

Task Order No. 832

USAID Contract No. PCE-I-00-96-00002-00

**Egyptian Environmental Policy Program
Program Support Unit**

Tranche 1, Objective 1

*Standard Operating Procedure:
Transportation Incident*

Environmental Disasters Management Unit

June 2000

PSU-12

for
**U.S. Agency For International Development
Cairo**

by
**Environmental Policy & Institutional Strengthening
Indefinite Quantity Contract (EPIQ)**

A USAID-funded project consortium led by **International Resources Group, Ltd.**

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Fact Sheet

USAID Contract No.: PCE-I-00-96-00002-00
Task Order No. 832

Contract Purpose: Provide core management and analytical technical services to the Egyptian Environmental Policy Program (EEPP) through a Program Support Unit (PSU)

USAID/Egypt's Cognizant Technical Officer: Holly Ferrette

Contractor Name: International Resources Group, Ltd.

Primary Beneficiary: Egyptian Environmental Affairs Agency (EEAA)

EEAA Counterpart: Eng. Dahlia Lotayef

Preface

Through competitive bidding, the U.S. Agency for International Development (USAID) awarded a multi-year contract to a team managed by International Resources Group, Ltd. (IRG) to support the development and implementation of environmentally sound strategic planning, and strengthening of environmental policies and institutions, in countries where USAID is active. Under this contract, termed the Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ), IRG is assisting USAID/Egypt with implementing a large part of the Egyptian Environmental Policy Program (EEPP).

This program was agreed-to following negotiations between the Government of the United States, acting through USAID, and the Arab Republic of Egypt, acting through the Egyptian Environmental Affairs Agency (EEAA) of the Ministry of State for Environmental Affairs, the Ministry of Petroleum's Organization for Energy Planning, and the Ministry of Tourism's Tourism Development Authority. These negotiations culminated with the signing of a Memorandum of Understanding in 1999, whereby the Government of Egypt would seek to implement a set of environmental policy measures, using technical support and other assistance provided by USAID. The Egyptian Environmental Policy Program is a multi-year activity to support policy, institutional, and regulatory reforms in the environmental sector, focusing on economic and institutional constraints, cleaner and more efficient energy use, reduced air pollution, improved solid waste management, and natural resources managed for environmental sustainability.

USAID has engaged the EPIQ contractor to provide Program Support Unit (PSU) services to EEPP. The PSU has key responsibilities of providing overall coordination of EEPP technical assistance, limited crosscutting expertise and technical assistance to the three Egyptian agencies, and most of the technical assistance that EEAA may seek when achieving its policy measures.

The EPIQ team includes the following organizations:

- Prime Contractor: International Resources Group
- Partner Organization:
 - Winrock International
- Core Group:
 - Management Systems International, Inc.
 - PADCO
 - Development Alternatives, Inc.
- Collaborating Organizations:
 - The Tellus Institute
 - KBN Engineering & Applied Sciences, Inc.
 - Keller-Bliesner Engineering
 - Conservation International
 - Resource Management International, Inc.
 - World Resources Institute's Center For International Development Management
 - The Urban Institute
 - The CNA Corporation.

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Abbreviations, Acronyms, and Glossary

ATF	Agency Task Force
CDIM	Checklist Draft and Incident Minutes
CEO	Chief Executive Officer
COR	Central Operations Room
CP	Command Post
EC	Executive Committee
EDMU	Environmental Disasters Management Unit
EEAA	Egyptian Environmental Affairs Agency
EEPP	Egyptian Environmental Policy Program (a USAID-funded program aimed at achieving a series of environmental policy reform performance objectives)
EEPP-PSU	Egyptian Environmental Policy Program, Program Support Unit
EIA	Environmental Impact Assessment
EMU	Environmental Management Unit (of a governorate)
EPF	Environmental Protection Fund
EPIQ	Environmental Policy and Institutional Strengthening Indefinite Quantity Contract. This is a contract issued by USAID's Global Bureau that enables environmental policy services to be provided to USAID missions worldwide.
GIS	Geographic Information System
GOE	Government of Egypt
HMC	Hazardous Materials Coordinator
IC	Incident Commander
IEMS	Integrated Environmental Management System
IP3	Institute for Public-Private Partnerships
LCD	Local Civil Defense
LFA	Lead Federal Agency
LHMT	Local Hazardous Materials Team
MOEA	(Egyptian) Ministry of Environmental Affairs
MSWM	Municipal Solid Waste Management
NCD	National Civil Defense
NEAP	National Environmental Action Plan (for Egypt)
NEDCP	National Environmental Disaster Contingency Plan
NRT	National Response Team
OEP	Organization of Energy Planning, attached to the Ministry of Petroleum
OSC	On-Scene Coordinator
RBO	Regional Branch Office (of EEAA)
RCD	Regional Civil Defense
RHMT	Regional Hazardous Materials Team
SOP	Standard Operating Procedure
TDA	Tourism Development Authority, attached to the Ministry of Tourism
USAID	U.S. Agency for International Development
USEPA	U.S. Environmental Protection Agency
WG	Work Groups
TL	Team Leader

Statement of Objectives

This Standard Operating Procedure (SOP) provides a generic approach to managing or confronting transportation incidents involving a spill or release of one or more hazardous materials, by describing responses to three different incident scenarios of increasing severity. This SOP describes how the three Levels of institutional framework for managing an environmental disaster in Egypt¹ work together.

The Scenarios are described chronologically, and then the individual roles and responsibilities of the different responders are described.

¹ The Operational, Tactical and Strategic Levels of Egypt's institutional framework for managing an environmental disaster are discussed in the Egypt's National Environmental Disasters Management Plan (NEDCP).

Describing Incidents

The level of severity of the incident compels what the level of response to an environmental incident must be. Three broad levels or Tiers of Incidents and Responses are considered possible involving the release of hazardous materials from a transport vehicle. The First Tier is expected to be manageable by the Transporter or Local (District) Authorities at the Operational Level. The Second Tier Incident involves coordination of resources between Local and Regional Authorities. The Second Tier Incident is managed from the Governorate, or Tactical Level. The Third Tier Incident requires mobilization of resources on a National Scale, and is managed from the Strategic Level. In all three scenarios, the initial report of the incident is at the local Civil Defense office. For purposes of this SOP, the scenarios for the three Tiers of Incidents are:

Tier One Transportation Scenario - A tank truck full of a hazardous material rolls over and some of its contents are spilled onto the ground. The driver is injured and the hazardous material is considered low risk.

Tier Two Transportation Scenario - A tank truck goes off a roadway, and its contents are leaking into a waterway upstream of a drinking water treatment plant. The driver has died and a moderate quantity of the hazardous material would be toxic if ingested.

Tier Three Transportation Scenario - A train derails near a densely populated area. Contents of multiple tank cars have leaked and caught fire. A number of people have respiratory complaints and the fire threatens a storage site of flammable material.

Addressing Incidents

Tier One Transportation Incident

Notification and Command

1. **Initial Contact** - Local Civil Defense (LCD) hears of a truck accident within their jurisdiction. The driver is injured and the truck is blocking traffic.
2. **Initial Assessment** - Police and an ambulance crew arrive at the scene within a very short time. Police begin re-routing traffic around the accident scene. The ambulance crew determines that the driver will need to be transported to a hospital. While providing first aid to the driver, the ambulance crew notices that liquid from the tanker is slowly leaking from the top-loading valves. The ambulance crew informs the Police officer in charge.
3. **Incident Commander** - The ranking police officer at the scene assumes responsibility for managing the response to the incident, and is called the Incident Commander (IC).
4. **Prioritize** - The IC determines the top priority issues. Because there are no apparent fire, explosion or inhalation hazards, the IC determines that the top priorities are tending to the injured driver, preventing contact with the spilled material, and identifying the spilled material.
5. **Establish Perimeter and Restrict Access** - The IC instructs other officers to keep people back from the vehicle and the growing pool of liquid. It should be noted that fuel might also be leaking from an overturned vehicle presenting a fire hazard. If considered safe to do so at this time, a dam or retaining wall is put up to contain the liquid and entrances to drains and sewers are blocked with plastic or piles of dirt. Unless it is necessary to limit the production and spread of vapors, and the material is known not to be water reactive, water should not be used to spray the material or wash the area.
6. **Initial Report and Deployment Status** - The IC has the Local Civil Defense Office notified that they are confronting a potential hazardous materials incident with liquid material contained on the ground, and requests that a Fire Control Crew come to the scene.
7. **The Local Civil Defense Office** -
 - Dispatches a Fire Control Crew to the scene.
 - Places the LCD Hazardous Materials Team (LHMT) on ACTIVATION Deployment Status and dispatches the team to the scene. Upon arrival at the scene, if the response is still active, the leader of the HMT assumes the role of the IC.
 - Initiates a Checklist Draft and Incident Minutes (CDIM).
 - Notifies the Regional Civil Defense (RCD) that they have Activated their HMT, and describes what is known. If possible the CDIM is sent by fax to the RCD.

8. **Regional Response Status** - Communications personnel in the RCD issue an ADVISORY to their Regional Hazardous Materials Team (RHMT), that an incident is being monitored that may require ACTIVATION.

Identify Pollutant

Steps are taken to identify the material leaking from the tanker.

1. **Driver Conscious** - If conscious, the driver is asked. The driver may know what the material is, or may have a shipping paper describing the material. At a minimum, the driver will know where the material was picked up and where it was being taken.
2. **Driver Not Conscious** - If the driver is not conscious, the cab of the truck might be searched for a shipping paper if it is considered safe to do so. There may be identification information on the vehicle or shipping container.
3. **Shipping Company, Shipper, and Receiver** - Even if the identity of the material is known, the driver's supervisor or company needs to be contacted to initiate a Company response to the incident, as they may have capabilities or contracted arrangements to remediate the accident and spill. In addition, the office of the transporter, the shipper and/or the receiver can be contacted because they may have specific knowledge of the material.

Identify Hazard

Once the material is identified, steps are taken to obtain information about the characteristics, toxicity, hazards, control measures and personal protective requirements of the material. In order of potential availability, the following are sources of this information:

- Driver
- Shipping Papers
- Material Safety Data Sheet, or MSDS, might be accompanying the Shipping Papers.
- The transport company, shipper, or receiver should be contacted even if information is available in the vehicle, or at the scene.
- Consult a copy of the Emergency Response Guidebook.
- Contact the LCD person responsible for hazardous materials incidents. The LCD might contact the RCD, or the IC may contact the Regional office directly. In turn, the RCD may contact the COR if they are unable to obtain the information themselves. Alternatively, if the RCD is not available, the LCD or IC may contact the COR directly.

Unidentified Hazardous Material

If the identity of the hazardous material is not known, the IC should use judgment to consider the degree of hazard associated with the material. Factors such as vapor production, odor, viscosity, apparent corrosive qualities should be taken into consideration. It is best to consider an unknown material as high risk, taking steps to remove persons from the immediate area, eliminating sources of flame or sparks, and using the highest available protective gear (e.g., Level A includes fully encapsulating protective suits and gloves, positive pressure supplied air respirators) when approaching the material.

Identify Potential Threat to Sensitive Receptors

The IC assesses the potential that the hazardous material will negatively impact sensitive receptors in the vicinity of the incident. Sensitive receptors are those that may be affected to a greater degree than the “average” person or structure. Examples of sensitive receptors include schools, hospitals, nature preserves, national monuments, water and food supply systems, and facilities that use or store hazardous materials. Means of determining whether there are sensitive receptors include:

- general knowledge and observation
- LCD maps and files
- EDMU COR
- Various Egyptian Ministries
- EEAA Environmental Impact Assessment group
- EEAA Industrial Compliance Inspection Group

Status Report

The IC provides a Status Report to the LCD, who in turn reports to the RCD. For purposes of this Transportation SOP Tier One Incident and Response scenario, the material has been identified, is considered to be a low risk, and there are no sensitive receptors in the vicinity. The decision is made that there is no need to deploy the RCD. The RCD maintains the RHMT on an ADVISORY status however, in the event that conditions change.

Establish a Safety and Mitigation Plan

With input from his team, and guidance from the LCD, RCD or other offices, the IC decides on a Safety and Mitigation Plan. Guidance on size and shape of the control zones, appropriate personal protective gear and mitigation options can be found in The Emergency Response Guidebook, the Egyptian Environmental Information System (EEIS), the Hazardous Substances Information Management System (HSIMS), various Internet sources and the CAMEO software system. For purposes of this Transportation SOP, Tier One Incident and Response scenario, the material has been identified, is considered to be a low risk, and there are no sensitive receptors in the vicinity.

1. **Determine Evacuation Needs** – Determine whether people in the area need to be backed further away from the incident. Recognize that under some circumstances, it is better to advise people to remain indoors. For example, if there is a toxic cloud that is moving and more injuries might result from an evacuation, people should be advised to remain indoors, shut doors and windows, shut off ventilation systems, and wait for an “All Clear” signal. For this Tier One Incident and Response, no evacuation is needed and persons need only be kept at a sufficient distance to safely establish the Control Zones.
2. **Establish Control Zones** - Establish an Exclusion Zone, a Contamination Reduction Zone and a Support Zone. The Exclusion Zone is completely within the Contamination Reduction Zone, which is completely within the Control Zone. The size and shape of these zones is dependent upon the level of hazard of the material, wind direction and physical constraints of the scene. Only persons directly involved in confronting the incident should be allowed in the Support Zone. Only trained persons wearing appropriate protective gear should be allowed in the Exclusion Zone. The Contamination Reduction Zone is where

contaminated clothing is removed, and items are cleaned for transport out of the area. For this Tier One Incident and Response, the zones need only be large enough to safely move around the vehicle and spilled material.

3. **Select Appropriate Personal Protective Gear** - The minimum protective gear for working with a hazardous material and approaching the spill should be Level D (chemical resistant gloves, long-sleeves and pants, closed top shoes), which is sufficient for this Tier One Incident and Response.
4. **Establish Plan for Mitigation** - The higher the risk of the material, the longer the duration of the incident, or the larger the amount of material involved in the spill, the more formal the Mitigation Plan should be. For small spills, involving low risk materials, deciding on an approach and briefing the persons involved should be adequate. For this Tier One Incident and Response, the basic need is to vacuum up spilled liquids and then place contaminated soils and solids into containers or a dump truck for removal.
5. **Obtain Needed Equipment** - Verify that needed equipment and materials are available or request them. The mitigation plan ought to include obtaining a sample of the spilled liquid and the contaminated soil.

Implement the Mitigation Plan

1. **Advise Public** – Provide appropriate information to the public and assure they are kept at a safe distance.
2. **Control the spread of the material** - This may be done with berms, or piles of dirt or other absorbent material. Cover drains and sewers with sheets of plastic, wood or other rigid material.
3. **Stop or limit leakage of new material** - Close valves. Pack material around small cracks or breaks. Use wooden or plastic plugs in punctures.
4. **Obtain samples** - Obtain representative samples of the liquid and contaminated soil. Samples should be placed in clean containers and properly labeled. A Chain-of-Custody form should be completed.
5. **Load liquid hazardous material** - Arrange for transfer of material remaining in the truck into another truck. This is most commonly done by the trucking company dispatching another tank truck to the scene. Alternatively, another tanker truck service may be called to the scene.
6. **Remove hazardous material** - As much spilled liquid material as is possible is pumped into the replacement tanker truck. Remaining liquid material is absorbed with absorbent or dirt. The surface of the truck are decontaminated or cleaned sufficiently to allow transport from the area. All contaminated material, including used safety equipment, is put into drums or directly into a transport truck for solids. The vehicles containing the liquid hazardous materials and contaminated solids are transported to locations for appropriate use or management according to regulatory requirements.

7. **Remove the overturned vehicle** - Tow trucks or heavy equipment are used to turn the vehicle upright and remove it from the scene. The vehicle involved in the accident is impounded for examination if necessary for investigation purposes.
8. **Stand-Down** - The IC notifies the LCD that the response has been completed, who in turn notifies the RCD. Both groups issue a CANCELLATION Notice indicating no further action is needed.
9. **Incident Report** - The IC completes a report describing the incident and the response activities with recommendations for changes as appropriate. The report is copied to the RCD for review.

Tier Two Transportation Incident

Notification and Command

1. **Initial Contact** - Local Civil Defense (LCD) hears of a truck accident within their jurisdiction. The driver is dead and the truck is partially off the road in a waterway.
2. **Initial Assessment** - Police and an ambulance arrive at the scene within a very short time. Police begin re-routing traffic around the accident scene. The ambulance crew confirms that the driver is dead, and notices that liquid from the tanker is leaking into the waterway. The ambulance crew informs the Police officer in charge.
3. **Incident Commander** - The ranking police officer at the scene assumes responsibility for managing the response to the incident, and is called the Incident Commander (IC).
4. **Prioritize** - The IC determines the top priority issues. Because there is no apparent fire, explosion or inhalation hazard and the driver is dead, the IC determines that the top priorities are identifying the material, identifying whether there are any sensitive receptors downstream (e.g., drinking water treatment intake structures) and stopping the further release of the material.
5. **Establish Perimeter and Restrict Access** - The IC instructs other officers to keep people out of the waterway, and back from the vehicle and any spilled material. It should be noted that fuel might also be leaking from the vehicle, which can present a fire hazard. Unless it is necessary to limit the production and spread of vapors, and the material is known not to be water reactive, water should not be used to spray the material or wash the area.
6. **Initial Report and Deployment Status** - The IC has the LCD notified that they are confronting a potential hazardous materials incident and that the material is entering a waterway. A Fire Control Crew is also requested to come to the scene.
7. **Local Civil Defense Office** -
 - Dispatches a fire Control Crew to the scene.
 - Places the LCD Hazardous Materials Team (LHMT) on ACTIVATION Deployment Status and dispatches it to the scene. If upon arrival at the scene, the response is still underway, the leader of the HMT assumes the role of the IC.

- The LCD begins to determine whether there are any sensitive receptor water users, such as drinking water intake structures in the vicinity.
- Initiates a Checklist Draft and Incident Minutes.
- Notifies the Regional Civil Defense (RCD) that they have activated their HMT, and describes what is known. If possible the CDIM is sent by fax to the RCD.

8. **Regional Civil Defense Office -**

- Asks personnel in the Regional Civil Defense (RCD) to issue an ALERT to their Regional Hazardous Materials Team (RHMT), that an incident is being monitored that may require ACTIVATION.
- The Ministry of Housing is contacted for assistance with identifying whether there are drinking water intake structures in the area and at risk.
- The RCD contacts the Waterways Police for assistance with identifying other sensitive receptors and potential use of watercraft or other specialized equipment.
- The RCD informs the EDMU COR.

9. **EDMU - COR** Communications personnel issue an ADVISORY to their National Response Team (NRT), that an incident is being monitored that may require ACTIVATION.

10. **Ministry of Housing** - Assigns a Coordinator to manage information regarding the incident. This person obtains information and decisions from the Ministry and communicates with the IC. The Coordinator also assists the IC regarding the need for information and materials from the Ministry.

11. **Waterways Police** - Assign a Coordinator to manage information regarding the incident to and within their agency, and to enable access to personnel and equipment.

Identify Pollutant

Steps are taken to identify the material leaking from the tanker. The cab of the truck is searched for a shipping paper if it is considered safe to do so. There may be markings or hazard information on the vehicle or containers. Even if the identity of the material is known, the driver's supervisor or company needs to be contacted to initiate a Company response to the incident, as they may have capabilities or contracted arrangements to remediate the accident and spill. In addition, the office of the transporter, the shipper and/or the receiver can be contacted because they may have specific knowledge of the material.

Identify Hazard

Once the material is identified, steps are taken to obtain information about the characteristics, toxicity, hazards, control measures and personal protective requirements of the material. In order of potential availability, the following are sources of this information:

- Shipping Papers
- Material Safety Data Sheet, or MSDS, might be accompanying the Shipping Papers.
- The transport company, shipper or receiver should be contacted even if information is available in the vehicle, or at the scene.
- Consult a copy of the Emergency Response Guidebook.

- Contact the LCD person responsible for hazardous materials incidents. The LCD might contact the RCD, or the IC may contact the Regional office directly. In turn, the RCD may contact the COR if they are unable to obtain the information themselves. Alternatively, if the RCD is not available, the LCD or IC may contact the COR directly.

Unidentified Hazardous Material

If the identity of the hazardous material is not known, the IC should use judgment to consider the degree of hazard associated with the material. Factors such as vapor production, odor, viscosity, apparent corrosive qualities should be taken into consideration. It is best to consider an unknown material as high risk, taking steps to remove persons from the immediate area, eliminate sources of flame or sparks, and using the highest available protective gear (e.g., Level A, including fully encapsulating protective suits and gloves, positive pressure supplied air respirators) when approaching the material.

Identify Potential Threat to Sensitive Receptors

The IC assesses the potential that the hazardous material will negatively impact sensitive receptors in the vicinity of the incident. Sensitive receptors are those that may be affected to a greater degree than the “average” person or structure. Examples of sensitive receptors include schools, hospitals, nature preserves and national monuments, water and food supply systems, and facilities that use or store of hazardous materials. Means of determining whether there are sensitive receptors include:

- general knowledge and observation
- LCD maps and files
- EDMU COR
- Various Egyptian Ministries
- EEAA Environmental Impact Assessment group
- EEAA Industrial Compliance inspection Group

Status Report

The IC provides a Status Report to the LCD, who in turn reports to the RCD. For purposes of this Transportation SOP Tier Two Incident and Response scenario, the material has been identified and is considered to be of moderate risk through ingestion. In this scenario, the material is continuing to leak from the tanker into the waterway and there is an intake structure for a drinking water treatment plant immediately downstream of the incident.

1. **RHMT Deployed** – The RCD issues an ACTIVATION Notice deploying the RHMT to the scene. Upon arrival at the scene, if the response is still underway the lead person on the RHMT assumes the role of IC.
2. **COR Notified** – The RCD notifies the COR that they have activated their RHMT. The COR issues an ALERT to the NRT that an incident is being monitored that may require ACTIVATION. Key headquarters staff and other federal agencies are notified through their respective assigned contacts.
3. **IIIB6c Contact Managers for Impacted Operations** – The RCD contacts officials for the water treatment plant, either directly or through the LCD. The officials provide contact information and authorization for decisions impacting the facility.

Establish and Implement a Safety and Mitigation Plan

With input from his team, and guidance from the RCD, or other offices, the IC decides on a Safety and Mitigation Plan. Guidance on size and shape of the control zones, appropriate personal protective gear and mitigation options can be found in The Emergency Response Guidebook, the EEIS, the HSIMS, various Internet sources and the CAMEO software system. In this Tier Two Transportation Scenario, the plans should be written down and reviewed with Response Team members.

1. **Determine Evacuation Needs** - Determine whether people in the area need to be backed further away from the incident. Recognize that under some circumstances, it is better to advise people to remain indoors. For example, if there is a toxic cloud that is moving and more injuries might result from an evacuation, people should be advised to remain indoors, shut doors and windows, shut off ventilation systems, and wait for an “All Clear” signal. Because the chemical in this scenario poses a risk through ingestion, there is no need to move the public further than the Support Zone.
2. **Establish Control Zones** - Establish an Exclusion Zone, a Contamination Reduction Zone and a Support Zone. The Exclusion Zone is completely within the Contamination Reduction Zone, which is completely within the Control Zone. The size and shape of these zones is dependent upon the level of hazard of the material, wind direction and physical constraints of the scene. Only persons directly involved in confronting the incident should be allowed in the Support Zone. Only trained persons wearing appropriate protective gear should be allowed in the Exclusion Zone. The Contamination Reduction Zone is where contaminated clothing is removed, and items are cleaned for transport out of the area.
3. **Select Appropriate Personal Protective Gear** - The minimum protective gear for working with the material and approaching the spill should be Level D (chemical resistant gloves, long-sleeves and pants, closed top shoes. Because the material involved in this scenario poses a threat due to ingestion, Class A protective gear is sufficient.
4. **Establish Plan for Mitigation** - The higher the risk of the material, the longer the duration of the incident, or the larger the amount of material involved in the spill, the more formal the Mitigation Plan should be. In this Tier Two Transportation Scenario, the plans should be written down and reviewed with Response Team members.
5. **Establish a Sampling Plan** – Establish a sampling plan for the contaminated water. Determine the maximum concentration still considered to be toxic. Determine the downstream flow rate of the contaminated plume and whether other sensitive receptors will be impacted.
6. **Obtain Needed Equipment** - Verify that needed equipment is available or request is available or request it.
7. **Implement the Mitigation Plan** - For this Transportation SOP, Tier Two Incident and Response Scenario, the basic plan entails capture and removal of highly concentrated material, monitoring the downstream movement of the contaminated plume, and preventing unsafe levels of contaminants from entering the water supply system.
8. **Control the spread of the material** - Deploy booms if the material floats. Shut down intake structures for the water treatment plant, or cover the intakes with sheets of plastic,

wood or other rigid material. If possible, block the downstream movement of the contaminated plume.

9. **Determine Safety of Drinking Water** - If contaminated material has entered the drinking water system, the Ministry of Housing should determine whether the drinking water is considered safe for consumption. Appropriate steps should be taken to advise the public accordingly, and supply an alternative water source if necessary.
10. **Stop or limit leakage of new material** - Close valves. Pack material around small cracks or breaks. Use wooden or plastic plugs in punctures.
11. **Transfer Material to a Secure Location** - Arrange for transfer of the hazardous material that is remaining in the damaged truck into another vehicle. This is most commonly done by the trucking company dispatching another tank truck to the scene. Alternatively, another tanker truck service may be called to the scene. If another tanker truck is not available in a reasonable time frame, consider pumping the material from the damaged truck into a temporary holding structure, such as a pool, pond, holding tank, or other temporary structure.
12. **Remove the damaged vehicle** - Tow trucks or heavy equipment are used to pull the vehicle from the waterway and remove it from the scene.
13. **Remove contaminated material** - As much contaminated material as is possible is pumped into the replacement tanker truck or temporary holding tank. Remaining material is absorbed with absorbent or dirt, and all contaminated material, including used safety equipment, is put into drums or directly into a transport truck for solids. The vehicles are transported to locations directed by the Transport Company and according to regulatory requirements.
14. **Evaluate Sample Analyses** – As sample analyses are obtained, the IC should review the data with the Coordinator for the Ministry of Housing.
15. **Daily Summary and Reassessment** – If the response lasts longer than a day, Daily Summaries should be prepared and the Safety and Mitigation Plans should be reassessed.
16. **Status Reports** - Daily or as significant conditions change or milestones are reached, the IC should obtain status reports from key personnel at the scene and the Coordinator for the Ministry of Housing.
17. **Reassess Plans** - The IC should reassess the Safety and Mitigation Plans depending on the progress made, and changing conditions.
18. **Daily Summary** - The IC prepares a Daily Summary Report and provides it to the COR, RCD and LCD. If possible this summary is presented via telephone or in person, to address questions.
19. **Reassess Incident Commander** - As conditions change the expertise needed for the role of the Incident Commander may change. The IC should discuss this with the COR, RCD and LCD during the Daily Summary.

20. **Press Briefing** - The IC, or a designee should conduct a press briefing daily.
21. **Stand-Down** - The IC notifies the LCD and RCD that the response has been completed, who in turn notifies the COR. All groups issue a CANCELLATION Notice indicating no further action is needed.
22. **Incident Report** - The IC completes a report describing the incident and the response activities with recommendations for changes as appropriate. The report is copied to the COR for review.

Tier Three Transportation Incident

Notification and Command

1. **Initial Contact** - Local Civil Defense (LCD) hears of a train accident within their jurisdiction. There are multiple injuries and a fire has erupted. Additional requests for ambulances come in with persons complaining of a strong chemical odor and breathing problems.
2. **Initial Assessment** – Police, fire and ambulance crews arrive at the scene within a very short time. Police begin re-routing traffic away from the area. The ambulance crews establish a triage system to prioritize injuries and treatment. The fire brigade begins to prioritize fire-fighting options. It is apparent from the damaged tank cars, fire and gas clouds that a major fire involving hazardous materials is underway.
3. **Incident Commander** - The senior officer of the fire brigade at the scene assumes responsibility for managing the response, and is called the Incident Commander (IC). A Command Post (CP) is established.
4. **Prioritize** - The IC determines the top priorities. Because there is a fire and there are complaints of breathing problems and a chemical odor, the IC determines that the top priorities are moving people back from the fire and spill, and controlling the fire.
5. **Establish Perimeter and Restrict Access** - The IC makes an initial assessment of how far back from the fire to keep responders and the public considering the wind direction and speed. This is communicated to the senior police officer, to coordinate the police' responsibility of maintaining the public at a safe distance.
6. **Initial Report and Deployment Status** - The IC has the Local and Regional Civil Defense notified that they are confronting a major incident involving hazardous materials, and makes initial requests for additional equipment.
7. **Local Civil Defense Office**
 - Deploy additional fire, communications, and medical treatment equipment and personnel as needed.
 - Place the LCD Hazardous Materials Team (LHMT) on ACTIVATION Deployment Status and dispatch them to the scene. Upon arrival at the scene, the Team Leader (TL) of the LHMT reports to the CP and is assigned the role of Hazardous Materials Coordinator (HMC).

- The LCD begins to determine whether there are any sensitive receptors in the area such as facilities that use or store flammable materials.
- Initiate a Checklist Draft and Incident Minutes.

8. Regional Civil Defense Office

- The Regional Civil Defense (RCD) Hazardous Materials Team (RHMT) is placed on ACTIVATION Deployment Status and is dispatched to the scene. Upon arrival at the scene, the Team Leader reports to the CP and assumes the role of HMC.
- The RCD notifies the COR.
- Other specialized equipment and teams are deployed as necessary.
- RCD communications personnel notify other key employees.

9. Central Operations Room

- The COR issues an ALERT to National Response Team (NRT), that an incident is being monitored that will likely require ACTIVATION.
- COR communications personnel notify other key employees and government officials.

Identify Pollutant

1. **Gather Information** – The HMC coordinates the efforts of the LHMT and RHMT to identify the materials involved in the fire. The office of the railroad should be contacted concerning the contents of the train. The railroad may also have specific knowledge of the material and capabilities or contracted arrangements to assist. There may be markings or placards on the rail cars.
2. **Obtain Air Samples** - The HMC coordinates obtaining air samples. Equipment such as a portable Gas Chromatograph/Mass Spectrometer, an Organic Vapor Analyzer and sample tubes (e.g., Draeger tubes) might be utilized.

Identify Hazard

1. **Hazardous Material Identified** - Once the materials are identified, the HMC gathers information about the characteristics, toxicity, hazards, control measures and personal protective requirements of the material, their mixtures and residues following combustion. In order of potential availability, the following are sources of this information:
 - Material Safety Data Sheet, or MSDS
 - The railroad and the owners of the materials being shipped
 - Consult a copy of the Emergency Response Guidebook.
 - The COR can consult the EEIS, HSIMS, CAMEO, various expert consultants and Internet sites.
2. **Assume Worst Case** - Even if information about the train's contents is readily available, it is not likely to immediately know which materials have been released and are involved in the fire. It is reasonable to err on the side of caution and assume that the materials involved represent the worst possible combination until sampling data confirms otherwise.
3. **Hazardous Material Identity Not Known** - If the identity of the hazardous material is not known, the HMC informs the IC to use judgment to consider the degree of hazard

associated with the material. Factors such as vapor production, odor, viscosity, apparent corrosive qualities should be taken into consideration. It is best to consider an unknown material as high risk, moving people out of the smoke and vapor plume several hundred meters away, eliminating sources of ignition and sparks, and using the highest available protective gear (e.g., Level A, fully encapsulating protective suits and gloves, positive pressure supplied air respirators) when approaching the material.

4. **Identify Potential Threat to Sensitive Receptors** – The IC assesses the potential that the hazardous material will negatively impact sensitive receptors in the vicinity of the incident. Sensitive receptors are those that may be affected to a greater degree than the “average” person or structure. Examples of sensitive receptors include schools, hospitals, nature preserves and national monuments, water and food supply systems, and facilities that use or store hazardous materials. Means of determining whether there are sensitive receptors include:
 - general knowledge and observation
 - information concerning other materials on the train
 - LCD maps and file
 - Contacting managers of adjacent operations
 - EDMU COR
 - Various Egyptian Ministries
 - EEAA Environmental Impact Assessment group
 - EEAA Industrial Compliance inspection Group

Status Report

The IC gathers information from key personnel at the scene including the HMC, and provides a Status Report to the LCD, RCD National Civil Defense (NCD) and COR. For purposes of this Transportation SOP Tier Three Incident and Response scenario, the materials have been identified. The materials themselves and/or their combustion components are considered to be of high risk for combustion and through inhalation. Materials are continuing to leak from various tank cars, and the fire is not yet under control. There is a storage site of gasoline, diesel fuel and propane adjacent to the railroad tracks and fire.

1. **COR ACTIVATION** – The COR activates the NRT and they are deployed to the scene. Upon arrival at the scene, the TL of the NRT assumes the role of HMC. Key headquarters staff and other federal agencies are notified through their respective assigned contacts.
2. **Disaster Declaration** - The mechanism for declaring the incident to be a National Disaster is initiated².

Establish a Safety and Mitigation Plan

1. **IC Prioritizes Action** – With the guidance of the NCD, the HMC and the COR (and the Disaster Management Taskforce if it has already convened), the IC decides on the most important steps for mitigating the incident. In this scenario, assuring that the public is kept far enough away from the incident, getting the fire under control, and preventing its spread to the adjacent storage site are considered the most important steps.

² The mechanism for declaring a disaster is described in the National Environmental Disasters Management Plan.

2. **Determine Evacuation Needs** - Determine whether people in the area need to be backed further away from the incident. Recognize that under some circumstances, it is better to advise people to remain indoors. For example, if there is a toxic cloud that is moving and more injuries might result from an evacuation, people should be advised to remain indoors, shut doors and windows, shut off ventilation systems, and wait for an “All Clear” signal. In this Tier Three scenario, it is decided to evacuate persons within 500 meters of the fire and advise people within the next 1000 meters to remain indoors until the fire is brought under control.
3. **Bring Fire Under Control** - Until and possibly after the fire is brought under control, the Control Zones are defined by the needs of the Fire Department. There will be an Exclusion Zone, an Action Zone for fire fighting, and a Support Zone. Under certain conditions, the HMT may advise the IC that after the fire is under control it is better to let the fire continue to burn. Conditions where this decision might be appropriate include large volumes of volatile liquid that might produce an explosion hazard should the fire be completely extinguished. Such a decision should only be made after discussion with the COR. When the priority shifts from fire fighting to hazardous materials management, the HMC will assume the role of IC and the Control Zones will be redefined.
4. **Limit Spread of Contaminated Material** - Little can be done about the spread of airborne contaminants during a fire. A mist or fog of water sprayed over the top of some materials can limit their volatilization and/or spread. Firefighting activities almost always generate large volumes of water. If considered safe to do so, the HMC may request of the IC to limit or control the spread of contaminated water by erecting earthen berms, closing off storm drains, or constructing catch basins. On the other hand, the large quantity of water involved can serve to dilute the contaminants and limit their possible impact.
5. **Establish a Safety and Mitigation Plan** - *[Note that for the balance of this Scenario, it is assumed that the fire has been extinguished. The HMC has taken over responsibility for the response and is the IC.]* With input from his team, and guidance from the HMC, or other offices, the IC decides on a Safety and Mitigation Plan. Guidance on size and shape of the control zones, appropriate personal protective gear and mitigation options can be found in The Emergency Response Guidebook, the EEIS, the HSIMS, various Internet sources and the CAMEO software system. In this Tier Three Transportation Scenario, the plans should be written down and reviewed with Response Team members.
6. **Determine Evacuation Needs** - Determine how far people in the area need to be kept away from the incident. At this stage of this Tier Three scenario, it is decided that 100 meters is a sufficient distance to keep the public from the Control Zone.
7. **Establish Control Zones** - Establish an Exclusion Zone, a Contamination Reduction Zone and a Support Zone. The Exclusion Zone is completely within the Contamination Reduction Zone, which is completely within the Control Zone. The size and shape of these zones is dependent upon the level of hazard of the material, wind direction and physical constraints of the scene. Only persons directly involved in confronting the incident should be allowed in the Support Zone. Only trained persons wearing appropriate protective gear should be allowed in the Exclusion Zone. The Contamination Reduction Zone is where contaminated clothing is removed, and items are cleaned for transport out of the area.

8. **Select Appropriate Personal Protective Gear** - At this stage in this Tier Three Transportation Incident and Response Scenario, it is felt that a moderate level of respiratory and skin protection is needed (Level C, full face air-purifying respirator and chemical resistant clothing).
9. **Establish a Plan for Mitigation** - The higher the risk of the material, the longer the duration of the incident, or the larger the amount of material involved in the spill, the more formal the Mitigation Plan should be.
10. **Establish a Sampling Plan** – Continue the air-sampling program until well after contamination levels have returned to normal. Establish a sampling regimen for liquids and solids to verify the contents of containers and tank cars, and identify the contaminants in or on the ground.
11. **Obtain Needed Equipment** - Verify that needed equipment is available or request it.

Implement the Mitigation Plan

At this stage of the Tier Three Transportation Incident and Response Scenario, the objectives are to identify, contain and remove the contaminated material and transportation equipment.

1. **Advise the Public** - Provide appropriate information to the public and assure that they are kept at a safe distance.
2. **Control the Spread of the Material.** - This may be done with berms, or piles of dirt or other absorbent material. Cover drains and sewers with sheets of plastic, wood or other rigid material.
3. **Stop or Limit Leakage of New Material** - Close valves. Pack material around small cracks or breaks. Use wooden or plastic plugs in punctures.
4. **Transfer Material to a Secure Location** - Arrange for transfer of the hazardous material that is remaining in damaged rail cars into other containers and/or vehicles. Consider pumping the liquid material from damaged tank cars into a temporary holding structure, such as a pool, pond, holding tank, or other temporary structure if necessary to reach other units.
5. **Remove the Damaged Vehicles** - Tow trucks, railroad and other heavy equipment are used turn rail cars and other vehicles upright, and replace them onto the rails or remove it from the scene.
6. **Remove Contaminated Material** - As much contaminated liquid material as is possible is pumped into the temporary holding tanks, replacement tank cars and/or tanker truck. Remaining liquid material is absorbed with absorbent or dirt, and all contaminated material, including contaminated soils, damaged equipment, and used safety equipment, is put into drums or directly into solids transport vehicles. The vehicles are transported to locations directed by the railroad authority or the owners of the material, and according to regulatory requirements.
7. **Obtain Sample Analyses and Reassess** – At least daily, or as samples are obtained, the Safety and Mitigation Plan should be reassessed.

8. **Daily Summary** – In this Tier Three Transportation Incident and response, the response action will undoubtedly last longer than a day. The IC should obtain status reports from key personnel at the scene, and then prepare Daily Summaries.
9. **Status Reports** - Daily or as significant conditions change or milestones are reached, the IC should obtain status reports from key personnel at the scene and at other locations.
10. **Reassess Plans** - The IC should reassess the Safety and Mitigation Plans depending on the progress made, and changing conditions.
11. **Daily Summary** - The IC prepares a Daily Summary Report and provides it to the COR and the Disaster Taskforce. If possible this summary is presented via telephone or in person, to address questions.
12. **Reassess Incident Commander** - As conditions change the expertise needed for the role of the Incident Commander may change. The IC should discuss this with the COR and Disaster Taskforce during the Daily Summary.
13. **Press Briefing** - The IC, or a designee should conduct a press briefing daily.

Stand-Down

The IC notifies the LCD and RCD that the response has been completed, who in turn notifies the COR. All groups issue a CANCELLATION Notice indicating no further action is needed.

1. **Incident Report** - The IC completes a report describing the incident and the response activities with recommendations for changes as appropriate. The report is copied to the COR and Disaster Taskforce for review.