



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

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ADWEA CORPORATE CRISIS MANUAL AND PLANS

Approved by:

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**ADWEA CORPORATE CRISIS MANAGEMENT
MANUAL AND PLANS**

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PLANNING & DEVELOPMENT
DIRECTOR



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LIST OF ABBREVIATIONS

- ADEMO – Abu Dhabi Emergency Management Organization
ADWEA – Abu Dhabi Water & Electricity Authority
CCC – Crisis Command Center (ADWEA)
CCMP – Corporate Crisis Management Plan (ADWEA)
CMT – Crisis Management Team (ADWEA)
CMTL – Crisis Management Team Leader
EMT – Emergency Management Team (Affiliates)
ERP – Emergency Response Plan (Affiliates)
ERT – Emergency Response Team (Affiliates)
HSE – Health, Safety and Environment
PCM – Post-Crisis Management
SCADA – System Control and Data Acquisition



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APPENDIX 1 - FLOWCHARTS

[Flowcharts.xls](#)

Triggers for Crisis

Flowchart #1 – CMT Crisis Response

Flowchart #2 – CMT Crisis Management Process and Responsibilities

Flowchart #3 – CMT Organization & Roles

Flowchart #4 – PCM Organization & Roles

Flowchart #5 – ADWEA Crisis Communications Plan

APPENDIX 2 - LISTS

CCC Equipment and Supplies Checklist ([Equipment & Supplies Checklist.xls](#))

Incident Notification Log ([CCC Incident Notification Log.xls](#))

ADWEA Emergency Contact Numbers List ([ADWEA Emergency Contact Nos List.xls](#))

Local Authorities Emergency Contact Numbers List ([Local Authorities Emergency Contact Nos.xls](#))

Communication Contact Lists ([Communication Contact Lists.xls](#))

- Affiliate
- Government Agency
- Contractor
- Media – Television
- Media – Radio
- Media – Newspaper

ATTACHMENTS

Attachment 1 Hazard Assessment Evaluation & Findings Report

Attachment 2 ADWEA Corporate Crisis Management Plan Drills & Exercises Manual



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PART I – ORGANIZATION AND PROCEDURES

I - 1.0 INTRODUCTION

Abu Dhabi's power and water needs are served by a number of combined water and electric companies. These companies are part of the Abu Dhabi Water and Electricity Authority (ADWEA). ADWEA has developed a Corporate Crisis Management Plan to assess the risks that the combined ADWEA companies may face and to develop an appropriate corporate crisis strategy and assess the alignment of the current company-level plans with ADWEA's goals.

Disasters can strike randomly and unpredictably. To be prepared for a wide variety of crisis that can occur with little warning, ADWEA wishes to plan for such events. Any occurrence that affects the safety of people and the environment or causes a significant disruption to ADWEA's operations must be regarded as a crisis. Adequate planning requires a crisis action plan that prevents or minimizes the loss of life, destruction of the environment, material damage, and loss of ADWEA's functions, as well as a post-disaster plan that expedites recovery.

Effective planning for crisis preparedness will lessen the vulnerability of ADWEA and its Affiliates to disasters and facilitate the role of ADWEA in rendering assistance where possible to its Affiliates.

I - 2.0 POLICY

ADWEA's policy is:

To establish a unified practice of crisis management and emergency response throughout ADWEA and its Affiliates. ADWEA will ensure that:

- Risk based crisis management plans are in place, are kept up to-date and are understood by those who will respond.
- The resources necessary to respond to crisis situations are defined, available, maintained and ready to use.
- Exercises are conducted to ensure applicability of the crisis response plans and readiness of resources.
- ADWEA will provide an appropriate response to crisis situations and will provide systems and methods for ensuring that all concerned parties are assisted and kept informed.



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I - 3.0 OBJECTIVES

ADWEA wishes to manifest its common approach to crisis management and emergency response in the ADWEA Corporate Crisis Management Plan, which is detailed in this Manual. This common approach presented in the ADWEA Corporate Crisis Management Plan Manual will also assist ADWEA in fulfilling its responsibilities under the proposed ADEMO requirements in dealing with corporate strategic crisis response issues, and in coordinating emergency response where there are potential interactions between Affiliates.

I - 4.0 SCOPE

I- 4.1 General

This ADWEA Corporate Crisis Management Plan (CCMP) Manual has been prepared to assist ADWEA and its Affiliates in minimizing, and if possible preventing, the effects of emergencies and crises.

Employing a common approach to crisis and emergency response across ADWEA and its Affiliates will achieve a uniformly effective crisis and emergency management capability. The use of a common organizational structure will allow effective integration of response efforts when two or more Affiliates are involved.

I - 4.2 Priorities

The priorities of ADWEA in dealing with crises are stated below, in order of importance:

1. Human life (employees and public)
2. Environment
3. Protection of Property
4. Business Continuity (Operations and Reputation)

I - 4.3 ADWEA's Involvement

ADWEA's CCMP requires ADWEA to be involved when: **an Emergency becomes a Crisis.**

All Affiliates' Emergency Response Plans (ERPs) shall have clear directions on when and how ADWEA is informed during a significant emergency that was the potential to develop into a crisis and during a crisis itself.



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I - 4.4 Crisis Defined

A significant emergency may progress to a crisis if one or more of the following triggers designated as A through C take place at any Affiliate, or if the emergency is the result of terrorism. Only ADWEA can declare a crisis.

- A. Multiple Fatalities
- B. Damage Outside Affiliate's Property
 - People (ex. overtaken by smoke or burned by heat and flames)
 - Structures
 - Environment (ex. runoff from Affiliate's Property and/or secondary reactions/releases due to heat and spreading of fire)
- C. Reduction of Electricity/Water
 - Full Shutdown of any of the facilities.
 - Water Contamination
 - Sea Water Intake
 - Finished Water
- D. Terrorism/Sabotage

In addition to the triggers stated above, concern about ADWEA's reputation (for example, poor water quality, blackouts) may necessitate ADWEA's involvement under certain circumstances.

I - 4.5 Notification of ADWEA

When an Emergency occurring at an Affiliate reaches Levels 2 or 3 or equivalent, it is a Significant Emergency according to the Affiliate's ERP. ADWEA shall be notified by the Affiliate's Emergency Management Team (EMT) when a Significant Emergency occurs or is expected at the Affiliate's property. ADWEA will declare a Crisis if and when the Significant Emergency meets the Crisis Triggers.

ADWEA may also be notified of a Crisis situation by its own employees or the public. The ADWEA entity to receive the notification of a significant emergency from an Affiliate or others is the ADWEA Control Room which in turn notifies the CMT Leader or the Crisis Coordinator if the CMT Leader is not available.

All the Affiliates' ERPs will have a clear notification process between the Affiliate and ADWEA for crisis purposes.



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I - 4.6 ADWEA's Role

ADWEA's role in Crisis Management has five aspects:

1. **Monitoring:** monitor crisis and offer support to Affiliates.
2. **Communications:** internal and external, including Media and Abu Dhabi Authorities.
3. **Coordination:** secure and prioritize internal and external resources.
4. **Financial:** commit support and minimize impact.
5. **Post Crisis Management:** In cooperation with the affected Affiliate, ADWEA will assess lessons learned; coordinate the assessment of damages and the restoration efforts; manage legal, regulatory, and insurance issues; and, assure necessary revisions to ADWEA's CCMP and Affiliates' ERPs take place.

I - 4.7 Media

An important aspect of the CCMP is the assignment of the role of dealing with the media to ADWEA during crises. All Affiliates' ERPs shall show ADWEA's role in dealing with the media during crises, as specified in this CCMP Manual. During an emergency, which has not elevated to a crisis, each Affiliate will deal with the media as specified in its ERP.



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I - 5.0 ADWEA CORPORATE CRISIS MANAGEMENT SYSTEM

ADWEA's Corporate Crisis Management System has four components:

1. Identify, document, and assess the probability of occurring and potential consequences of credible crisis scenarios posing a risk to ADWEA.
2. Develop a Corporate Crisis Management Plan (CCMP) and document it in a Manual.
3. Assure the ADWEA CCMP Manual and the Affiliates' ERP Manuals are consistent regarding ADWEA's role in a crisis, and are reviewed regularly and revised as needed.
4. Develop a Drills and Exercises Manual, conduct regular training on the CCMP, and prepare and execute exercises (tabletop and field).

I - 5.1 Strategy

There are three stages of involvement in managing an emergency response within ADWEA and its Affiliates:

- Stage 1. On-site (Affiliate) Emergency Management Team (includes Emergency Response Team) – For Emergencies contained on Affiliate's property.
- Stage 2. Shared Facilities Company Emergency Management Team – For escalating emergencies in locations with multiple Affiliates – Al Taweelah.
- Stage 3. ADWEA Corporate Crisis Team – For Crises, as defined in this Manual.

During a Crisis, the affected Affiliate continues to operate under its own ERP to manage the emergency at its site.

There is a clearly defined leader at each stage of involvement, as specified in the ERPs of the Affiliates (including the Shared Facilities Company's ERP) and ADWEA's CCMP Manual.

For purposes of this Manual all companies related to ADWEA, including the Shared Facilities Company, are referred to as ADWEA's Affiliates.

Figure 1 represents the handling of emergencies by all the Affiliates, according to their current ERPs, when they respond to such incidents at their sites. This handling is done according to each Affiliate's ERP and will not change as a result of ADWEA's CCMP, except for media and other external communications duties during a crisis. All the Affiliates' ERPs will also have a process to notify ADWEA during a crisis.



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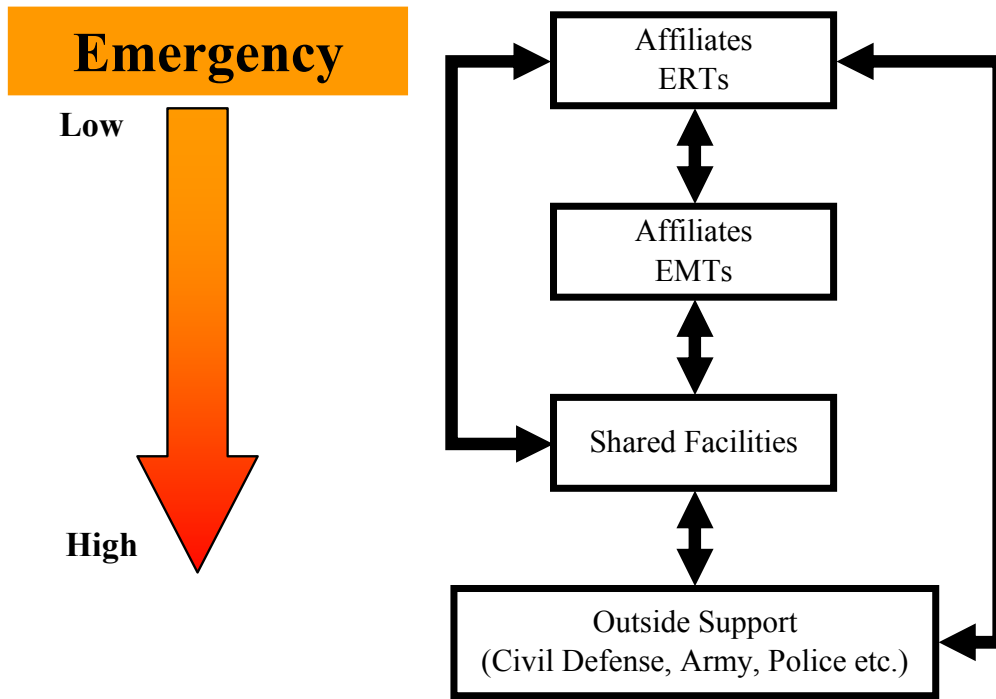


Figure 1: Handling Emergencies and Crises Internally by ADWEA's Affiliates When Incident Occurs at Their Site.



The inter-relationships of the Teams and Plans during a Crisis are presented in Figure 2.

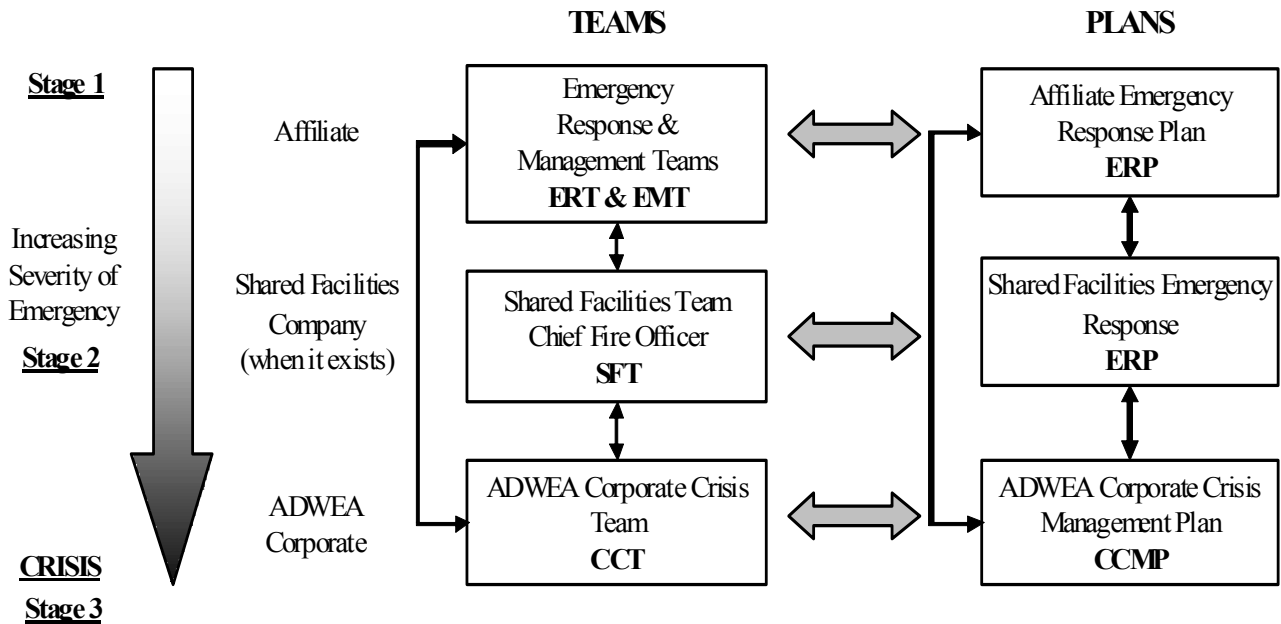


Figure 2: The inter-relationship of Plans and Teams during a Crisis

I - 5.2 Guiding Principles

ADWEA's guiding principles and expectations, as they relate to crisis and emergency management, are as follows:

- The Emergency Management Plans (ERPs) of ADWEA's Affiliates and ADWEA's Corporate Crisis Management Plan (CCMP) will operate as a unified shield to protect ADWEA and its Affiliates during Emergencies and Crisis.
- ADWEA's Affiliates must initially overreact to emergencies and notify ADWEA as required in their EPRs and ADWEA's CCMP. Once an assessment of the severity is completed, the response will be sized accordingly.
- ADWEA will be responsible for external communications during a Crisis, including communications with Media and Authorities, to assure uniformity and continuity in ADWEA's public image. During non-crisis emergencies, Affiliates will deal with Media as directed in their ERPs.



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- Across ADWEA and its Affiliates, emergencies and crises shall be addressed to protect the following priorities:
 1. Human Life
 2. Environment
 3. Protection of Facilities
 4. Business Continuity/Reputation
- When it is advantageous for two or more Affiliates to work co-operatively during an emergency or crisis (for example, share resources) ADWEA will facilitate and coordinate such cooperation.



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PART II - ADWEA CORPORATE CRISIS MANAGEMENT PLAN Error!

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II – 1.0 ADWEA CORPORATE CRISIS MANAGEMENT PLAN MANUAL

ADWEA will maintain a Corporate Crisis Management Plan (CCMP), documented in the CCMP Manual, which centers around the ADWEA Crisis Management Team.

II – 1.1 Contents

The ADWEA CCMP includes the following elements:

- Establishment of a Crisis Management Team (CMT).
- CMT notification, activation and response process.
- CMT's responsibilities and functions.
- CMT's members' roles and responsibilities.
- Assignment of the CMT Leader.
- Establishment of ADWEA's Crisis Command Center (CCC) and identification of required equipment.
- Establishment of the Triggers that are required to be met for an Emergency to become a Crisis.
- Establishment of 10 Scenarios, based on Risk Evaluation Principles, which could present a Crisis for ADWEA.
- Establishment of a Communications Plan for ADWEA, as part of its CCMP.
- Establishment of procedures for developing and executing drills and exercises in a Drills and Exercises Manual.
- Establishment of Corporate Post-Crisis Management (PCM) responsibilities to be undertaken by ADWEA's CMT.



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II – 1.2 Crisis Scenarios

The identification of crisis scenarios for ADWEA was done based on risk, after evaluating the probability of their occurrence and the severity of their impact. This evaluation was presented in a report, Hazard Assessment Evaluation and Findings Report, which is included in Attachment 1 to the Manual. The 10 Crisis Scenarios identified for inclusion in ADWEA's CCMP are:

- Fire
- Explosion
- Hazardous Materials
- Releases
- SCADA Failure
- Seawater Intake
- Contamination and Finished Water Contamination
- Earthquake
- Tsunami
- Flood
- Epidemic
- Terrorism

All relevant ADEMO hazards are included in the list of ADWEA's Crisis scenarios. Two ADWEA scenarios, the SCADA Failure and Seawater Intake Contamination / Finished Water Contamination are unique to ADWEA. Radiation and Nuclear concerns are included in the Terrorism scenario, while Radiation contamination also applies to the Seawater Intake Contamination scenario. The Epidemic scenario applies to ADWEA because an epidemic affecting ADWEA workers at a facility could result in the plant's shutdown and in cross-contamination of other ADWEA plants.

Finally, in any case of Terrorism, regardless of its magnitude and whether it occurred at an Affiliate's site or at ADWEA's facility, ADWEA will get involved from the beginning and declare a Crisis, due to Terrorism's political significance.

II – 1.3 Distribution

The ADWEA CCMP Manual will be distributed to the following:

- ADWEA Senior Management
- ADWEA Affiliates
- Abu Dhabi Authorities, as necessary.

II – 1.4 Review

The ADWEA CCMP Manual will be reviewed in its entirety annually, at a minimum, and revised as required. The review and revisions will be documented as stated in this Manual. Certain portions of this Manual (for example, contact lists) require more frequent review and revision, as noted on these documents.



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II – 2.0 CRISIS – ADWEA CORPORATE CRISIS MANAGEMENT TEAM COMMUNICATIONS AND RESPONSIBILITIES

ADWEA will maintain a Corporate Crisis Management Team (CMT) focused on managing Crises and supporting the Affiliates' Emergency Response efforts during Crises. During a Crisis, the affected Affiliate continues to operate under its own ERP, in order to manage the Emergency at its site. ADWEA's CMT will also be responsible for Post-Crisis Management (PCM) responsibilities, focused on assessing the success of ADWEA's response to a Crisis and coordinating, along with the affected Affiliate, the necessary Post-Crisis activities. ADWEA will appoint the appropriate individuals to fulfil the member positions in the CMT. ADWEA will re-evaluate the CMT members on an on-going basis and modify personnel as needed.

The following flowcharts, included in Appendix 1, depict all the elements of the CCMP regarding the CMT, including the responsibilities of the CMT Leader, the CMT Members, and the Support Members.

[Flowcharts.xls](#)

Flowchart #1: ADWEA Crisis Management Team (CMT) – Crisis Response

Flowchart #2: ADWEA Crisis Management Team (CMT) – Crisis Management Process and Responsibilities

Flowchart #3: ADWEA Crisis Management Team (CMT) – Organization & Roles

The functions for ADWEA's Control Room and the responsibilities of the CMT Leader and the CMT members during a crisis are presented below. Alternates should be assigned as necessary and team members should have authority to delegate their roles to others.

II - 2.1 ADWEA Control Room

ADWEA's Control Room will serve as the first point of contact for an Affiliate's EMT at the start of a crisis. Specifically, the functions of ADWEA's Control Room will be to:

- Receive incident notifications and prepare Incident Notification Log (example included in Attachment 2).
- Notify CMT Leader or Crisis Coordinator (HSE Specialist) if CMT Leader is not available.
- Serve as primary contact person for "Emergency Caller" until relieved of this responsibility by CMT Leader.



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II - 2.2 Crisis Management Team Leader (CMTL) - One of ADWEA's Directors

The CMT Leader is responsible for the overall management of the incident. The CMTL directs incident activities, including the development and implementation of strategic decisions and approves the ordering and releasing of resources.

A. Is the primary ADWEA contact for Affiliate's EMT during a crisis.

- During a significant emergency, the Affiliate's EMT notifies ADWEA's control room which then notifies the CMTL.
- The Crisis Coordinator (HSE Specialist) may serve as the primary contact during an Affiliate's significant emergency if the CMTL is not available.
- When the CMT Leader declares a Crisis, he immediately notifies the affected Affiliates.
- He assures all Affiliates are notified of the Crisis situation.

B. Receives and delivers briefings from and to the affected Affiliates:

- Obtains on-going information on the nature and status of the incident.
- Obtains on-going information on the nature and status of tactical response operations at the Affiliate.
- Provides on-going updates to affected Affiliates on the status of CTM activities.
- Determines the areas where the Affiliates need assistance from the CMT. Defines the mechanisms that will be used to establish and maintain a clear line of communications.

C. Activates appropriate CMT personnel:

- Determines what CMT members and support need to be activated to address the incident and provide the assistance that the situation requires.
- Mobilizes appropriate CMT members and support staff.
- Provides mobilized CMT members and support staff with an initial briefing on the nature & status of the incident and response operations.
- Provides CMT members and support staff with initial instructions.
- Helps mitigate crisis.



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- D. Ensures that required notifications are made in a timely fashion:
- Checks on status of contacts with appropriate Federal and local government officials.
- E. Serves as primary spokesperson with the media:
- Activates the Media Officer.
 - Establishes guidelines for releasing information to the media per ADWEA policies.
 - Reviews and approves media releases.
 - Performs media briefings/press conferences.
 - Analyzes news stories to identify and develop a strategy to address inaccuracies and/or perceived weaknesses in response operations.
- F. Keeps government agency officials and community leaders not directly involved in response operations informed about the nature and status of the incident & response operations:
- Establishes guidelines for the release of information to government and community leaders not directly involved in response operations.
 - Reviews/approves information to be released to government officials and community leaders not directly involved in response operations.
 - Analyzes feedback from government agency officials and community leaders not directly involved in response operations to identify and develop a strategy to address their issues and concerns.
- G. Determines the need for and dispatches personnel from one Affiliate to another to augment the emergency response capabilities of impacted Affiliates.

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II – 2.3 HSE Specialist (Crisis Coordinator)

- Serves as Alternate CMT Leader.
- Serves as alternate primary contact for Affiliates' EMTs.
- Establishes contact with affected Affiliate's HSE Specialist.
- Monitors HSE elements of a crisis.
- Provides/Coordinates all requested environmental, health and safety support to the Affiliates' EMTs.
- Works with Affiliates' EMTs to activate and dispatch an Incident Investigation Team.
- Ensures Affiliates HSE personnel are aware of, and are responding in a manner consistent with, the overall strategy and crisis objectives.
- Assists CMT Leader in analyzing and addressing incident potential.
- Assists CMT Leader in developing an overall strategy and crisis objectives for incident response operations.
- Identifies and ensures all HSE issues and concerns are addressed at the CMT level.
- Briefs CMT Leader on the progress being made in providing requested assistance and addressing HSE issues and concerns.
- Advises CMT Leader on the HSE aspects of the incident and the options being considered.
- Assists with communication with Authorities on HSE issues.
- Assures the Crisis documentation is done.

II – 2.4 Technical Advisor

The roles and responsibilities of the Technical Advisor will vary depending upon the incident, but can be generally categorized as follows:

- Provides direct technical support to Affiliates, if needed.
- Identifies and communicates technical issues and concerns at CMT level.
- Assists CMT Leader in analyzing and addressing incident potential.
- Assists CMT Leader in developing an overall strategy for incident response operations.
- Provides CMT Leader and members of the CMT technical information about the facilities and operations affected by an incident.
- Advises CMT Leader on the progress being made in providing requested assistance and addressing technical issues and concerns.



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II – 2.5 ADWEA Media Officer

Key to ADWEA’s Communications Plan is ADWEA’s Media Officer, who is a member of the CMT. Flowchart #5 represents the functions and interface of ADWEA’s Media Officer to the CMT Leader, members of the CMT, Affiliates, and external entities.

While the Media Officer is responsible for preparing press releases for media distribution, the responsibility for in-person interviews by the media rests with the CMT Leader who is the primary spokesperson with the media. The Media Officer is the alternate spokesperson when the CMT Leader delegates the role to the Media Officer.

When the Media Officer is preparing a press release or other similar document, he/she will seek technical information from the other CMT members. The Media Officer may also communicate with the Affected Affiliate (with an EMT representative pre-assigned by the Affiliate), but only to clarify information needed for the press release. The main contact for communication with the Affiliate’s EMT remains the CMT Leader.

The Media Officer will clear the drafted press release and any other written messages first with the Legal Advisor and then with the CMT Leader. Only after their approval, press messages and other communication pieces will be ready to be released.

The following is a list of additional responsibilities assigned to ADWEA’s Media Officer:

- Receives media training and risk communication training so he/she can project trust and credibility.
- Assures regional and local media contact list is available.
- Obtains contact numbers for emergency information partners.
- Assures procedures to join the CCC information access are available.
- Establishes procedures to secure resources (space, equipment, and personnel) to operate the public information operation.
- Assures all stakeholder organizations or populations (groups or organizations that ADWEA believes have an active interest in monitoring activities—to whom ADWEA is most directly accountable, other than official chain of command) who should receive direct communication during a public health-related emergency have been identified.
- Assures mechanisms/resources are in place to create messages for the media, the public designated partners and authorities under severe time constraints, including methods to clear these messages within the crisis response operations of ADWEA.
- Assures mechanisms to identify multiple channels of communication to multiple audiences during a crisis are in place (ex. Media channels, TV, radio, web, newspapers, etc.).



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- Coordinates communication with horizontal partners as shown in the communications plan diagram (Flowchart #5) to ensure that messages are consistent and within the scope of the organization's responsibility.
- Provides updates to CMT Leader on communications during Crisis.
- Receives advice for incident-specific policy, science, technical matters, and situation, from the CMT members, before preparing the message to media.
- Clears message with legal advisor, as necessary, gets approved from CMT Leader for the information to be released.
- Assesses media needs and organizes mechanisms to fulfil media needs during the crisis (e.g., daily briefings in person, versus a Web site update).
- Sorts the response to media requests and inquiries.
- Ensures that media inquiries are addressed timely as appropriate.
- Manages the mechanisms to respond to public requests for information directly from the organization by telephone, in writing or by e-mail.
- Ensures that risk communication principles to build trust and credibility are incorporated into all public messages delivered through the media.
- Oversees public information and media monitoring systems and reports (e.g., analyzing environment and trends to determine needed messages, determining what misinformation needs to be corrected, identifying concerns, interests, and needs arising from the crisis and the response).
- Activates and participates in the telephone information line.
- Activates and participates in the public correspondence response system.
- Establishes communication protocols based on prearranged agreements with identified partners and stakeholders.
- Solicits feedback and responds to Affiliate information requests and inquiries.
- Oversees Affiliate/stakeholder monitoring systems and reports (e.g., analyzing environment and trends to determine needed messages, determining what misinformation needs to be corrected, identifying concerns, interests, and needs arising from the crisis and the response).
- Responds to Authorities/special interest groups requests and inquiries.
- Translates Affiliate's situation reports and meeting notes into information appropriate for public needs.
- Receives input from other CMT team members regarding content and message needs.
- Uses analysis from media, public and Affiliate monitoring systems, and reports (e.g., environmental and trend analysis to determine needed messages, what misinformation need to be corrected, identify concerns, interests and needs arising from the crisis and the response) to identify additional content requirements and materials development, with technical assistance from CMT members.
- Assists with the communications to Authorities and Agencies.



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II – 2.6 Legal Advisor

- Identifies and addresses legal issues and concerns at ADWEA CMT level.
- Advises on confidentiality issues.
- Advises on regulatory compliance issues.
- Reviews all press statements and releases prior to issuance.
- Provides legal advice on all ADWEA liabilities arising from the incident.

II – 2.7 Finance Manager

- Assesses Cost of Crisis.
- Allocates Finances and advises CMT Leader on financial issues.
- Establishes contact with affected Affiliate's insurance department.
- Identifies and ensures all finance issues and concerns are addressed at the CMT level.
- Assists CMT Leader in analyzing and addressing incident potential and impact.
- Advises on the implications of current and potential insurance liabilities.
- Provides/co-ordinates all requested Insurance Claims for the Affiliates.
- Ensures that required insurer notifications have been made and assists Affiliates' EMTs in other notifications where requested.
- Liaises with legal advisor to coordinate claims processing operations.



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II – 2.8 Contracts and Supply Manager

- Maintains a file of contracts with suppliers.
- Coordinates logistics with contractors.
- Facilitates contracts.
- Coordinates contractor use with Finance Advisor.
- Responsible for mobilization and transportation issues.
- Ensures the availability of contractors/suppliers list with up-to-date information (telephone, fax, contacts, etc.)
- Orders personnel and equipment resources as deemed necessary.
- Forwards documentation (purchase orders, receiving documents, and invoices) to the Finance/Administration section.
- Reviews contracts with suppliers to confirm/negotiate terms and conditions for their resources.
- Reviews existing contracts to determine the terms and conditions for contracted services and verify that contracts initiated during the response are properly prepared.
- Negotiates and re-negotiates contracts to obtain terms and conditions that are acceptable.
- Coordinate contract negotiations.
- Audit response operations to ensure compliance with the terms and conditions of contracts.



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II – 3.0 POST-CRISIS – ADWEA POST-CRISIS MANAGEMENT COMMUNICATIONS AND RESPONSIBILITIES

ADWEA’s CMT will also be responsible for Post-Crisis Management (PCM) activities, focused on assessing the success of ADWEA’s response to a Crisis and coordinating, together with the affected Affiliate(s), the necessary Post-Crisis activities. Flowchart #2 in Appendix 1, shows the responsibilities of the ADWEA CMT during the Post-Crisis period, and Flowchart #4, in Appendix 1, depicts the roles and responsibilities of the members of the CMT during the Post-Crisis period. The role and responsibilities of the Affiliate in the Post-Crisis period remain the same as have been in the past for a post-emergency case. The Affiliate will have, however, to coordinate its Post-Crisis activities with ADWEA’s CMT in order to assure a company-wide response to the crisis is achieved.

Examples of activities involved with the Post-Crisis Management are listed below.



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II – 3.1 GENERIC POST-CRISIS CHECKLIST EXAMPLES

A. Business operations disruption

1. What Equipment/property affected? (Denial of use, consequential loss)
2. Additional loads placed on management in managing the recovery?
3. Assess magnitude of loss of output
4. How much will it cost to repair the damage?
5. How much will it cost to repair damage to third party property?
6. When operations will be resumed?
7. Will other parts of the facility(s) be able to operate?
8. How long will individual key facilities be off-line?
9. Inability to meet supply commitments?
10. How are we covering consumers during the affected period?
11. What are the options for covering product shortfalls? (near-term, mid-term, long-term)
12. Who else is affected by the disruption and what is their position?
13. Has responsibility for restoration of a facility been specifically assigned?
14. Will this incident impact operations at other company and/or industry facilities?
15. What is the impact to adjacent business operations/community?
16. Are there other industry or government groups available to render assistance?

B. Customer/contractual impacts

1. The customer comes first
2. Which customer(s) have or will be impacted? (inability to supply, short term, long term)
3. What are our contractual obligations in the impacted area?
4. How do we address legal implications of our contractual obligations? Are there liability implications?
5. Have we properly prioritized our customers, based on the above considerations?

C. Image and reputation

1. What are the nature, extent and tone of media coverage?
2. What is the current public perception of ADWEA?
3. Should ADWEA be taking a high or low profile?
4. What should our key messages be?
5. Are ADWEA and the concerned company maintaining all necessary contacts? (Government, international, employees, families, media, customers, shareholders etc.)
6. Are we using the appropriate spokesmen in the right place and the right time?
7. Have we established a policy for lobbying?



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8. Are ADWEA and the concerned company responding effectively to the pressure groups?
9. Are ADWEA and the concerned company correcting misinformation?
10. Are ADWEA and the concerned company controlling rumor and speculation?

D. Liabilities

1. What is ADWEA's and the concerned Company's involvement and responsibility for this incident/emergency?
2. What are the implications of accepting responsibility? (Legal, liability potential, negligence potential)
3. What is the estimate of total liability and types of liability?
 - Claims, fines, compensation
 - Legal costs
 - Significant claims to be expected?
 - Penalties/fines/damages to be expected
 - Prosecutions to be expected?
 - Compensation payments necessary?
 - Officers/Directors liability?
 - Partner costs
 - Injunctions?
4. Are there limits by statute or otherwise to the amount of the liability?
5. What is the extent of insurance coverage applicable to the liabilities?
6. What kind of response action would reduce the company's exposure to damages and to enforcement and penalty actions? Are these actions consistent with the company's responsibility as a corporate citizen?

E. People and employee relations

1. Assess who has been affected both inside and outside the fence
2. What are the ongoing impacts on:
 - Site work-force
 - Other company employees
 - Contractors/consultants personnel
 - Families
3. Continue to provide compassionate assistance to injured employees and bereaved families
4. What has been the effect on morale of company personnel? Reinforce company morale
5. Are claims being handled and what additional resources are required?
6. What will the government allow us to do and what are our options?
7. Did we respond to the incident according to labor contract provisions and labor laws?



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8. Will this provoke hostile action from government/regulatory/agencies?

F. Insurance

1. What is the extent of the company's coverage for the incident?
2. Is there business interruption insurance covering lost revenues?
3. Are the facilities insured and to what extent?
4. Are there any major exposures which are not insured?
5. Either set up its team to track costs to facilitate recovery from insurers or appoint outside adjusters
6. Appoint a company insurance to coordinate with insurer appointed adjusters
7. Was there any aspect of the company's response to the crisis, including the company's approach to public communications that will jeopardize the coverage under the insurance program?
8. Should coverage be reinstated for possible further losses in the same financial year?
9. When will insurers start funding the company for its losses?

G. Environmental

1. What are likely to be the effects on the environment water/land/air? (short term, longer term)
2. Implement immediate monitoring of perimeter and as yet unaffected areas
3. Implement short term response to pollution
4. Co-operate with regulators
5. Are environmentally sensitive areas involved/exposed to a threat of harm?
6. What is the expected outcome scenario? Financial impact?
7. Will there be any long term, residual environmental or health effects?



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II – 4.0 TRIGGERS FOR CRISIS

The triggers for Crisis presented below are presented again in front of the Flowcharts, in Appendix 1, for convenience.

A significant emergency may progress to a crisis if one or more of the following triggers designated as A through C take place at any Affiliate, or if the emergency is the result of terrorism. Only ADWEA can declare a crisis.

- A. Multiple Fatalities
- B. Damage Outside Affiliate's Property
 - People (ex. overtaken by smoke or burned by heat and flames)
 - Structures
 - Environment (ex. runoff from Affiliate's Property and/or secondary reactions/releases due to heat and spreading of fire)
- C. Reduction of Electricity/Water
 - Full shutdown of any of the facilities
 - Water Contamination
 - Sea Water Intake
 - Finished Water
- D. Terrorism/Sabotage

In addition to the triggers stated above, concern about ADWEA's reputation (for example, poor water quality, blackouts) may necessitate ADWEA's involvement under certain circumstances.



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II – 5.0 CRISIS COMMAND CENTER

A Crisis Command Center (CCC) will be established and maintained in the ADWEA Corporate building.

The CCC should be a dedicated room, equipped to provide for any contingency. The CCC site should be on a backup power system and all the equipment present should be serviced under a documented maintenance plan, to assure they are functioning properly at all times.

Typical equipment to be available in the CCC includes:

1. **Phones** – A primary line and at least one additional line is needed. More than 3 phones could result in a situation where there is too much noise in the command center. More phones in the vicinity of the command center are desirable. Ideally, phones should be set up to rollover automatically to an open line in the command center if the main line is busy. One of the phones should be a speaker phone, to allow simultaneous communication with a group of CMT members.
2. **Cell Phone** – At least two cell phones are desirable. They could also be used to locate team members that leave the command center.
3. **Satellite Phone** – Early in an incident land lines and cell phones may experience heavy use and become jammed. Each Affiliate and the CCC should have at least one satellite phone. NOTE: Satellite phones generally do not work inside – need line of sight to satellite.
4. **Teleconferencing Equipment** – May be needed early in an incident if the team is not immediately able to assemble or to allow multiple participation in discussions.
5. **Dedicated computer with internet and intranet access** – The ADWEA Crisis Plan and critical information for each Affiliate, including its ERP site plans, evacuation routes, vicinity maps, etc. should be on the computer hard drive and/or a web site. Other maps, weather, etc. could be obtained from internet sites. Record the sites as favorites for quick access.
6. **Laptop connection(s)** – to a printer, the internet, etc.
7. **Printer** – connected to a desktop and accessible to laptops.
8. **Fax machine** – connected to a dedicated phone line.
9. **Photocopier** – easily accessible to the command center.
10. **TV with satellite connection** – provides ability to monitor the news.
11. **Key office supplies** – pens, markers, flip charts, paper, etc.



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12. **LCD Projector and Screen**
13. **Status Board (dry erase board) and Markers**
14. **Clock**
15. **Sign in/out board** – to track location of CMT members.
16. **Other considerations:**
 - A conference table to facilitate team meetings and for review of large maps.
 - Assigned work stations for each key function, plus at least one “ad hoc” station for supplemental members.
 - Hardcopy backups of key ADWEA’s and Affiliates’ reference information, including ADWEA’s Crisis Management Plan and the Affiliates’ ERPs. Although potentially out of date, such hardcopy documents often are more readily accessible in the incipient stages of crisis response, or if computers malfunction.

A CCC Equipment and Supplies Checklist is included in Appendix 2. Such a checklist should be maintained at the CCC, along with their documented and dated maintenance records.

Checklists for CMT Members Contact Numbers and Emergency Contact Numbers, as well as Communication Contact Lists, are also included in Appendix 2. Such checklists should be maintained at the CCC.



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II - 6.0 POTENTIAL ESCALATION

Each of the 10 Crisis Scenarios applied to ADWEA's CCMP and addressed in Part III of this Manual can escalate to a larger Crisis, due to the subsequent potential involvement of other crisis scenarios, and/or the escalation of consequences of such scenarios. This escalation potential is demonstrated by the following example of how a crisis involving fire can escalate to a larger Crisis. Similar escalation can be expected for other scenarios.

- A. Escalation due to other subsequent scenarios caused by the fire.
 - 1. Explosion
 - 2. Hazardous materials release
 - 3. Seawater intake contamination caused by hazardous material release
 - 4. SCADA failure
 - 5. Communication failure

- B. Consequences caused by the fire or other subsequent scenarios
 - 1. Fatalities
 - 2. Environmental impact
 - 3. Water contamination
 - 4. Water shutdown (partial or complete)
 - 5. Power shutdown (partial or complete)
 - 6. Loss of workforce/employees
 - 7. Loss of revenue
 - 8. Loss of facilities/equipment
 - 9. Adjacent property damage
 - 10. Legal issues
 - 11. Reputation damage due to crisis communication/action

The potential consequences of each of the 10 crisis scenarios shown in Part III of this manual are the result of each crisis alone and do not include potential escalation issues.



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II – 7.0 COMMUNICATIONS PLAN

ADWEA is responsible for internal and external communications during a Crisis. These communications are the responsibility of ADWEA's CMT, as shown in Flowchart #2. The allocation of the communication duties to the members of the CMT during a crisis is depicted in Flowchart #3, and during the post-crisis period in Flowchart #4. A diagram showing the ADWEA Crisis Communication Plan is presented in Flowchart #5. Key to ADWEA's communications plan is ADWEA's Media Officer who is a member of the CMT. The responsibilities of ADWEA's Media Officer are outlined in Section II – 2.5.

Communication Lists ([Communication Contact Lists.xls](#))

The following lists are included at the end of Part I under Appendices-Part I and will serve as communication lists during a crisis:

Local Authorities Emergency Contact Numbers List ([Local Authorities Emergency Contact Nos.xls](#))

Emergency Contact Numbers List ([ADWEA Emergency Contact Nos. List.xls](#))

Communication Contact Lists ([Communication Contact Lists.xls](#))

- Affiliate
- Government Agency
- Contractor
- Media – Television
- Media – Radio
- Media – Newspaper



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II – 8.0 TRAINING

A program for training will be developed and maintained by ADWEA to ensure that all active members of the CMT, and support members, are competent to complete their assigned duties. The training should address the specific elements of ADWEA's CCMP, as well as training for responding to Crisis from an emotional and mental preparedness standpoint. Specific media communications training should be provided, if needed, to the CMT Leader and Media Officer, as well as to the Affiliates' employees charged with media duties, to assure uniformity in capabilities and responses.

Refresher courses will run at a predetermined frequency for all active and support members of the CMT.

The training program will be modified as required to reflect changes to procedures, responsibilities, and lessons learned from exercises, drills and real emergencies.



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II – 9.0 DRILLS AND EXERCISES PLAN

Drills and exercises for ADWEA's CCMP will be conducted to assess and improve emergency response/crisis management capabilities, including liaison with and involvement of external organizations. The CMT members and support members will participate in Tabletop Exercises of the CCMP at least quarterly, and in Field Exercises every 2 years. ADWEA will develop and conduct drills and exercises based on the Drills and Exercises Manual included in Attachment 2 of this document.

The participation of the Affiliates in ADWEA's Tabletop Exercises and Field Exercises and Drills is critical to the success of ADWEA's CCMP, as the foundation of the CCMP is coordination amongst Affiliates and ADWEA during a crisis.



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PART III – CRISIS SCENARIO SUMMARIES

Part III of the CCMP Manual contains Crisis Scenario Summaries for the scenarios considered to be applicable to ADWEA's CCMP.



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SCENARIO 1 – FIRE

Background

Fire is a risk in any industrial facility. The production facilities produce electricity and store and use large amounts of flammable chemicals (fuels). Fire can be caused by electricity itself or from fuels that, if ignited, would produce large fires.

Fire is an inherently destructive force, destroying everything in its path until the available fuel is consumed, oxygen is removed, or the fire is suppressed via fire suppression (automatic or by fire fighters)

Most facilities have fire detection systems, fire suppression systems, and active fire brigades on the property. These measures mitigate the potential spread of fire.

Fire in a fuel storage depot could interfere with operations.

Probability

Probability of a fire can be influenced by lack of training, lack of maintenance, and lack of adherence to safety procedures. Because of the numerous potential sources of fire at production facilities, the probability of a fire at a production facility is moderate to high.

Key Consequences

Fatalities

Loss of facilities/equipment

Loss of production

Adjacent property damage

[Fire.xls](#)



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SCENARIO 2 – EXPLOSION

Background

Explosions can be caused by ignition of accidental releases of flammable chemicals, by over-pressurized pipes or conveyances, by catastrophic failures, or by various malevolent acts.

The cause of a particular explosion is not likely to be known for some time, generally after the incident is stabilized enough to allow an investigation.

Explosions themselves carry significant risks of injury, death and property damage. Fires and structural damage often accompany explosions. Deliberate explosions may include a variety of hazardous substances including chemicals, shrapnel, chemical, biological, or radiological materials designed to magnify the impact of the explosion.

Explosions produce a fragmentation effect, a blast effect, and an incendiary thermal effect. An explosion can cause serious injuries, death, and significant property damage including structural compromise and even collapse. Fires can be ignited by the explosion, which is an inherently destructive force, destroying everything in its path until available fuel is consumed, oxygen is removed, or the fire is suppressed via fire suppression (automatic or via fire fighters)

Most facilities have fire detection systems, fire suppression systems, and active fire brigades on the property. These measures mitigate the potential secondary impact from fire but may be victims of some explosive events. Terrorists and criminals are known to set secondary explosive devices designed to injure responding fire and police officials.

Fire in a fuel storage depot could interfere with operations.

Probability

Explosive probability is a function of maintenance, training, procedural adherence and safety.

Probability of an explosion can be influenced by lack of training, lack of maintenance, and lack of adherence to safety procedures. Because of the numerous potential sources of pressurized fuel and potential ignition source at production facilities, the probability of an explosion at a production facility is moderate to high.

Key Consequences

- Fatalities
- Water Shutdown (partial or complete)
- Power Shutdown (partial or complete)
- Loss of revenue
- Loss of facilities/equipment
- Adjacent property damage
- Reputation damage due to improper crisis management

[Explosion.xls](#)



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SCENARIO 3 – HAZARDOUS MATERIALS RELEASE

Background

Most of the ADWEA facilities handle large quantities of hazardous chemicals. Fuels, disinfection chemicals, treatment chemicals, lubricants and additives are toxic and many are flammable: some are explosive at ambient air temperatures. Fire is a risk in any industrial facility.

Hazardous materials are toxic, some in very small quantities. Additionally some used by the ADWEA companies are highly flammable even explosive. A release of these chemicals can have significant environmental impact, and can produce long-term environmental damage. Substantial economic loss is also associated with hazardous materials releases.

Most facilities have fire detection systems, fire suppression systems, and active fire brigades on the property. These measures mitigate the potential spread of fire.

Fire in a fuel storage depot could interfere with operations.

Release of gaseous chlorine could be fatal to any populations downwind from the release. Hazardous materials are toxic, some in very small quantities. Additionally some used by the ADWEA companies are highly flammable even explosive. A release of these chemicals can have significant environmental impact, and can produce long-term environmental damage. Substantial economic loss is also associated with hazardous materials releases.

Most facilities have fire detection systems, fire suppression systems, and active fire brigades on the property. These measures mitigate the potential spread of fire.

Fire in a fuel storage depot could interfere with operations.

Release of gaseous chlorine could be fatal to any populations downwind from the release.

Probability

Hazardous materials releases generally take place due to failure of a conveyance structure, during transfer from storage to processing, or during transportation. Release probability increases with lack of maintenance, training, and adherence to procedures and safety.

Because of the use of pressurized flammable fuels and other potentially explosive materials, the probability of an explosion at a production facility is moderate to high.

Key Consequences

- Fatalities
- Environmental impact
- Adjacent property damage
- Legal Issues
- Reputation damage due to crisis management

[Haz Materials.xls](#)



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SCENARIO 4 – SYSTEM CONTROL AND DATA ACQUISITION (SCADA) FAILURE

Background

Production and distribution of electricity and water is highly automated. SCADA controls the flow of water through the plants and systems. Similarly electric flow is managed and monitored in highly automated control centers.

Although the systems should have limited outside access through firewalls and other security measures, they are susceptible to a variety of failures, including sabotage. SCADA systems have been attacked in the past by disgruntled employees.

A combined physical and electronic attack on a utility structure could have devastating consequences.

While the systems are highly automated, they can be operated manually. Doing so would be challenging for the companies, but is possible.

SCADA failure could compromise ability to manage the broader system and if coupled with a physical attack could be devastating for the operation.

SCADA failure at ADWEA will become a crisis for all of the Affiliates, as well as ADWEA.

Probability

SCADA systems are typically mirrored, backed up, and are set to operate in default condition in the event of a failure.

The probability of a SCADA failure that could lead to a crisis is considered low.

Key Consequences

- Water shutdown (partial or complete)
- Power shutdown (partial or complete)
- Loss of revenue

[SCADA Failure.xls](#)



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SCENARIO 5 – SEA WATER INTAKE CONTAMINATION AND FINISHED WATER CONTAMINATION

SEA WATER INTAKE

Background

Production facilities produce electricity and potable water through desalination. Central to these production facilities is the availability of clean sea water from the Gulf. There is substantial oil and shipping traffic in the region which could potentially lead to accidents, spills, and various releases.

While a number of countermeasures are in place to prevent accidental navigation into the inlet structures, it is possible for vessels of some size to approach these structures and for pollutants to reach the intake structures.

Although the intakes are equipped with a variety of containment systems that are designed to capture and contain any contaminant before it enters the plants, there is no guarantee that pollutants will not reach the intake.

Damage to the intake structures of any of the production facilities would severely limit the ability for that plant to function. Depending on the cause and extent of the damage it would cause great harm to the population of Abu Dhabi and result in significant economic loss.

Contamination can also compromise the function of the plants and adds environmental impact to the equation.

Probability

The probability of a marine incident is a function of the volume of ship traffic, security controls by others, diligent monitoring of the intake, and potential for terrorism activities. The probability of sea water intake reaching crisis status is considered moderate to high.

Key Consequences

Water contamination

Water shutdown (partial or complete)

Power shutdown (partial or complete)

Loss of revenue

Legal issues

Reputation damage

FINISH WATER CONTAMINATION

Background

Contamination of Finished Water could be the result of cross-contamination from contaminated environments where the water pipes lay (ex. sewers, petroleum leaks from gas stations, industrial waste releases, etc.) or could be caused by terrorist acts, through the potential introduction of contaminants into the finished water through the transportation and distribution network. If contamination of the finished water took place, it will be handled by TRANSCO, ADDC and AADC according to their ERP and operational procedures. These Affiliates already monitor for compliance with primary and secondary drinking water standards. If the contamination were to be elevated to a Crisis (ex. loss of over 50% of water distribution or terrorism), it will fall under either the Crisis Trigger of Production Shutdown/Reduction or Terrorism.

[Sea Water Intake.xls](#)



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SCENARIO 6 – EARTHQUAKE

Background

Abu Dhabi is close to the Dibba Fault line. Al Ain is particularly close and would be expected to suffer greater damage, depending on the epicenter of the earthquake. The fault line has not produced an earthquake during the past hundred years and seismologists agree that such an event is increasingly likely

Earthquakes produce severe structural damage, collapse, and have the potential to trap and kill large numbers of people. The office facilities of the ADWEA companies are in high-rise buildings in Abu Dhabi, while the plants are in a variety of locations.

A major earthquake would be expected to damage both manufacturing facilities and transmission structures. It is known that Transco has very few linesmen which would slow recovery from a widespread event.

There are a number of pipelines that move fuels and other hazardous chemicals on the plant sites. An earthquake could produce a major hazardous materials release.

Probability

The region is “overdue” for an earthquake. However, the probability of earthquakes capable of damage leading to a crisis situation is low.

Key Consequences

- Fire
- Explosion
- Fatalities
- Water shutdown (partial or complete)
- Power shutdown (partial or complete)
- Loss of revenue
- Loss of workforce
- Loss of facilities/equipment

[Earthquake.xls](#)



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SCENARIO 7 – TSUNAMI / HURRICANE

Background

Tsunami and hurricanes are rare in the southern Middle East but have occurred. Tsunami can be caused by seismic activity and Hurricanes can strengthen in the warm waters of the Arabian Gulf. Both events are capable of producing flooding, significant property damage, and can cause hazardous materials releases.

Tsunami and Hurricanes cause significant damage due to flooding and high winds. Many of the facilities are designed to withstand some water and wind, but not those typically associated with these types of storms.

Flooding can also cause releases of hazardous chemicals which can have a significant environmental impact.

Probability

Much of the Abu Dhabi area is north of the area typically impacted by such storms.

Key Consequences

- Fatalities
- Environmental Impact
- Water contamination
- Water shutdown (partial or complete)
- Power Shutdown (partial or complete)
- Communication failure
- Loss of workforce
- Loss of facilities/equipment

[Tsunami - Hurricane.xls](#)



هيئة مياه وكهرباء أبوظبي
Abu Dhabi Water & Electricity Authority

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SCENARIO 8 – FLOOD

Background

Abu Dhabi lies along the gulf coast. While the Arabian Gulf is not prone to flooding, Tsunami and hurricanes are possible. Much of the area is flat, desert topography with limited flood and water control structures.

Flooding causes significant injury, property damage, and potentially hazardous materials releases. Many of the facilities are designed to withstand some water, but a flood could have a major impact.

Probability

Much of the Abu Dhabi area is north of the area typically impacted by such storms. The probability of a flood is considered low.

Key Consequences

- Fatalities
- Environmental Impact
- Water contamination
- Water shutdown (partial or complete)
- Power Shutdown (partial or complete)
- Communication failure
- Loss of workforce
- Loss of facilities/equipment

[Flood.xls](#)



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SCENARIO 9 – EPIDEMIC

Background

Disease can be spread through casual contact, air systems, and through travel. Abu Dhabi is a growing city with tremendous influxes of people from around the world. This makes the Emirate at some risk for transmission of disease. Moreover it is well known that a number of terrorist groups and nation states have access to weaponized biological agents.

Disease is problematic because it manifests itself most frequently as “common colds or flu” Some deadly contagious diseases can creep into environments carried by unwitting infected persons.

An epidemic could compromise operations by impacting availability of trained workers. This may not be a crisis in the short-term, however the number of absent employees and the duration of their absence could significantly affect the ability of the affiliate company to provide its services.

Probability

P

Epidemiologists estimate that outbreaks of disease are likely in industrialized countries. This can be exacerbated by the import of workers from foreign countries. Terrorists are known to possess some biological weapons and some groups in the region have threatened their use.

The probability of an epidemic impacting production to a crisis situation is moderate.

Key Consequences

Water contamination
Loss of workforce

[Epidemic.xls](#)



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SCENARIO 10 – TERRORIST THREATS

Background

While the United Arab Emirates enjoys comparative freedom from violence, the Emirates are in close proximity to some of most volatile places in the world. A number of terrorists and malevolent actors call the Middle East home and there is a substantial amount of movement among such persons around the region.

The objectives of modern terrorists have changed and many now seek retribution for perceived wrongs, redress for old real estate issues, food, or political change. Terrorists defy conventional risk assessment as they are able to exploit vulnerabilities, change targets, and postpone attacks. Today, many terrorist attacks are conducted as part of a larger religious struggle which makes these attacks more dangerous since the terrorist is less likely to be concerned about inflicting casualties. Attacks can be calculated to distract, detonate in rapid succession, and are likely to produce casualties and significant property damage.

Explosions themselves carry significant risks of injury, death and property damage. Fires and structural damage often accompany explosions. Deliberate explosions may include a variety of hazardous substances including chemicals, shrapnel, chemical, biological, or radiological materials designed to magnify the impact of the explosion.

The military has been deployed to protect the perimeter of the production facilities.

In the technological age threats can be communicated by wired telephone, cellular phone, or the Internet. Threats can include bombs, chemicals, biological agents, radiological materials, and contamination of potable water.

The objective of the threat is to disrupt normal operations. Sometimes threats are used as tests to measure responses for a later attack, other times threats are used to retaliate for a real or perceived grievance on the part of the person making the threat.

Threats can be distressing for the employee that receives it. Threats can be exploited by the media who may inadvertently magnify the impact of a threat.

Most threats are little more than distractions, but they all require an investigation to determine whether the threat is credible. Threats reported by the media can be magnified. Some threats can produce severe psychological impacts on the employee who receives it.

A terrorist attack would cause significant casualties, could result in significant property and facility damage, could produce significant environmental impact, and might threaten the future of the companies.

Probability

It is extremely difficult to predict the probability of a threat or attack with accuracy because they are crimes and terrorists will go to great lengths to avoid detection. Generally, labor disputes, domestic situations, and some political situations can yield threats. The companies must work closely with military and police officials to glean what they can from their intelligence services. The probability of a terrorist threat or act is moderate to high.

Key Consequences

- Fire
- Explosion
- Hazardous Materials Release

[Terrorist Threat.xls](#)

APPENDIX 1: FLOWCHARTS

APPENDIX 2: LISTS

ATTACHMENTS

Attachment - 1

Hazard Assessment Evaluation & Findings Report

Attachment - 2
Drills & Exercises Manual