation except that used for disinfection either in the pipeline or at the point of disposal.
- In the case of large pipe and its requirement for internal cleaning, it is preferable to follow the pressurized water jetting method, to ensure better pipe cleaning and to reduce the disposed mud and precipitates to the sea water.
- In case of the presence of electrical connections on the site, then it is to be laid down in a way within the health and safety requirements.
- The pollutants limits in the disposed water to the sea shall not exceed the allowed limits in appendix 8 of the executive list of the Federal law No.24 for the year 1999. (reference to be made to item 4.3 above)
- Full adherence to the maximum limits indicated in the executive list for the Law No.24 for the year 1999.(reference to be made to item 4.3 above)
- The Environmental Agency has the right to stop all activities if there is a possible indication that the surrounding environment will be damaged, or its capability to contain the volume of pollutants resulting from the operation. The project owners or their representatives including contractors shall immediately inform the Environmental Agency when such damages take place and stop the disposal operation and find a solution.

7.3 With respect to liquid and solid wastes, the following shall be followed:

- The importance of having a dedicated area for the wastes generated from the pipes cleaning operation and dispose it through a party/contractor that is approved by the Environmental Agency.
- The importance of dedicating special areas for wastes and the segregation of solid and liquid wastes, hazardous and non-hazardous wastes and that which can be re-used and cannot be re-used.

7.4 With respect to occupational safety the following to be followed

- To ensure the availability of all related personal protection equipment (e.g. safety shoes, coveralls, ear protection, eye protection, masks etc.) and relevant safety signs.
- All employees shall be trained to deal with normal situations and emergency cases. Related signs and emergency telephone numbers posted.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 12 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

“UnQoute”

Project Manager and/or Consultant shall be responsible for the above and the implementation of all the required technical and environmental issues; in addition they have to make sure that all related analysis, drawings, documents etc, are available upon request by the Environmental Agency or the ADWEA HSE Specialist/Specialist.

It will be the responsibility of the Project Directorate/Department to submit on frequent basis bi-annual reports to the Environmental Agency through the ADWEA HSE Specialist/Specialist indicating all the projects that had and will have such disposal operation for their follow-up.

For new projects, the above is to be considered at the early stages of the project and to be part of the HSEIA study as per this procedure.

8. GUIDELINES FOR ENVIRONMENTAL CONCERNS

8.1 No Impact Determination

The HSE Section shall make a determination that a project will have no impact if all of the following conditions are met:

- There shall be no change in the quality or quantity of existing emissions, effluents, or wastes during the operation of the project.
- No new infrastructure such as buildings, rebuilding or enlarging of camps, utilities, government services, roads, and other such facilities shall be required.
- All criteria of the ADWEA Guidelines must be met for discharges to the air, land, surface and ground water.
- All of the conditions listed below under Deminimis Determination are met.

8.2 Deminimis Determination

The HSE Section shall make a determination that a project shall have minimal impact, if all of the following conditions are met:

- During all phases, the project will cause no discharges to the air, land, surface and ground water that shall exceed the limits stipulated under the “Standards for Effluent and Emissions Discharges” requirements.



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

Effective Date : 18.06.2009

Volume	Chapter	Version
19	3	2

Page 13 of 13

**PROCEDURE TITLE: Health, Safety & Environment (HSE)
Impact Assessment Procedure**

Approved by:

Planning & Development Director:

- **Solid Wastes**

No solid wastes such as galley wastes, garbage, office and camp trash, and paint debris shall be disposed of on site. Wastes shall be disposed of at an approved garbage disposal site. This subsection does not include inert, non-hazardous construction debris recycled as fill or materials for firewalls, drainage, road, or other civil constructions.

- **Hazardous Wastes**

No hazardous materials shall be disposed of on site during operation and decommissioning. During construction no more than 100 kg of hazardous material in total can be generated. All such wastes generated during any phase will be disposed of at an approved waste treatment and disposal facility.

- **Noise**

Noise at the site shall not exceed a maximum of 92 dBA at a distance of 15 meters from any equipment. At the closest point of public contact or the fence line it shall not exceed 60 dBA during daylight hours or 50 dBA during non-daylight hours.