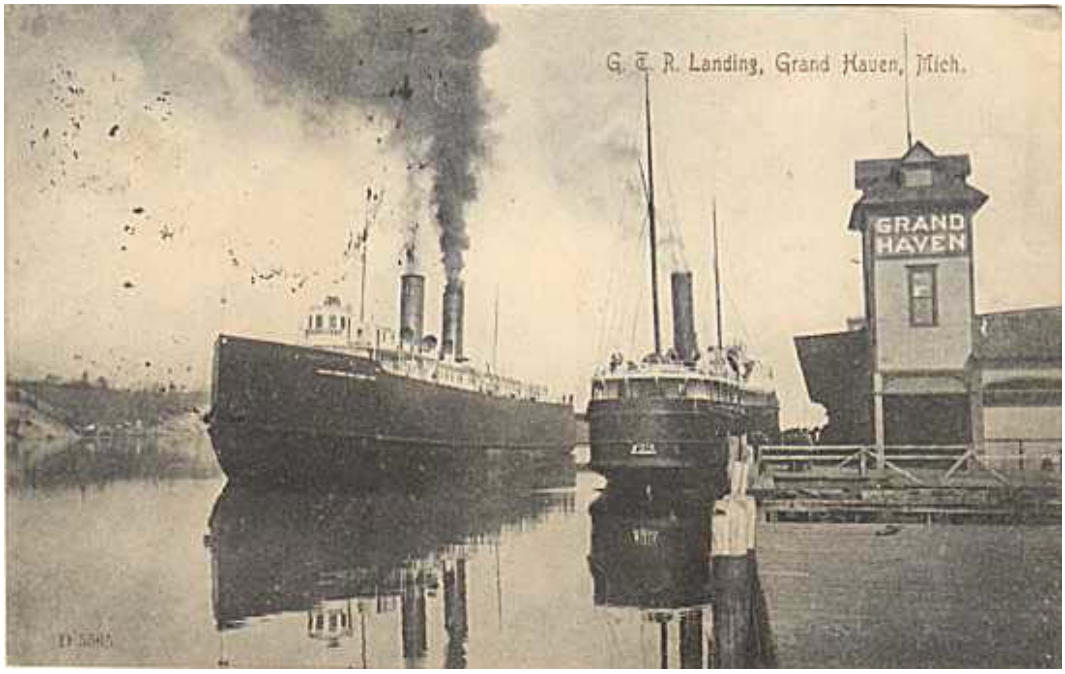
WESTERN MICHIGAN
SUB-AREA CONTINGENCY PLAN

October 2002

Michigan Counties of Allegan, Berrien, Mason, Muskegon, Oceana, Ottawa, and Van Buren



To report an oil or hazardous material spill, call:

National Response Center:
1-800-424-8802 (24-hour)

and

Michigan Pollution Emergency Alert System (PEAS):
1-800-292-4706 (24-hour)

U.S. Environmental Protection Agency Region 5
Ninth U.S. Coast Guard District

EMERGENCY NOTIFICATION[1] IN THE WESTERN MICHIGAN SUB-AREA

To Report Spills Call:

National Response Center
1-800-424-8802
and
Michigan Pollution Emergency Alert System (PEAS)
1-800-292-4706 (within Michigan)
1-517-373-7660 (outside Michigan)

Federal Agencies:

Time/Date	Agency	Number
_____	National Response Center	1-800-424-8802 (24-hour)
_____	U.S. EPA Region 5	1-312-353-2318 (24-hour)
_____	USCG MSO Chicago	1-630-986-2155 (24-hour)
_____	USCG MSD Grand Haven	1-616-850-2501 (24-hour)
_____	USCG Ninth District (Cleveland, Ohio)	1-216-902-6117 (24-hour)
_____	U.S. Fish and Wildlife Service	1-612-725-3536 (24-hour)
_____	National Oceanic and Atmospheric Administration	1-206-526-6317 (24-hour)
_____	U.S. Department of the Interior Pager:	1-215-597-5378 1-800-759-8352 (pin #1168849)

1 Notification as outlined here should be made by anyone who first discovers an oil or chemical spill, not merely by the responsible party. However, a number of federal, state, and local laws require spillers to notify authorities when they have a spill. Potential spillers should understand these requirements before they spill to determine if reportable quantities or chemical lists apply to spills they might have.

State Agencies:

Time/Date	Agency	Number
_____	Michigan Pollution Emergency Alert System (PEAS) **24-hour**	1-800-292-4706 (in-state) 1-517-373-7660
_____	Michigan State Police, Paw Paw Regional Dispatch	1-269-657-5551
_____	Michigan State Police, District 6	1-616-866-4411
	Michigan Dept. of Environmental Quality:	
_____	Cadillac District Office Mason Co.	1-231-775-3960
_____	Grand Rapids Field Office Ottawa, Muskegon, and Oceana Co.	1-616-356-0500
_____	Kalamazoo District Office Berrien, Van Buren, and Allegan Co.	1-269-567-3500
_____	Michigan Dept. of Natural Resources:	
	Operations Service Centers:	
	Roscommon (Field Headquarters)	1-517-275-5151
	Cadillac	1-231-775-9727
	Plainwell	1-616-685-6851

Local Agencies:

Time/Date	Agency	Number
_____	Allegan County Emergency Management	1-269-673-3899 (24-hour)
_____	Berrien County Emergency Management	1-269-983-7141, ext. 7200 (24-hour)
_____	Mason County Emergency Management	1-231-873-2388 (24-hour)
_____	Muskegon County Emergency Management	1-231-722-3524 (24-hour) 1-231-726-6650 (24-hour)
_____	Oceana County Emergency Management	1-231-873-2388 (24-hour)
_____	Ottawa County Emergency Management	1-616-738-4050 (24-hour) 1-800-249-0911 (24-hour)
_____	Van Buren County Emergency Management	1-269-657-3101 (24-hour)

Significant and Substantial Harm Oil Facilities:

Time/Date	Facility	Number
_____	Citgo Petroleum Corporation 2233 South 3rd Street Niles, Berrien County 49120	1-269-683-3420
_____	Citgo Petroleum Corporation 524 Third Street Ferrysburg, Ottawa County 49456	1-616-842-9040
_____	Equilon Enterprises L.L.C. 17806 North Shore Road Ferrysburg, Ottawa County 49456	1-616-842-2450
_____	Equilon Enterprises L.L.C. 17806 ½ Fulkerson Road Niles, Berrien County 49120	1-207-548-2201
_____	Marathon Ashland Petroleum L.L.C. 3005 Holton Road Muskegon, Muskegon County 49445	1-317-244-9551
_____	Mobil Oil Corp. 2150 South 3rd Street Niles, Berrien County 49120	1-269-684-2564
_____	CSX Transportation Bridges in St. Joseph, Grand Haven and Manistee areas	1-800-232-0145

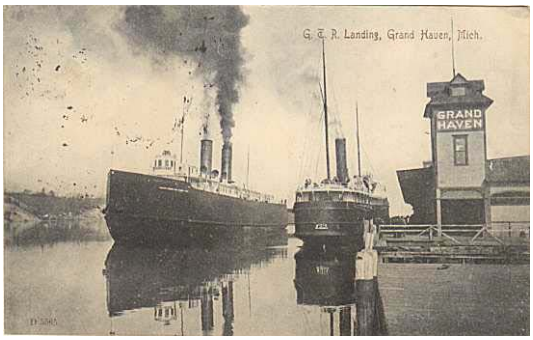
Oil and Oil Product Pipelines:

Time/Date	Facility	Counties Traversed	Phone
_____	Wolverine Pipe Line Company 8105 Valleywood Lane Portage, MI 49024-5151	Allegan Berrien Ottawa Van Buren	1-888-337-5004
_____	Marathon Ashland Pipe Line, LLC 539 South Main Findlay, OH 45840	Allegan Berrien Muskegon Ottawa Van Buren	1-800-537-6644
_____	Enbridge (US) Inc. 21 West Superior Street Duluth, MN 55802	Berrien	1-800-858-5253

Oil Spill Removal Organizations for Western Michigan[2]:

Time/Date	OSRO	Phone
_____	Heritage Environmental Services, LLC, Detroit, MI	1-314-388-0076
_____	Inland Water Pollution Control, Inc., Detroit, MI	1-313-841-5800
_____	Marine Pollution Control, Detroit, MI	1-313-849-2333
_____	Northern A-1, Muskegon, MI	1-231-728-4354
_____	Young's Environmental Clean, Comstock Park, MI	1-800-496-8647

2 Oil Spill Removal Organization (OSRO) listings are maintained by the USCG on a continual basis. For the most current listing of available OSROs in the Western Michigan Sub-area, and their response capabilities, refer to the following web address: http://www.uscg.mil/hq/g-m/nmc/response/zone.pdf



The Western Michigan Sub-area Contingency Plan provides for integrated measures for preparing for and responding to releases of oil and hazardous substances in the Michigan Counties of Allegan, Berrien, Mason, Muskegon, Oceana, Ottawa, and Van Buren. This is a "joint" plan between these counties, the Michigan State Police (MSP) Emergency Management Division (EMD), U.S. Coast Guard (USCG), and U.S. Environmental Protection Agency (EPA).

The Western Michigan Sub-area Contingency Plan has been developed in accordance within the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan and the Region 5 Oil and Hazardous Substances Integrated Contingency Plan. This Plan complements the Marine Safety Office Chicago Area Contingency Plan; Northern Michigan Sub-area Contingency Plan; Michigan Emergency Management Plan; and the local emergency management plans geographically covered within this plan.

This plan will be kept under continual review. Changes, additional information, or corrections will be promulgated as necessary.

Allegan County	Van Buren County
Berrien County	5th District Michigan State Police
Mason County	6th District Michigan State Police
Muskegon County	U.S. Coast Guard
Oceana County	U.S. Environmental Protection Agency
Ottawa County	

WESTERN MICHIGAN SUB-AREA CONTINGENCY PLAN
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I. STATUTORY AUTHORITY

A. Oil Pollution Act of 1990

The Clean Water Act (CWA), as amended by the Oil Pollution Act of 1990 (OPA), expanded federal requirements for oil spill and hazardous substances preparedness at all levels of government and by those facilities deemed to have the potential to cause significant and substantial harm to the public health and environment. OPA mandated the establishment of new planning entities and requirements for the National Response System to deal specifically with oil spills and CWA hazardous substances during preparedness and response activities. The Area Committee is one such entity and the Area Contingency Plans (ACPs) are planning requirements initiated by OPA.

B. Authority

1. Federal Register

Pursuant to OPA Section 4202(b)(1)(A), the President designated areas for which ACPs were to be prepared. In Executive Order 12777 (56 Federal Register [FR] 54757), the President delegated to the Administrator of the U.S. Environmental Protection Agency (EPA) responsibility for designating the Areas and appointing the Committees for the Inland Zone, as defined by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] 300.5). The U.S. Coast Guard (USCG) has responsibility for designating Areas and appointing Committees for the Coastal Zone, as defined by the NCP.

In 57 FR 15198, the Administrator of the U.S. EPA designated the 13 existing Regional Response Team (RRT) areas as the planning areas for initial ACP development and the RRTs as the initial Area Committees. In addition, the Administrator of the U.S. EPA delegated to the 10 Regional Administrators the ability to sub-divide these initial areas based upon perceived need, sensitivity to impact by a discharge, or other mitigating circumstances.

In 57 FR 15201, the Commandant of the USCG designated the 47 existing Captain of the Port (COTP) Zones (as described in 33 CFR Part 3) as the planning areas for the Coastal Zone.

2. Final Rule

The final rule, published in 59 FR 47384, revised 40 CFR Parts 9 and 300 of the NCP. The revisions to the NCP (Section 300.210 [c][1]) required the following of ACPs:

(1) Required by statute to be developed under the direction of an FOSC;

(2) Area Committees, in consultation with the appropriate RRT, USCG District Response Groups (DRGs), the National Strike Force Coordination Center (NSFCC), Scientific Support Coordinators (SSCs), Local Emergency Planning Committees (LEPCs), and State

Emergency Response Committees (SERCs), shall develop an ACP for the designated Area.

When implemented in conjunction with the NCP, the ACP shall be adequate to remove a worst-case discharge to mitigate or prevent a substantial threat of such a discharge, from a vessel, offshore facility, or onshore facility operating in or near the Area.

3. Area Committee

To accomplish the coordinated planning structure envisioned under OPA, Area Committees, under the direction of the predesignated federal On-scene Coordinator (FOSC), are established to develop an ACP. The ACP, in conjunction with the NCP, should be adequate to remove a worst case discharge from a facility or vessel operating in or near the Area and to mitigate or prevent a substantial threat of such a discharge in the Area.

The Area Committee is required to develop ACPs that:

(1) Describe areas of special environmental, economic or cultural significance;

(2) Outline the responsibilities of federal, state, local, and tribal agencies and facility and vessel operators in planning and response; and

(3) Detail procedures on the coordination of response plans and equipment.

The U.S. EPA Region 5 has designated Sub-areas within the Region to augment planning efforts at the local level. The Western Michigan Sub-area has been designated as such an area and its geographic extent is described in detail in Section III.

4. Area Contingency Plan

The plan has been developed to maintain consistency with the following plans:

- Region 5 Regional Response Team (RRT) Oil and Hazardous Substances Pollution Contingency Plan and Area Contingency Plan (RCP-ACP)
- NCP
- USCG Marine Safety Office (MSO) Chicago Area Contingency Plan
- Michigan Emergency Management Plan (MEMP)
- Local plans of the Western Michigan Sub-area
- Northern Michigan Inland Sub-area Contingency Plan
- USCG MSO Sault Ste. Marie Northern Michigan Coastal Area Contingency Plan

The plan applies to and is in effect for:

(1) Discharges of oil into or upon the navigable waters, on the adjoining shorelines to the navigable waters, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (Section 311(b)(3) of the Clean

Water Act); and

(2) Releases into the environment of hazardous substances and pollutants or contaminants that may present an imminent and substantial danger to public health or welfare in the Sub-Area.

This plan expands upon the contingency and response requirements set forth in the NCP, augments coordination with state and local authorities, and integrates existing state, local, and private sector plans for the Sub-area. It is intended to set forth procedures to mitigate or prevent a worst-case discharge or the substantial threat of a worst-case discharge.

5. Updating

Section 311(j)(4)(C)(viii) requires that the Area Committee update the ACP periodically. It has been determined that this Sub-area Plan will be updated annually for three years, starting in 2003 and once every three years thereafter. Response equipment, notification, and sensitive area listings may be updated more frequently at the discretion of the Area Committee.

II. INTEGRATION WITH OTHER RESPONSE PLANS

A. Private Sector Response Plans

Private sector response plans, including those for pipelines, vessels, and facilities, are structured and written as self-contained documents that serve as a complete reference tool for pipeline, vessel, and facility operators during a spill response. These plans must be consistent with local, state, and federal government contingency plans, including the Western Michigan Sub-area Contingency Plan. They must identify response personnel and equipment to be used to mitigate a worst-case discharge. Environmental, economic, and cultural sensitivity data, response resources, and other information required as part of private sector response plans must be consistent with this Sub-area Plan for the Western Michigan area.

B. Local Response Plans

The counties and a number of the cities in the Western Michigan Sub-area are required by the State of Michigan to maintain emergency operations plans that detail response procedures, agency roles, resources, and training for public response agencies. These include plans developed by the LEPCs under the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Michigan State Police (MSP) District Emergency Management Division (EMD) plans (Michigan Public Act 390).

C. Michigan Emergency Management Plan

The MEMP is the comprehensive, all-hazard plan that coordinates the emergency management activities of mitigation, preparedness, response, and recovery within the State of Michigan. The MEMP is a policy document developed and maintained by the MSP EMD. The MEMP coordinates the activities, personnel, and resources of state agencies in mitigating against, preparing for, responding to, and recovering from a variety of natural and technological disasters and emergencies to which the state is vulnerable.

D. Northern Michigan Inland Sub-area Contingency Plan

The Northern Michigan Inland Sub-area Contingency Plan, when implemented in conjunction with other local, state, and federal government and private contingency plans, is designed to effectively facilitate the removal of a worst-case discharge from a facility, vessel, or pipeline operating in or near the area covered in the plan. This plan includes a description of the geographic area; the environmental, economic, and cultural resources that might be negatively impacted by a discharge and for which protection is planned; descriptions of the responsibilities of the stakeholders in the plan; a listing of available equipment to an owner/operator and government agencies to ensure effective and immediate removal of a discharge; a description of the procedures for approval and use of dispersants; and a description of how the plan is integrated with other local, state, and federal agency and private sector plans.

This Plan is an annex to the RRT 5 RCP-ACP that covers the States of Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin and a companion plan to this document. An online version of the Northern Michigan Inland Sub-area Contingency Plan is available at:

http://www.great-lakes.net/partners/epa/northmi/

E. USCG MSO Chicago Area Contingency Plan

This Plan may be described as an annex to the USCG MSO Chicago ACP. The function and intent of the plan is identical to the mandates of this Sub-ACP, except that the coverage is for the coastal area (*e.g.*, the waters of the Great Lakes and interconnecting waterways to the shoreline, including the beaches) in Illinois, Indiana, and Michigan as defined for the MSO Chicago COTP Area of Responsibility (AOR). Integration of this Plan and the USCG MSO Chicago ACP is critical as made obvious by the dynamics of oil spills. Spills that may start on the surface waters of the inland zone may flow downstream into the coastal zone. Spills in the coastal zone may travel by wind action upstream impacting the environmental, economic, and cultural resources of the inland zone. The similarity in the make-up of the inland and coastal Area Committees has allowed for the synthesis of this Sub-ACP into the dynamics of the USCG MSO Chicago ACP.

F. Regional Response Team 5 Integrated RCP-ACP

RRT 5 developed the RCP-ACP to coordinate timely, effective response by various state and federal agencies and other organizations to discharges of oil or releases of hazardous substances. The RCP-ACP includes information on useful facilities and resources within federal Region 5, from government, commercial, academic, and other sources. The RCP-ACP coordinates with state emergency response plans, the Sub-ACP, and EPCRA local emergency response plans. The complete text RCP-ACP can be viewed online at:

http://www.great-lakes.net/partners/epa/acp-rcp/acp-rcp1.html.

G. National Oil and Hazardous Substances Pollution Contingency Plan

The NCP (40 CFR Part 300) provides the organizational structure and procedures to prepare and respond to discharges of oil and releases of hazardous substances, including specific responsibilities among government agencies, descriptions of resources available for response, a summary of state and local emergency planning requirements, and the procedures for undertaking removal actions under the CWA. A complete outline of oil spill response and planning procedures can be found in Appendix E of the NCP. The text of the NCP can be found on the Internet at:

http://www.nrc.uscg.mil/ncp.htm

H. Federal Response Plan

The Federal Response Plan was developed under the Disaster Relief Act of 1974, as amended by the Stafford Disaster Relief Act of 1988. The Federal Response Plan established a foundation for coordinating federal assistance to supplement local and state response effort to save lives, protect public health and safety, and protect property in the event of a natural disaster, such as a catastrophic earthquake, or declared major disasters by the President.

The delivery of federal assistance is facilitated through 12 annexes, or Emergency Support Functions (ESFs), which describe a single functional area of response activity. The Hazardous Materials Annex, ESF #10, addresses releases of oil and hazardous substances that occur as a result of a natural disaster or catastrophic event and incorporates preparedness and response actions carried out under the NCP. U.S. EPA serves as the Chair of ESF #10 and is responsible for overseeing all preparedness and response actions associated with ESF #10 activities. All National Response Team (NRT) and RRT departments and agencies serve as support. The text of the Federal Response Plan can be found on the Internet at:

http://www.fema.gov/fema/fed1.htm

I. Federal Radiological Emergency Response Plan

The objective of the Federal Radiological Emergency Response Plan (FRERP) is to establish an organized and integrated capability for timely, coordinated response by federal agencies to peacetime radiological emergencies. The FRERP is an interagency agreement that coordinates the response of various agencies under a variety of statutes. The FRERP:

- Provides the federal Government's concept of operations based on specific authorities for responding to radiological emergencies

- Outlines federal policies and planning considerations on which the concept of operations of this Plan and federal agency specific response plans are based

- Specifies authorities and responsibilities of each federal agency that may have a role in such emergencies.

The FRERP covers any peacetime radiological emergency that has actual, potential, or perceived radiological consequences within the U.S., its Territories, possessions, or territorial waters and that could require a response by the federal Government. The level of the federal response to a specific emergency will be based on the type and/or amount of radioactive material involved the location of the emergency, the impact on or the potential for impact on the public and environment, and the size of the affected area. Emergencies occurring at fixed nuclear facilities or during the transportation of radioactive materials, including nuclear weapons, fall within the scope of the FRERP regardless of whether the facility or radioactive materials are publicly or privately owned, federally regulated, regulated by an agreement state, or not regulated at all. Under the Atomic Energy Act of 1954 (Subsection 274.b.) the NRC has relinquished to certain

states, its regulatory authority for licensing the use of source, byproduct, and small quantities of special nuclear material.

State and local government requests for assistance, as well as those from owners/operators of radiological facilities or activities, may be made directly to the federal agencies participating in the FRERP, FEMA, or to other federal agencies with which they have preexisting arrangements or relationships. The FRERP can be viewed online at:

http://www.fas.org/nuke/guide/usa/doctrine/national/frerp.htm

III. GEOGRAPHIC COVERAGE

The Western Michigan Sub-area is contained entirely within the State of Michigan and includes the counties of Allegan, Berrien, Mason, Muskegon, Oceana, Ottawa, and Van Buren.

These counties comprise the parts of Districts 5 and 6 of the MSP EMD and the Kalamazoo, Grand Rapids, and Cadillac Districts for MDEQ. (**Figure III-1**).

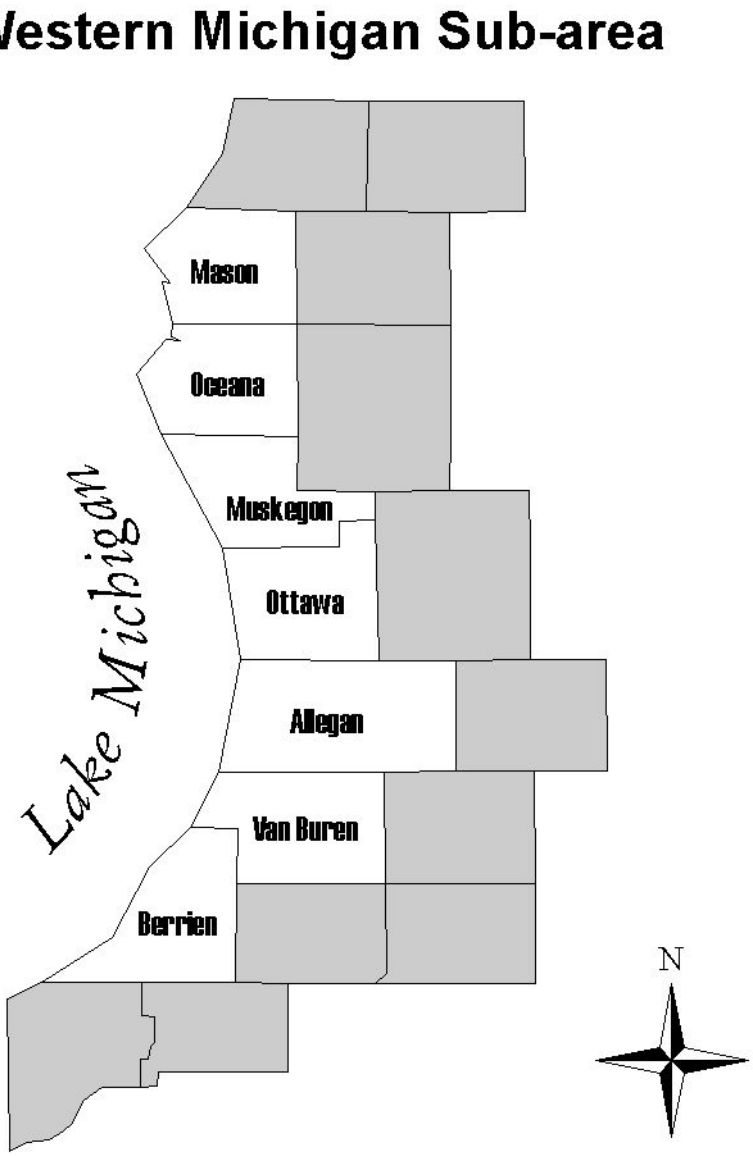


Figure III-1, Western Michigan Sub-area

In addition, the federal jurisdictional response boundary between U.S. EPA Region 5 and USCG District 9 in the Western Michigan Sub-area is defined below as:

- Pere Marquette Lake (Ludington): Entire lake throughout up to and including the mouth of the Pere Marquette River to Old U.S. 31 bridge

- Pentwater Lake: Entire lake

- White Lake: Entire lake

- Muskegon/Bear Lake (Muskegon, Michigan): Entire lake throughout up to and including the Muskegon River to the U.S. 31 bridges

- Mona Lake: Entire lake

- Spring Lake: Entire lake

- Grand River: From the mouth to the end of the dredged channel at Buoy #78 (in Ottawa County approximately 17 miles upstream)

- Pigeon Lake: Entire lake up to the fixed bridge in the intake channel of the J.H. Campbell power plant and on the eastern end up to the fixed bridge of Lakeshore Avenue

- Lake Macatawa: Entire lake to the end of the dredged channel marked by buoys #25 and #26 (eastern end of the lake in Holland)

- Kalamazoo Lake (Douglas/Saugatuck): Entire lake up to and including the Kalamazoo River to the CSX Railroad bridge, approximately 11 miles upstream

- Black River (South Haven): From the mouth to the U.S. 31 bridge, approximately 2.6 miles upstream

- St. Joseph River (St. Joseph): From the mouth to the Somerleyton bridge, approximately 6.6 miles upstream

- Paw Paw River (Benton Harbor): From the mouth to the CSX Railroad bridge, approximately 3.2 miles upstream

- Galien River: from the mouth to the Highway 12 bridge, approximately 2 miles upstream

IV. WORST CASE DISCHARGE

A. Worst Case Discharge Definition

A worst case discharge, as defined by Section 311(a)(24) of the CWA, means, in the case of a vessel, a discharge in adverse weather conditions of its entire cargo, and in the case of an offshore facility the largest foreseeable discharge in adverse weather conditions or with an onshore facility the capacity of the largest tank.

B. Worst Case Discharge Scenarios

The Western Michigan Sub-area contains a number of highly sensitive receptors to the impacts of an oil or hazardous substance release. A large number of communities along the lakeshore rely extensively on the waters of eastern Lake Michigan for drinking. The dune and wetland complexes at the shoreline are numerous. Western Michigan counties receive large boosts to their local economies from recreational dollars spent on boating, lodging, and tourism. Many of the waters of Western Michigan are migratory stopovers for waterfowl. These types of circumstances and sensitive areas must be considered during the planning, preparedness, and response phases of oil and hazardous substance releases.

The Western Michigan Sub-area contains a number of potential spill sources that could release large quantities of oil, and has a number of extremely sensitive areas that would be negatively affected by such a release. Although there are no tank vessels or barges, there is consistent bulk freighter visits to Western Michigan Sub-area ports transporting coal, aggregate, and cement. In addition there is considerable vessel traffic transiting the adjacent waters of Lake Michigan. This sets up potential scenarios for major impacts to the resources of the area in the event of a sinking, collision, allision, or accident bilge release of oily materials. Also, tank truck traffic, particularly on the main North/South route of U.S. Highway 31 going to and from the Muskegon terminal, is very substantial. Railroad tank cars and the fuel carried for the locomotive also offer other potential spill sources, not only of oil or oil products, but also numerous hazardous substances.

In addition to oil and hazardous substances, the Western Michigan Sub-area also is home to two nuclear power generating facilities. Though not a focus of this plan, these facilities warrant special attention during all phases of preparedness. The waterside portion of these facilities are designated as “security zones” by USCG and are off limits to commercial vessel and recreational boating traffic. These security zones are published in the Federal Register and should be observed at all times and taken into specific consideration during response when unexpected incursions may intrude on these areas.

Rather than present a single worst case scenario, a series of scenarios have been compiled by the Area Committee for which responders within the area must be prepared. The Area Committee recommends further development of one or all of these scenarios with inputs from private, local, state and federal committee members.

Scenario 1: A major release reaches Muskegon Lake threatening Muskegon businesses, parks, and homes along the shoreline of the Lake and having a major potential to reach Lake Michigan. Such a release could occur:

- If an oil storage facility upstream of Muskegon Lake experienced a catastrophic failure from one of its storage tanks or had some other major release.

- If a train derailment/accident occurred causing a release within Muskegon or along tracks on the southern shore of Muskegon Lake and could follow a drainage route or storm sewer into the Lake.

- If an oil tanker truck accident occurred on Highway 31 and the spill could follow a drainage route or storm sewer into Muskegon Lake.

- If a lake freighter delivering coal to DTE's B.C. Cobb Power Plant and allided or collided causing a release of its tanks of No. 6 Fuel.

Scenario 2: A significant quantity of oil is released to a waterbody in the Sub-area. The product travels to a habitat supporting a large concentration of wildlife, including threatened and endangered species, and threatening public lands and resources. Examples of areas known for such concentration of wildlife and or resources are included in the Western Michigan Inland Sensitivity Atlas.

- Where either the Wolverine or Marathon pipeline crosses a river, trout stream, or lake including the Kalmazoo River, Lake Macatatwa, or Muskegon River

Scenario 3: A large quantity of oil is released into a storm or sanitary sewer located within the Sub-area, posing threats to public safety, the environment, and property. Such a release could occur:

- If a tanker truck, storage tank, or train released oil near a sewer conduit. Trucking, storage, and railroad activities are carried out in close proximity to sewers within the Sub-area.

Scenario 4: A large capacity (e.g. 500,000 gallons or more) aboveground oil storage tank located near Lake Michigan or an inland waterway, releases a large quantity of oil. Threats to public safety, the environment, and property are posed. Locations of storage tank capacities with 500,000 gallons or more of asphalt, crude oil, or refined product include:

- Citgo Petroleum Corp. – Niles, Berrien County
- Equilon Enterprises, LLC – Niles, Berrien County
- Wolverine Pipeline Company – Niles, Berrien County
- Marathon-Ashland Petroleum, LLC – Muskegon, Muskegon County
- Citgo Petroleum Corporation – Ferrysburg, Ottawa County
- Equilon Enterprises, LLC – Ferrysburg, Ottawa County

Scenario 5: A major fire involving oil occurs in the Sub-area, threatening public safety and health, the environment, and property. Such a fire could occur:

- Anywhere in the Sub-area where large quantities of oil are stored or transported. Such activities occur throughout the Sub-area in quantities sufficient to pose a significant threat in the event of a fire.

C. Critical Issues

Critical issues that need to be addressed:

- Command and Control - An ICS or Unified Command System must be quickly initiated to facilitate the intertwining of the anticipated local, state, federal agency and private group response effort.

- Communications - Communications must be centrally managed to handle the multiple communication devices available to response personnel, including: multi-band radios, conventional telephones, cellular telephones, facsimile, and pagers. In addition, the Sub-area Committee should also keep in mind that response groups may be able to utilize satellite hook-ups for computer downloads of real time information including remotely developed trajectory models, satellite imagery, and other response-specific data.

- Waterway Access - Access points, though limited, are identified in the Western Michigan Inland Sensitivity Atlas and include marinas and boat ramps. Resources transported by land and air should be pre-authorized, as required, before the need for deployment.

- Public Health - It may become necessary to secure public and private surface water intakes downstream of the spill. Notification at the local level should be rapidly implemented. Alternate sources of potable water may need to be developed concurrent to response operations.

- Removal, Recovery, and Disposal Strategy - Open water recovery is the preferred recovery method as the shoreline is characterized by cobble, sand beaches, and fringing wetlands and avoids protracted shoreline cleanup. Storage and disposal, though, in the open water often necessitates downtime for off-loading of product once on-board capacity has been reached. The Sub-area Committee may wish to pursue identifying sources of on-water storage including barges or idle tankers to increase capacity and minimize downtime. For actions in the inland zone, the Michigan DEQ will provide information on TSD facilities and appropriate strategies.

V. RESPONSE RESOURCES

A. Federal Resources

1. U.S. Environmental Protection Agency

The U.S. EPA Region 5 FOSC may be activated at 312-353-2318 (24-hour)

In Section 300.415 of the NCP, the U.S. EPA, following notification, may, as appropriate and following a preliminary site assessment, assume the lead in a removal action. Triggers for such an action include the threat to public health or welfare or the environment. Actions to be taken are to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of a release. In a federalized response action control is taken from the responsible party, but not the financial responsibilities. Response actions are often federalized when the responsible party is unable or refuses to take appropriate and timely action. Local and state responding parties retain their role in the action.

U.S. EPA Region 5 can provide emergency response cleanup services to Western Michigan within 6 hours of notification. All contract personnel provided by U.S. EPA are HAZWOPER (29 CFR 1910.120) trained for emergency response and clean-up work.

a. Environmental Response Team

U.S. EPA's Environmental Response Team (ERT) has expertise in treatment technology, biology, chemistry, hydrology, geology, and engineering. The ERT can provide the FOSC access to special equipment to deal with chemical releases, and can provide the FOSC with advice concerning hazard evaluation, multimedia sampling and analysis, risk assessment, on-site safety, clean-up techniques, water supply decontamination and protection, use of dispersants, environmental assessment, degree of clean-up required, and the disposal of contaminated materials. The ERT also offers various training courses to prepare response personnel.

b. Superfund Technical Assessment and Response Team

U.S. EPA maintains contracts with groups specifically designated for response activities. For assessment, monitoring, support, and response roles U.S. EPA utilizes the Superfund Technical Assistance and Response Team (START) contracts. Specialties available to U.S. EPA through the START include: biological and ecological sciences, engineering, geology, health sciences, and analytical laboratory support. START personnel work directly with the U.S. EPA FOSC providing response and removal support on a 24-hour, as needed, basis.

c. Emergency and Rapid Response Services

U.S. EPA Region 5's Emergency and Rapid Response Services (ERRS) supports removal program activities. The ERRS contract is conducted in accordance with the NCP, 40 CFR Part

300, Section 311 of the CWA as amended by OPA, Section 104 of the CERCLA, as amended by SARA, and other applicable federal, state, and local regulations and statutes. ERRS resources are available at the request of the U.S. EPA FOSC to provide fully trained personnel, services, materials, equipment, and supervision within a response period of 6 to 48 hours. The ERRS scope of work includes containment, countermeasures, cleanup, mitigation, restoration and transportation and disposal of oil and/or hazardous substances released in U.S. EPA Region 5.

Typical equipment resources available through the U.S. EPA ERRS contract includes containment and absorbent boom, boats, pumps, skimmers, air monitoring instrumentation, generators, lighting equipment, pressure washers, suction and discharge hose, all types of heavy equipment, and many other items too numerous to mention within this document. Please contact the U.S. EPA FOSC for specific requests or additional resources.

2. U.S. Coast Guard

Section 300.415 of the NCP also applies to response/removal actions pursued by USCG. In response to a removal action trigger, USCG will initially respond with personnel from MSD Grand Haven. Individuals and teams will next respond from MSO Chicago. As additional resources are warranted, they will be activated as described below.

USCG District 9 can be activated at.....216-902-6117 (24-hour)

a. National Strike Force Coordination Center

The USCG National Strike Force Coordination Center (NSFCC), located in Elizabeth City, North Carolina, coordinates the three USCG Strike Teams (Atlantic, Gulf, and Pacific). The three Strike Teams provide trained personnel and specialized equipment to assist the FOSC in training for spill response, stabilizing and containing the spill, and in monitoring or directing the response actions of the responsible parties and/or contractors. The FOSC has a specific team designated for initial contact and may contact the team directly for assistance. The NSFCC can provide the following support to the USCG or U.S. EPA FOSC:

- Technical assistance, equipment, and other resources to augment the FOSC staff during spill response.
- Assistance in coordinating the use of public and private resources in support of the FOSC during a response to or threat of a worst case discharge of oil or hazardous substance.
- Assistance in locating spill response resources for both response and planning.
- Coordination and evaluation of pollution response exercises

The USCG NSFCC may be activated by the FOSC at 252-331-6000 (24-hour)

The USCG AST may be activated by the FOSC at.....609-724-0008 (24-hour)

b. District Response Group

The USCG District Response Group (DRG) is a framework within USCG District 9 to organize district resources and assets to support the USCG FOSC during response to a pollution incident. DRGs assist the USCG FOSC by providing technical assistance, personnel, and equipment, including the USCG pre-positioned equipment. The DRG consists of all USCG personnel and equipment, including fire fighting, in the event that a spill exceeds local response capabilities.

c. Public Information Assist Team

The Public Information Assist Team (PIAT) is an element of the NSFCC staff that is available to assist the FOSC's demand for public information during a response or exercise. Its use is encouraged any time the FOSC requires outside public affairs support. Requests for PIAT assistance may be made through the NSFCC or NRC.

d. Basic Ordering Agreements

USCG has established Basic Ordering Agreements (BOAs) with a number of commercial environmental remediation contractors. The list of current contractors is available at the following web site: http://www.uscg.mil/mlclant/FDiv/fcp.html

3. U.S. Navy Supervisor of Salvage

SUPSALV is available to the FOSC at..... 757-887-7402 (24-hours)

The U.S. Navy (USN) is the federal agency most knowledgeable and experienced in ship salvage, shipboard damage control, and diving. The USN has an extensive array of specialized equipment and personnel available for use in these areas as well as specialized containment, collection, and removal equipment specifically designed for salvage related and open water pollution incidents.

The Supervisor of Salvage (SUPSALV) can provide expertise and maintains a warehouse on each coast stockpiled with salvage and response gear

4. National Oceanic and Atmospheric Administration

The NOAA SSC may be contacted at.....206-526-6317 (24-hour)
216-522-7759 (FAX)
800-759-7243, PIN #5798813 (pager)

The NOAA Scientific Support Coordinator (SSC) is the principal advisor to the USCG FOSC for scientific issues. The SSC leads a scientific team and strives for a consensus on scientific issues affecting the response but ensures that differing opinions within the community are related to the FOSC. The SSC can also assist the FOSC with information relating to spill movements and trajectories. The SSC serves as the FOSC's liaison between damage assessment data collection

efforts and data collected in support of response operations. The SSC leads the synthesis and integration of environmental information required for spill response decisions in support of the FOSC, coordinating with state representatives, appropriate natural resource trustees, and other knowledgeable local representatives.

5. Region 5 Regional Response Team

Additional resources may be available from the other members of the RRT. Federal members of RRT 5 include the following:

- U.S. EPA Region 5 (Co-chair)
- USCG District 9 (Co-chair)
- Federal Emergency Management Agency
- Department of Defense
- Department of Energy
- Department of Agriculture
- National Oceanic and Atmospheric Administration
- Department of Health and Human Services
- Department of the Interior
- Department of Justice
- Department of Labor
- Department of Transportation
- Department of State
- Nuclear Regulatory Commission
- General Services Administration
- Department of Treasury

Potential resources may be requested through the FOSC.

6. Federal Emergency Management Agency

In specific reference to the FEMA role and responsibility under the FRERP, FEMA is responsible for coordinating offsite federal response activities and federal assistance to state and local governments for functions other than radiological monitoring and assessment. FEMA's coordination role is to promote an effective and efficient response by federal agencies at both the national level through the use of its Emergency Support Team and at the scene of the emergency with its Emergency Response Team.

7. Nuclear Regulatory Commission

The NRC regulates the use of byproduct, source, and special nuclear material, including activities at commercial and research nuclear facilities. If an accident involving NRC-regulated activities poses a threat to the public health or safety of environmental quality, the NRC will be the Lead Federal Agency (LFA). In such an incident, the NRC is responsible for monitoring the activities

of the licensee to ensure that appropriate actions are being taken to mitigate the consequences of the incident and to ensure that appropriate protective action recommendations are being made to offsite authorities in a timely manner. In addition, the NRC will support its licensees and offsite authorities, including confirming the licensee's recommendations to offsite authorities.

Consistent with NRC's agreement to participate in Federal Radiological Monitoring and Assessment Center (FRMAC), the NRC may also be called upon to assist in federal radiological monitoring and assessment activities during incidents for which it is not the LFA.

B. State Resources

The MSP, MDEQ, MDNR, and Michigan Department of Agriculture (MDA) can provide services and resources at the time of a spill based upon the specific scenario. Other agencies within the State of Michigan also have response roles. In addition, 51st Michigan Army National Guard Weapons of Mass Destruction (WMD) Civil Support Team can provide assistance either directly to the local EMC in the specific case of a WMD event and at their request, or through activation during a declared disaster by the Governor of the State of Michigan. Please refer to Section VII for State of Michigan-specific response triggers, capabilities, and roles.

C. Local Resources

Local EMCs will provide their resource list at the time of a spill incident to support the efforts of first responders. This listing should also include points of contact for each service or resource presented.

VI. USE OF CHEMICAL AGENTS/IN-SITU BURNING

A. Pre-approved Areas for Use

There are currently no pre-existing approvals for the use of chemical agents or in-situ burning in the Western Michigan Sub-area. Sinking agents are not allowed in the waters of Eastern Lake Michigan nor anywhere on the U.S. Great Lakes, connecting channels, or tributaries.

B. Federal Approval Procedures

1. Chemical Agents

The use of surface collecting agents, biological additives, burning agents, or miscellaneous oil spill control agents must be approved by the appropriate state and/or federal agencies before application. The FOSC must choose the best method from the available response tools in any incident. However, the physical recovery and removal of oil is the preferred clean-up technique.

The FOSC will request approval from RRT 5 to use chemicals on behalf of the spiller. U.S. EPA has compiled a list of dispersants and other chemicals that the FOSC or the spiller may consider for use during a spill emergency called the NCP Product Schedule (Subpart J of the NCP). The existence of the Product Schedule does not authorize or pre-approve use of the listed products and products not listed may not be authorized by the FOSC**. Sinking agents will not be used in U.S. EPA Region 5**.

The NCP Product Schedule can be downloaded from: http://www.epa.gov/oilspill/prodover.htm

The FOSC may authorize the use of any agent without requesting permission if it is immediately necessary to prevent or substantially reduce hazard to human life. In this event, RRT 5 should be notified by the FOSC as soon as practicable. In situations where an immediate human hazard is not present, the FOSC must notify and receive the concurrence of the RRT 5 Co-Chair:

U.S. EPA ..... (312) 353-2318 (24-hour)

USCG ..... (216) 902-6117 (24-hour)

Michigan RRT Representative .....(800) 292-4706 (in-state, 24-hour)
(517) 373-7660 (24-hour)

In consultation with:

DOI RRT Member.....(800) 759-8352/Mailbox #1168849 (24-hour)

Where spills are impacting or may impact anadromous fish (*e.g.*, fish that migrate from salt water to fresh to spawn, such as salmon):

Department of Commerce (DOC) RRT member 206-526-6317 (24-hour)

The FOSC will supply the appropriate members of RRT 5 with information contained in the Chemical Use Checklist located in Appendix 7 of the Region 5 RCP-ACP and Appendix C of this Plan. The Checklist provides information concerning the circumstances of the spill, trajectories, environmental resources at risk, and available decision-makers with the information necessary to make an educated decision on the use of chemical agents. The checklist is also available online at:

http://www.great-lakes.net/partners/epa/acp-rcp/app_VII.html

2. *In-Situ* Burning

Under certain specific conditions, *in-situ* burning may offer a logistically simple, rapid, inexpensive, and relatively safe means for reducing the shoreline impacts of an oil spill. Because a large portion of the oil is converted to gaseous combustion products, the need for collection, storage, transport, and disposal of recovered material can be substantially reduced. In certain circumstances, such as oil spilled in ice conditions, burning may be the only viable response technique. *In-situ* burning may have significant short-term impacts but may actually produce the lowest long-term impact because it removes the oil quickly. *In-situ* burning should augment, not replace, other oil spill response techniques such as mechanical removal or chemical countermeasures.

RRT 5 strongly recommends that *in-situ* oil burning be considered as a means to avert potential oil spill impacts to beaches, wetlands, and Great Lakes and inland resources.

RRT 5 *in-situ* burning policy authorizes its use as a response countermeasure to an oil spill when the FOSC believes it appropriate and after key members of RRT 5 have been consulted and concur. In some circumstances this policy is overridden by state law and in the case of utilizing the addition of burning agents, by the NCP (40 CFR 300.910). The use of *in-situ* burning as a response tool will always be within state waters and inland areas and consequently is subject to state law and policy.

In-situ burning, as a response alternative, will occur only under the direct oversight of an FOSC. The FOSC needs to obtain the following concurrence, as applicable:

- Local Official(s)
- Michigan Representatives
- U.S. EPA Region 5 and USCG District 9 Co-chairs
- DOI
- DOC/NOAA
- Native American Community Official(s), as appropriate

Appendix D of this Plan contains a response and evaluation checklist for the potential use of *in-situ* burning. For greater detailed information on *in-situ* burning policy, refer to Appendix 8 of the Region 5 RCP-ACP. Available online at:

http://www.great-lakes.net/partners/epa/acp-rcp/app_VIII.html

C. Michigan Approval Procedures

Dispersants and surface washing agents will not be used in state waters without state approval. RRT 5 and the State of Michigan must approve the dispersant or surface-washing agents selected.

State approval for the use of *in-situ* burning as a response tool must be made by the State OSC or their representative to the State EOC located in Lansing, Michigan. Approval will be granted on a case-by-case basis factoring in such variables as wind direction, wind velocity, and the potential population exposed downwind.

VII. COMMAND STRUCTURE

A. Command Structure

1. Incident Command Structure

Oil and hazardous material spills require quick and efficient response at all levels. Responders may come from the local, state, or federal level, and the private sector. Spills may involve fire, police, emergency management, environmental, or public health individuals. One way to organize cooperative efforts is through the use of an Incident Command System (ICS) (**Figure VII-1**). This approach is intended to maximize effectiveness of the response personnel and resources. An ICS is designed to:

- Develop mutual objectives, priorities, and strategies and establish links in communication and reporting.

- Increase the Incident Commander's (IC's) management capabilities by efficiently organizing the roles and responsibilities of responders from various agencies.

- Accommodate incidents of varying size and complexity and provide flexibility in adjusting the changing demands as an incident progresses.

The Occupational Safety and Health Administration (OSHA) in 29 CFR 1926.65 (q)(3) mandates the establishment of an ICS under the direction of an IC. Emergency responders and their communications are coordinated through the individual in charge of the ICS.

a. Role of the Incident Commander

Most of the ICS protocols have an individual who is in overall command of the response to an incident. This individual is called the IC. Depending on the incident, the IC may be a fire chief, a sheriff, a state or federal official, or a private sector representative. The IC is responsible for assessing hazards, planning a response, directing that response, assuring safety, and all of the other response functions.

For a very small incident it is possible that one or more people could perform all of the necessary response functions. However, as an incident grows in size or complexity, it becomes necessary for an IC to delegate tasks to other individuals. The five basic response functions in an ICS are:

- **Command** - assigning and coordinating actions, including those regarding safety, public information, and liaison with other organizations

- **Planning** - determining hazards and possible response strategies, tracking the progress of response operations

- **Operations** - carrying out the response
- **Logistics** - arranging for equipment and personnel in response activities
- **Finance** - tracking and paying for response resources

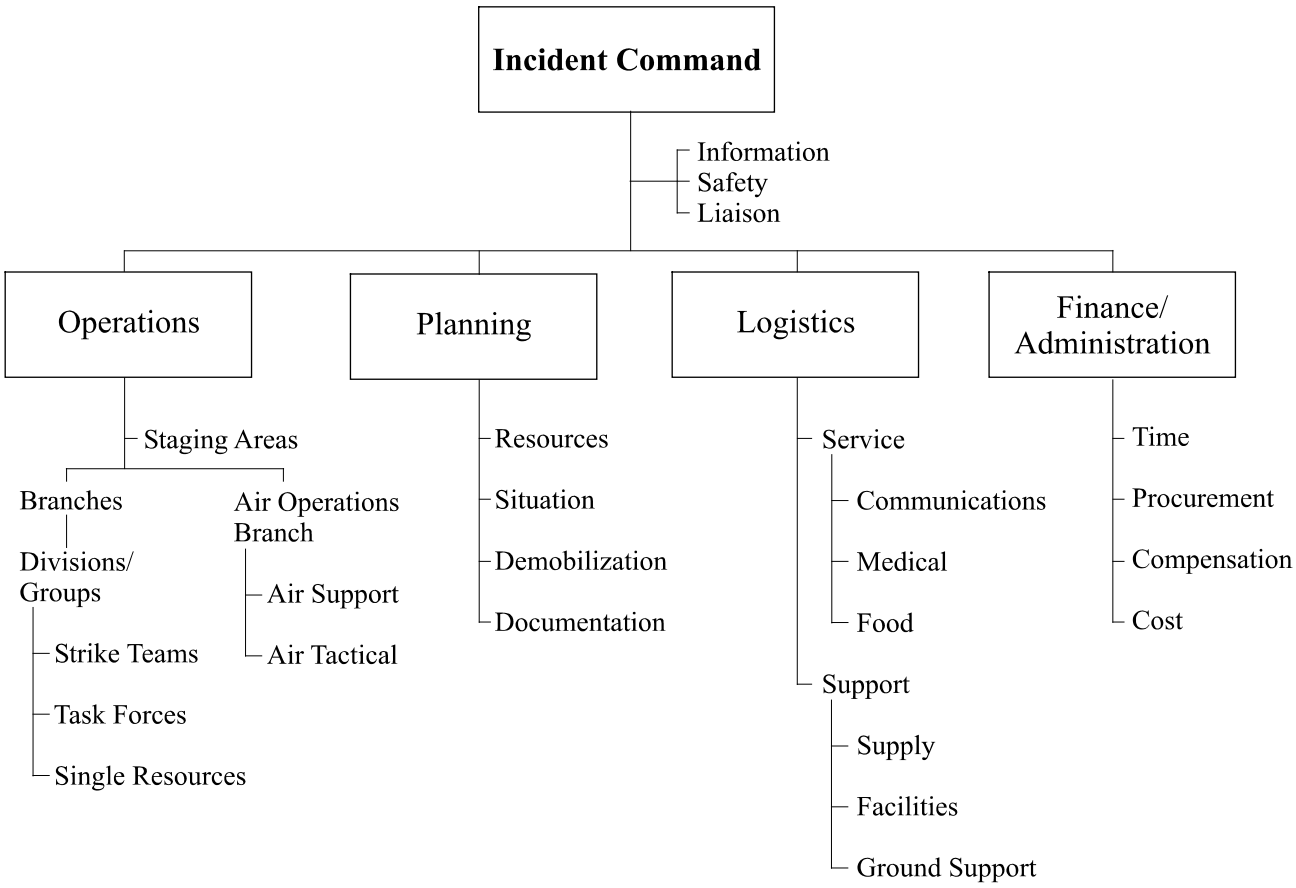


Figure VII-1, Incident Command

b. Evolution of Command in an Oil of Hazardous Material Incident

Incidents typically unfold over distinct but overlapping phases, reflecting a progression in response operations and priorities. Generally, the initial concern during spill response is public safety. During this phase, the local police or fire officials are in charge of the incidents. The role of other responding groups is to support the public safety aspect as requested by the IC. Local public safety responders rarely retain the IC past the initial public safety phase. As a spill's immediate threat to public safety are controlled, greater attention is given to environmental response and long-term cleanup. In an environmental cleanup, the spiller is required to organize and carry out the response. The government, at any level, is authorized to assume control of the response if the responsible party fails to respond adequately. Except in an emergency, both the state and federal government attempt to work with the responsible party to improve private

response efforts before assuming control.

Because oil and hazardous material spills involve many players and change through time, many organizations have legitimate responsibilities and roles in the response action. Rarely is one person or group directly responsible for all aspects of a response to an oil or hazardous material spill.

2. Unified Command System

A large oil or hazardous material spill incident may involve responders from many different organizations, each responding according to their own responsibilities and authorities. In these types of incidents there is seldom one individual who can assume overall command. Because of this, the concept of Unified Command has evolved for incidents that cross jurisdictional lines. Unified Command may be used when a public safety hazard (the primary responsibility of local officials) and an environmental hazard (the primary responsibility of the spiller and the appropriate state and federal responders) coexist.

During an incident, parties may agree to operate by Unified Command if several qualified parties have legitimate command roles. Unified Command is not command by committee, but rather it is a mechanism for coordination, cooperation, and communication, in which each party is allowed to operate in its appropriate sphere of command. Under Unified Command, the individual in the role of the IC is replaced by a group of individuals spearheading their particular areas of expertise (**Figure VII-2**).

Several organizations share the same command responsibilities described for ICS. In addition, the senior responders for each organization meet and:

- Agree to act in concert and/or coordinate activities
- Agree on objectives, priorities, and strategies
- Recognize each other's role and responsibilities
- Establish communication lines and methods

Any single organization's command influence increases or decreases as the incident evolves and as its area of responsibility and expertise comes into or out of play. Often the Unified Command group may appoint a single person to carry out the command decisions of the group. The remaining response functions (planning, operations, logistics, and finance) are unified by co-mingling responders of the various organizations. The Unified Command usually remains in place as long as there remains significant public safety hazard. Following this period, Unified Command may devolve.

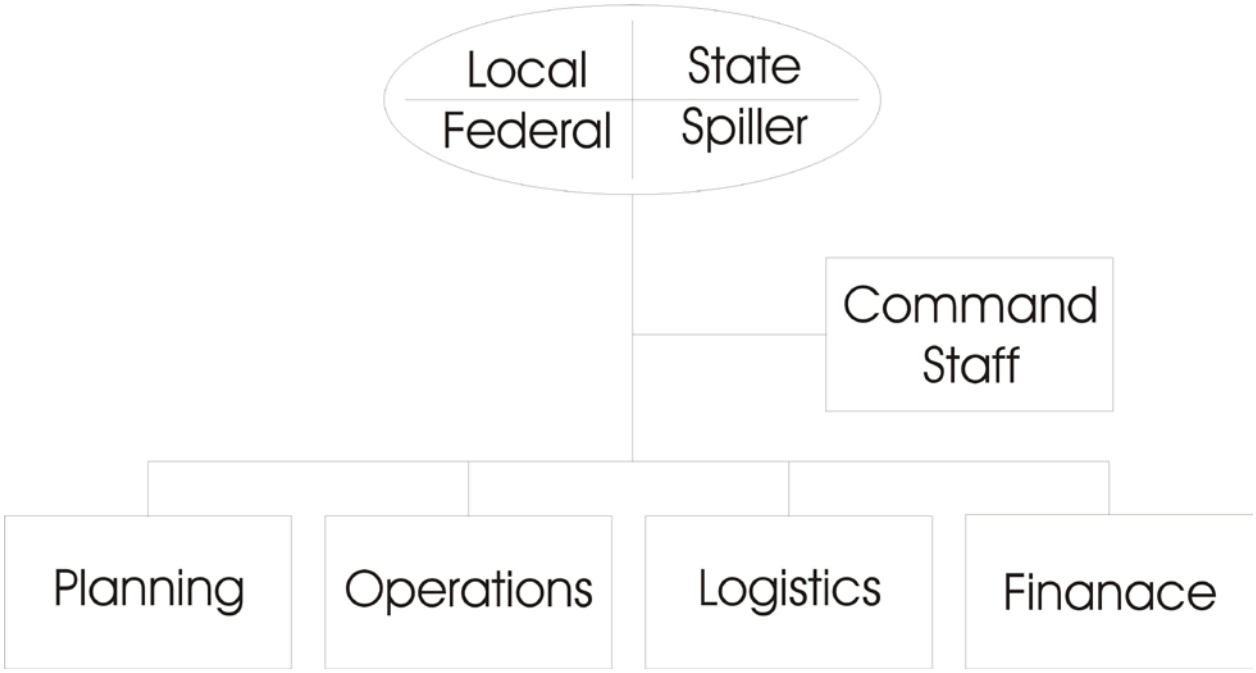


Figure VII-2, Unified Command

B. U.S. EPA/USCG Structure

1. U.S. EPA

U.S. EPA Region 5 supplies the predesignated FOSC for all oil and hazardous materials incidents in the Inland Zone. The U.S. EPA also performs remedial actions for releases originating from facilities and all response actions for releases originating from hazardous waste management facilities, at the federal level.

2. USCG

The USCG District 9 Captain of the Port (COTP), Chicago is the predesignated FOSC for all oil and hazardous materials incidents in the Coastal Zone. The USCG FOSC commands and is supported by personnel assigned to USCG Marine Safety Office (MSO) Chicago and Marine Safety Detachment (MSD) Grand Haven. Operations Department personnel respond to all oil spills in the Coastal Zone as the direct representative of the USCG FOSC.

These personnel will direct response efforts in close consultation with federal, state, and local officials and the responsible party. Operations Department personnel will monitor from the MSO or the local IC Command Post. In the event the incident exceeds responsible party, local, or state response capabilities, the USCG FOSC will call in federal response resources and may assume the role of IC.

C. State and Local Structure

1. State

In accordance with the Michigan Emergency Management Act, the Director of the Department of State Police is the Director of Emergency Management. The Director maintains an EMD within MSP. The commanding officer of the MSP EMD is designated as the Deputy State Director of Emergency Management. The MSP EMD consists of headquarters staff and field personnel (District Coordinators), each in charge of a specific area of the state. Within this framework, the EMD coordinates the comprehensive emergency management activities of mitigation, preparedness, response, and recovery for state and local government.

Each state department or agency appoints an EMC to act as liaison to the MSP EMD and to coordinate the implementation of tasks assigned to the department in the Michigan Emergency Management Plan (MEMP). State department task assignments are primarily oriented toward supporting and supplementing local government efforts to mitigate against, prepare for, respond to, and recover from disasters and emergencies. **Figure VII-3** delineates the flow of responsibility in Michigan emergency management.

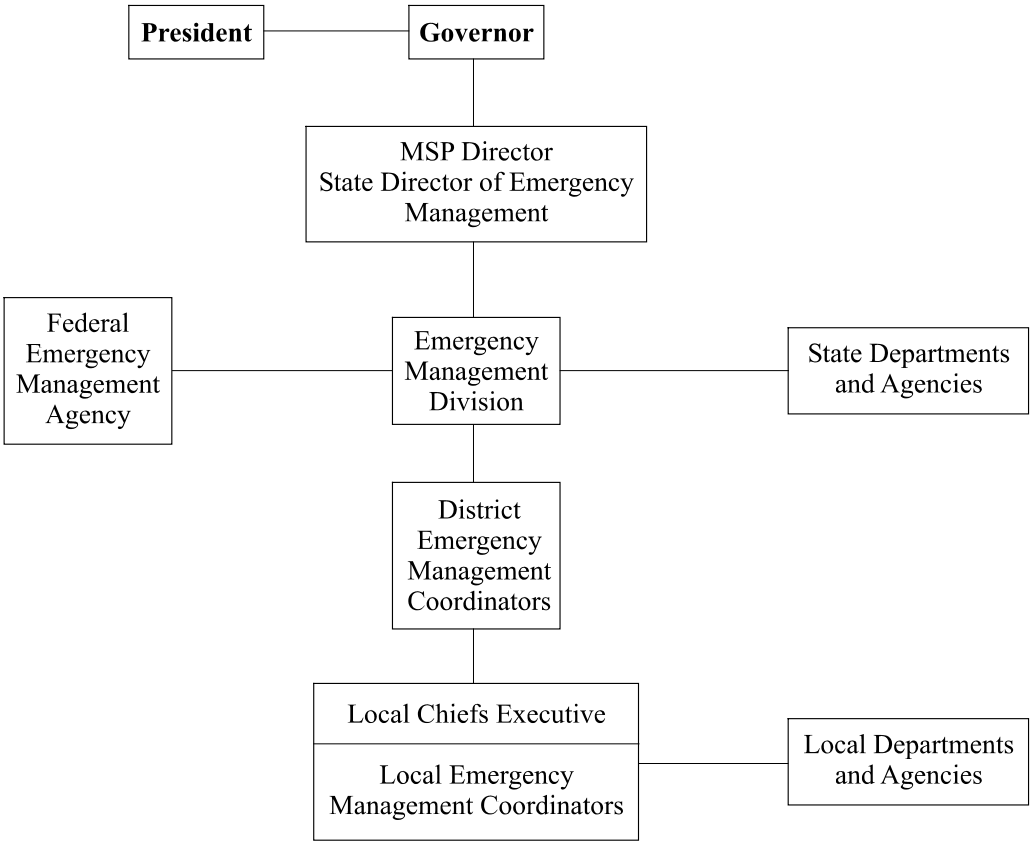


Figure VII-3, Michigan Emergency Management

a. Response Procedures - Technological

When an oil or hazardous material incident occurs on land or an inland waterway, the responsible party of the facility or vessel is required to notify the local, state, and federal government according to applicable statutes and rules. The extent to which the State of Michigan becomes involved depends upon the type or scope of incident. The MDEQ, MDNR, MSP, MDA, Michigan Department of Community Health (MDCH), and Michigan Department of Consumer and Industry Services (MDCIS) may have responsibilities when accidents occur.

The party responsible for the release is responsible for containment and cleanup, under the supervision of MDEQ, in conjunction with MDA if pesticides are involved. If the responsible party is not identified or the identified party fails to take appropriate action in a timely manner, MDEQ may initiate containment and cleanup actions through private contractors. If state funding for containment and cleanup is expended, the State of Michigan will defer responsibility to the federal government. Local government is responsible for initial emergency response and incident command. Local government first responders initially assess and classify the incident according to the Oil or Hazardous Material Incident Emergency Action Level Classification System (**Table VII-1**). The classification level determines appropriate emergency action to be taken. In accordance with the Michigan Fire Prevention Act, the chief of the local fire department can take all necessary steps to protect persons and property if a dangerous condition exists. The Act also requires that the MSP Fire Marshall Division be notified immediately following occurrence of an incident.

MSP personnel, in conjunction with the local fire department, determine the emergency measures to be taken. Other appropriate state agency personnel are notified to report to the scene to assess the incident and respond as necessary. The incident classification determines the role and coordination responsibilities of the MSP personnel under the incident command. State response to incidents classified at the "site area emergency" level is coordinated by the Fire Marshall or Motor Carrier Divisions. Incidents that result in a substantial release causing a community emergency are coordinated by the MSP EMD.

CLASSIFICATION	INITIATING CONDITION
Minor Incident	***Transportation:*** 1. An oil or hazardous material transport vehicle has been involved in an accident/incident; however, no discharge/release of oil or hazardous material has occurred. 2. Structural integrity of shipping containers has not been jeopardized. 3. Product transfer is not necessary before transport vehicle can be moved. 4. Traffic does not require to be rerouted.
	Fixed Site: 1. An incident involving oil or hazardous material has occurred. No discharge/release or the potential for release exists. 2. No outside assistance is required.

Warning/Alert	***Transportation:*** 1. An oil or hazardous material transport vehicle has been involved in an incident. Potential for a discharge/release exists. 2. Structural integrity of shipping containers has been jeopardized. 3. Product transfer is necessary before transport vehicle can be moved. 4. Traffic is, or must be rerouted. 5. Potential exists for protective actions (evacuation/in-place shelter) in the immediate area.
	Fixed Site: 1. An incident involving an oil or hazardous material has occurred. The potential for a discharge/release at the site exists. 2. Outside assistance may be required. 3. Potential exists for protective actions (evacuation/in-place sheltering) of facility personnel.
Site Area Emergency (Federal equivalent: oil: minor discharge, hazardous material: minor or medium release)	***Transportation:*** 1. An oil or hazardous material vehicle has been involved in an accident/incident. A discharge/release of oil or hazardous material has occurred. 2. Evacuation/in-place sheltering of the immediate area surrounding the scene is necessary.
	Fixed Site: 1. An incident involving a discharge/release of oil or hazardous material has occurred and evacuation/n-place sheltering of facility personnel is necessary. 2. Although the incident appears to be contained within the facility, potential exists for an offsite release. 3. Outside assistance may be necessary.
Community Emergency (Federal equivalent: oil: medium or large discharge, hazardous material: medium or major release)	***Transportation:*** 1. An oil or hazardous material transport vehicle has been involved in an accident/incident. A substantial discharge/release of oil or hazardous material has occurred which may affect a large population and/or geographic area. 2. Evacuation/in-place sheltering of the vulnerable zone around the scene of the incident is necessary.
	Fixed Site: 1. An incident involving a substantial discharge/release of oil and/or hazardous material has occurred with significant potential impact on a large population and/or geographic area. 2. Evacuation/in-place sheltering of the immediate area surrounding the facility is necessary.

Recovery/Re-entry	The incident has occurred and immediate life, safety, and/or environmental protection measures have been taken. Conditions that initiated protective actions have been mitigated. Long-term measures must now be taken to return the environment and/or situation to pre-incident conditions.

Table VII - 1, State of Michigan Oil or Other Hazardous Material Incident Emergency Action Level Classification System

b. Response Procedures - Major Disaster

When an emergency or disaster occurs, local agencies are normally the first to respond. These agencies initially assess the situation, determine its scope and magnitude, and determine if additional assistance is required. Generally, response is handled at the local level to the extent possible. The local Emergency Management Coordinator (EMC) monitors the situation and notifies the MSP EMD District Coordinator. Together they assess the nature, scope, and magnitude of the situation and determine the need for resources. If the situation escalates to the point where coordination among several agencies is required, the local EMC may decide to activate the local EOC and notify key personnel to report there to manage the incident and coordinate activities. The local EMC may recommend that the Chief Executive (of the county or municipality) declare a local state of emergency, thereby formally activating the appropriate response and recovery aspects of the local agencies, as outlined in the local Emergency Operations Plan.

If the emergency is deemed by the Chief Executive to be beyond the control of the local jurisdiction, the Chief Executive may request that the Governor declare a state of emergency, thereby activating state assistance in accordance with the provisions set forth in the Michigan Emergency Management Act. This request is made through the MSP EMD District Coordinator and forwarded to the MSP EMD office in Lansing, which notifies the Governor of the nature, scope, and magnitude of the situation.

Before state assistance is authorized, the jurisdiction must have utilized all of its appropriate forces, including the use of local contractors, activation of mutual aid, and use of regional or other nearby resources. The MSP EMD District Coordinator verifies that local resources have been exhausted. State assistance is only used to supplement local efforts and resources to help relieve extraordinary burden caused by threats to public health, safety, and property. It is not used for simple budgetary relief or to relieve hardship.

If immediate actions are required, MSP EMD may initiate temporary assistance to the affected area. The EMD monitors the situation and maintains contact with the jurisdiction. Appropriate state agencies may be notified and mobilized as necessary. The MSP EMD District Coordinator helps coordinate response and recovery activities at the scene through the local EOC.

c. State of Michigan Agency Response Roles

Michigan Department of Environmental Quality: MDEQ is the primary environmental emergency response agency in the state for all non-agricultural-related spills. The primary response role for MDEQ is of technical advisor. These personnel are responsible for complaint investigation and emergency spill response and oversee the environmental aspects of spill containment, control, and mitigation.

Michigan State Police: The MSP EMD serves as the designated emergency/disaster response coordination agency for the state and as the primary state contact point in the event of a declared disaster resulting in the activation of the MEMP.

Michigan Department of Agriculture: The MDA is the lead agency in spill responses involving agricultural chemicals and/or fertilizers.

Michigan Emergency Response Commission: The MERC is the primary coordination agency and liaison with the LEPCs throughout the state. The MERC is co-chaired by MSP EMD and MDEQ.

Michigan Department of Natural Resources: The MDNR is the lead agency for the state in decisions involving fish and wildlife issues during a spill response working cooperatively with the MDEQ OSC.

Michigan Department of Community Health: The MDCH provides support in performing laboratory analyses on the material involved in a release.

Michigan Department of Consumer and Industry Services: The MDCIS monitors employee exposure to airborne contaminants resulting from a hazardous material release.

2. Local

Each county has an EMC and enabling legislation creating an emergency management program. In accordance with the provisions of the Michigan Emergency Management Act, some municipalities with a population of 10,000 or more have also elected to appoint an EMC and meet other criteria established by the MSP EMD to be formally recognized as an emergency management program. Coordination between the EMD and local emergency management programs is accomplished through the EMD District Coordinator. The District Coordinator provides day-to-day administrative and technical support to local emergency management programs, in addition to operational support when incidents occur.

Local agencies are responsible for carrying out the emergency functions assigned to them in their local Emergency Operations Plan (EOP). Most emergency situations can be adequately managed using these local government resources, augmented by volunteer and other private groups, as appropriate. For more detailed information specific to a local jurisdiction, refer to the individual local EOP.

a. Allegan County

The structure of the response and support functions for responding to an oil or hazardous material spill in Allegan County is as follows:

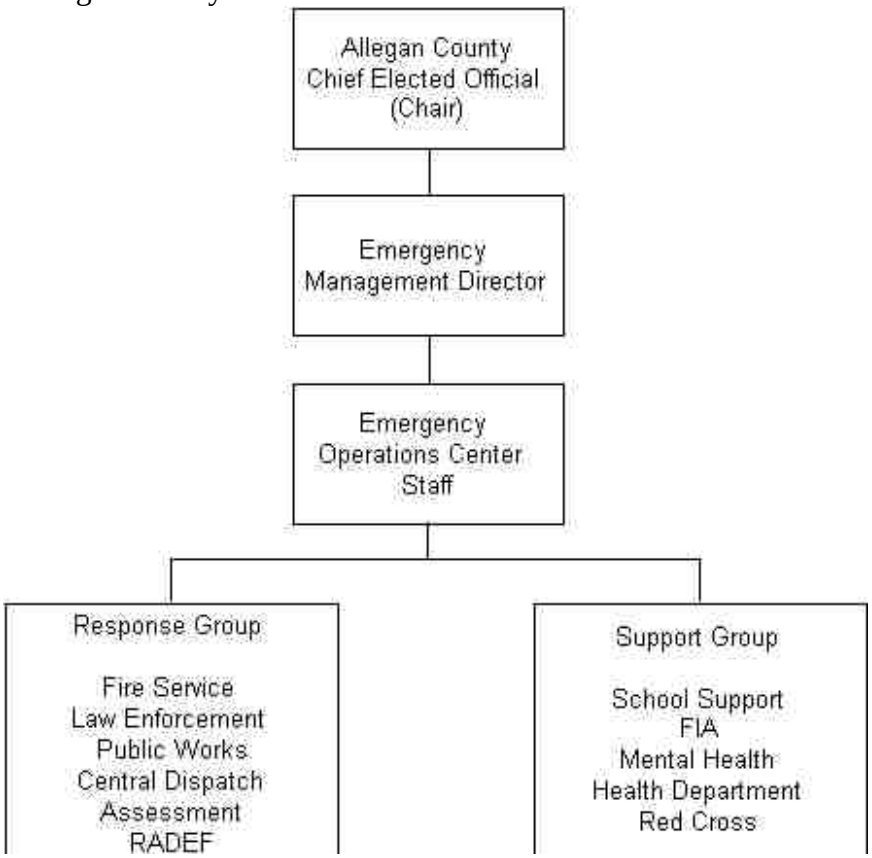


Figure VII-4, Allegan County Emergency Management Organization Chart

In direct response to a notification of an oil or hazardous material spill to the Allegan County Dispatch (269/673-3899) fire, police, and/or EMS will be notified. The Allegan County EMD will also be notified, as appropriate, who will in turn contact the Allegan County "Chief Elected Official" and through mutual agreement will activate the EOC and staff. At this time MSP Operations, MSP 5th District Coordinator, and appropriate external agencies will also be notified.

b. Berrien County

Any request for emergency responders in Berrien County should be made through the Dispatch Center located at the Berrien County Sheriffs Department. The contact number is 269-983-7141. The fax number is 269-983-3240. If the response goes beyond the resources of the local communities, Berrien County Emergency Management will contact the 5th District MSP EMD to evaluate the need for addition resources.

Berrien County has several specialty teams including a Dive Team, Tactical Response Team, Bomb Disposal Team, Hazardous Materials Response Team, Mounted Division, and Police Reserves. The Berrien County Hazardous Material Team and Bomb Disposal Team are part of the Regional Response Team Network, and can respond for "Level A" entry.

c. Mason County

All first responders in Mason County receive their initial communications through the 911/Central Dispatch Center Business phone (231/873-2388). When a problem of this type occurs, the local EMC along with the local appropriate response agencies will monitor the situation and notify the 6th District MSP EMD to determine the need for resources. Most responses for this operation will have to come from outside the county because Mason County has very limited resources for dealing with this type of an emergency.

If it is more than just a minor incident, the procedures that are acquired by Mason County's Emergency Action Guidelines will be followed. This will include declaring a local state of emergency and requesting a State of Emergency from the Governor through MSP.

d. Muskegon County

For any request for assistance from Muskegon County should be made through Muskegon Central Dispatch (231/722-3524 or Fax: 231/755-1238. Muskegon County has emergency services agencies available through the fire, police, and emergency departments.

Muskegon County also has the Muskegon Hazardous Material Handling Team available. They are a member of the Regional Response Team Network. There are 20 members presently, and they are trained and equipped up to and including "Level A" entry.

e. Oceana County

The 24-hour "911 Center" (231/873-2388) notifies the EMC via pager. Oceana County has limited response resources available for oil and hazardous material releases directly into Lake Michigan and connecting waterways. Outside requests for additional resources and expertise would be made to Muskegon County Hazardous Material Handling Team, USCG Group Grand Haven, and private contractors. Oceana County responders would respond as support to these agencies and contractors. Fire departments in Oceana County will respond to hazardous material incidents and perform defensive measures and establish an ICS. The responding fire department(s) will notify the required agencies and perform in a defensive operation with awareness level of training and fire fighting personal protective equipment. Mutual aid agreements have been executed with all responding agencies in the county and ICS/Unified Command has been adopted.

f. Ottawa County

Requests for any Public Safety assistance from Ottawa County resources should be made through Ottawa County Central Dispatch at (800) 249-0911.

Ottawa County has a total of 9 Police Agencies and 21 Fire Departments for Public Safety response. Ottawa County Central Dispatch has voice and data communication capabilities with each agency with detailed SOPs that address a comprehensive response. Resources and capabilities of each agency are included in the procedures at Central Dispatch.

Ottawa County Emergency Management becomes involved in non-routine or major events, bringing the entire resources of the County into action, following the Emergency Operations Plan and Emergency Action Guideline established. The Local Plan addresses an All Hazard approach to Emergency Management, following Act 390.

The 21 Fire Departments of Ottawa County are establishing a Multi-Jurisdiction, well-equipped, 23-member Hazardous Material Response Team that will be trained and operational by January 2003.

g. Van Buren County

In the event of an oil or other hazardous material incident the local fire department designates an Incident Commander, usually the highest-ranking fire official at the scene. This person directs activities relating to the immediate incident response through a Command Post. In accordance with The Fire Prevention Act (Act 207, P.A. 1941, as amended) the MSP, in conjunction with the local fire department, assesses the situation and they jointly determine the emergency measures to be taken. In Van Buren County each fire department follows it's own policy and procedures. (According to OSHA rules, 29 CFR 1910.120, an ICS must be used in responding to all hazardous material incidents.)

The EMC serves as a resource to the Incident Commander as described in the EOP. If the incident becomes a "community emergency" involving many agencies and/or the public, the EMC will keep the chief executive and other levels of government informed and may activate the EOC, depending on the severity of the situation.

MSP may establish a State Command Post to coordinate the state response to an incident, as described in the Michigan Emergency Management Plan. In addition, either the U.S. EPA or the USCG may be responsible as FOSC to coordinate the federal technical response to an incident, as described in the RRT 5 RCP-ACP.

The Incident Commander is responsible for establishing the hot, warm, and cold zones. Certain activities take place depending upon the zone. The Command Post and other facilities are located in the cold zone as designated by the Incident Commander.

VIII. DISPOSAL PROCEDURES

A. State

In the State of Michigan, to determine if an environmental media is considered hazardous waste you must consult with the MDEQ. There are different requirements depending on whether the spill occurred on the surface or from an underground storage tank.

For surface pollution response and remediation: .....**(800) 292-4706 (in-state, 24-hour)**
517-373-9837 (out of state, business hours)

For release from an underground storage tank.....**(800) MICHUST (in-state, 24-hour)**
517-373-8168 (out of state, business hours)

For the most current listing of the State of Michigan's approved treatment, storage, and disposal (TSD) facilities reference the Internet site at:

http://www.michigan.gov/deq/0,1607,7-135-3312_4118_4240-8987--,00.html

B. Federal

1. Oil

The used oil management standards (40 CFR Part 279) apply only to used oil, defined as any oil that has been refined from crude oil, used, and as a result has been contaminated by physical and chemical impurities. If used oil is destined for disposal, these regulations reference the RCRA hazardous waste management standards. Mixtures of waste oil (*e.g.*, spilled or unused product oils) and used oil are regulated as used oil. Waste oil and oily wastes are subjects to the hazardous waste management regulations (40 CFR Parts 124, 260-266, 268, and 270). Non-hazardous used oil debris may be disposed of in an industrial or a municipal solid waste landfill. Refer to the State of Michigan policy for additional comment and guidelines. It is federal policy to encourage the recycling of waste and used oils where possible.

For additional general information from U.S. EPA's Office of Solid Waste, call the RCRA Hotline at:.....**(800) 424-7672**

2. Hazardous Materials

In order to ensure proper treatment and disposal of hazardous substances from CERCLA emergency response or removal sites, Section 300.65 of the NCP requires that off-site transport of hazardous substances use only facilities operating under federal or state permits or authorization. Hazardous substances removed from such sites may be transferred only to facilities that are operating in compliance with RCRA, Toxic Substances Control Act (TSCA), and all applicable state requirements. These requirements also preclude the use of disposal units

that have releases of hazardous wastes or hazardous constituents, and of disposal facilities that have not been addressed by corrective action.

U.S. EPA Region 5's Regional Off-Site Contact (ROC) maintains current information on the acceptability status of disposal facilities in the Region. The ROC can verify for the FOSC facility status for receiving wastes under the NCP. The ROC must determine whether the facility is acceptable for hazardous waste disposal or has relevant violations or releases that may preclude its use for off-site transfer of CERCLA wastes. The FOSC is responsible for contacting the ROC prior to wastes being shipped. Specific FOSC roles and responsibilities for implementing the requirements can be found in *Superfund Removal Procedures Special Circumstances* (January 1998).

IX. FISH AND WILDLIFE AND SENSITIVE ENVIRONMENTS

A. Federal Natural Resource Trustee Responsibilities

The U.S. Fish and Wildlife Service (FWS) is the lead agency for DOI in the management of migratory birds, federally-listed threatened and endangered species, and USFWS lands. The USFWS will provide responders with information concerning the presence of trust natural resources, as well as technical assistance concerning the effects of oil on these resources. The USFWS may help coordinate wildlife recovery and rehabilitation efforts in conjunction with the state natural resource trustee.

Other federal agencies may play similar roles to that of USFWS including the Department of Defense, Department of Agriculture, and NOAA.

B. Notification of Natural Resource Trustee

In the event of a spill, the spiller is required to notify the National Response Center (NRC) at **(800) 424-8802**, immediately. The NRC will contact the appropriate federal response agency, which should then notify the DOI's Office of Environmental Policy and Compliance (OEPC) and the state natural resource agencies, as follows:

DOI, USFWS, Region 3 Regional Pollution Response Coordinator Bishop Henry Whipple Federal Bldg. Fort Snelling, MN 55111-4056		612-725-3536 (office hours) 612-725-3536 (24-hours) 612-725-3526 (fax)
DOI, USFWS, Michigan Ecological Services East Lansing Field Office 2651 Coolidge Road East Lansing, MI 48823	Charles M. Wooley (Primary - 24-hours) Lisa L. Williams (Primary B duty hours)	517-351-8470 (phone) 517-351-1443 (fax) 517-351-8324 (phone) 517-351-1443 (fax)
Michigan DNR, Division of Wildlife Mason Building, 5th Floor P. O. Box 30444 Lansing, MI 48909-7944		517-373-1263 (office hours)
Michigan DNR Lower Peninsula Field Headquarters P. O. Box 128 Roscommon, MI 48653		517-275-5151 (office hours)

Only one contact per agency is necessary, the person initially contacted will notify appropriate personnel within their agency.

C. State Natural Resource Trustee Responsibilities

MDNR is the designated state natural resource trustee for wildlife and aquatic life in Michigan. In response to a spill event, MDNR personnel have the following responsibilities:

- Notify other appropriate state natural resource agency personnel and initiate response protocol.

- Coordinate efforts with other participating natural resource trustees (*e.g.*, NOAA, USFWS).

- Provide the OSC with specific fish and wildlife habitat information and consult with responders for establishing staging and recovery areas and access points.

- Provide the OSC with critical habitat information for state listed threatened and endangered species and environmentally sensitive areas.

- Provide the OSC with assistance in coordination of wildlife rescue and rehabilitation.

- Participate in NRDA.

D. Natural Resources Damage Assessment

The goal of the NRDA process is to restore the injured environment, its components, and services to pre-spill conditions as rapidly as possible. Trustees for natural resources (land, fish, wildlife, biota, air, water, ground water, drinking water supplies) within the geographic area covered by this Sub-area Plan are the MDNR, and DOI (USFWS, NPS).

Section 1006 of OPA empowers trustees to determine resource injuries; assess natural resource damages (including reasonable costs of assessing damages); present claims, recover damages; and to develop and implement plans for the restoration, rehabilitation, replacement, or acquisition of the equivalent of the injured natural resources under their trusteeship. The NRDA process is implemented concurrently with spill response efforts, and may continue for years following the spill incident. The NRDA process consists of the following primary phases:

- **Pre-spill Planning Phase**: Trustees, Sub-area Committee members, potential responsible parties, and the public coordinate and initiate planning activities to ensure a cost-effective and coordinated assessment in the event of a discharge.

- **Pre-assessment Phase**: Trustees must formally decide to initiate this phase (Pre-assessment Determination) and must determine whether to proceed with a damage assessment (Damage Assessment Determination). The trustees identify potentially affected resources, and may complete limited data collection and analysis during this phase.

- **Damage Assessment Phase**: Spill-related injuries to natural resources are determined,

damages are quantified, and restoration and planning costs are ascertained. The trustees may use compensation formulas, models, or conduct extensive biological sampling and detailed economic evaluations to make these assessments.

- **Post-Assessment Phase**: A demand for total damages claimed by the trustees resulting from the discharge that is presented to the responsible party. The demand identifies the discharge, the applicable trustees, the amount of damages, and a Report of Assessment describing the trustee restoration approach and its cost.

E. Endangered Species Act

The Endangered Species Act (ESA) requires that federal agencies ensure that actions they authorize, fund, or carry out are not likely to jeopardize listed species or destroy or adversely impact their designated critical habitat. Response to an oil or hazardous material spill is an emergency, but this does not relieve the responding federal agencies of their responsibilities under the ESA. During emergencies, this responsibility can be fulfilled by the responding agency relatively quickly through informal consultation, with formal consultation being completed if needed after the emergency response is complete and the case is closed. The NCP provides that Area Committees and the FOSC consult with USFWS during the planning and response process. A Memorandum of Agreement (MOA) was developed by a workgroup comprised of USCG, U.S. EPA, USFWS, the National Marine Fisheries Service (NMFS), and NOAA. The MOA provides guidance for implementing the consultation provisions in the interagency regulations implementing Section 7 of the ESA (50 CFR 402.05).

The MOA provides a general framework and guidance for cooperation and participation among the ESA consultation agencies (USFWS and NMFS) and other agencies (USCG and U.S. EPA) in spill planning and response. The agreement integrates the provisions for consultation under the ESA with the requirements of the NCP that describes the relationship between the FOSC and the natural resource trustees and calls for coordination with USFWS and NOAA of sensitive environment plans that are incorporated into ACPs.

For the full text of the ESA MOA please reference the URL:

http://www.nrt.org/epa/nrt/home.nsf/all+pages/esa_moa.htm

F. Inland Sensitivity Atlas

The Western Michigan Inland Sensitivity Atlas is a Geographic Information System (GIS) product intended to provide contingency planners and spill responders with the most accurate and relevant information possible for spill preparedness and response. Data were collected about sensitive environmental, economic and cultural resources; potential spill sources; and response resources for the Western Michigan Sub-area. Descriptions of the different information layers are included below.

- The Natural Heritage Data was provided by the State of Michigan and includes state and

federally-listed threatened or endangered species. Categories within this layer include vascular plants, birds, amphibians and reptiles, mammals, invertebrates, fish, and natural communities in two habitat subcategories: aquatic/riparian or terrestrial/upland.

- Many private, local, state, and federal managed lands are high-priority sensitive natural resources that offer habitats for a wide range of plant and animal species, and may also support high levels of human use. Examples of managed areas may include parks, forests, trout streams, wildlife management areas, natural areas, recreational lands forest preserves, and others.

- Other areas that do not have a specific designation or are not directly managed or owned by a trustee group have also been identified. These areas may include private lands with sensitive resources that merit protection.

- Tribes are the designated natural resource trustees for Native American communities. Reservations and other tribally owned areas may have significant cultural, environmental, and economic resources that are vulnerable to oil spill damage.

- Environmental Sensitivity Index (ESI) data sets were obtained from NOAA to display shoreline sensitivity. The ESI shoreline data were mapped and ranked based on their potential sensitivity to an oil spill. The elements used to determine the relative sensitivity of shoreline habitats include shoreline type (e.g., substrate, grain size, elevation, and origin), exposure to wave and current energy, biological productivity and sensitivity, and ease of cleanup.

- Historic sites, including standing structures and buried archeological sites, are vulnerable to the effects of spilled oil and clean-up efforts.

- Surface water intakes are sensitive because of their significance to public health and the economy. Response procedures may involve the temporary shutdown of these facilities. All intakes for public water supplies and power/industrial use have been mapped. Intakes used intermittently have not been mapped.

- Marinas are typically high-use recreational areas and may include camping and fueling facilities as well as boatlifts, ramps, and slips. Due to the high economic value of the boats and other equipment located at marinas and their potential for staging area use during response marinas may be considered relatively high priority.

- Dams and navigational locks on commercial navigable waterways are vulnerable economic resources that could be adversely affected by an upstream oil spill. These facilities are also essential to the flow of commercial shipping and recreational boat traffic. In addition, due to the dynamics that even the smallest dams place on the current, their consideration to impact an oil spill response should always be considered.

- Fixed oil storage facilities store quantities of oil above and/or below ground. The term oil

includes crude and refined products as well as vegetable oils and animal fats. The atlas documents those facilities with a storage capacity of 42,000 gallons (1,000 barrels) or more.

- Due to the potential volume of oil pumped through the major pipelines, the potential impact of a rupture is significant. Crude and refined product pipelines have been mapped, whereas natural gas transmission lines have not.

Additional information and the data and maps for the Western Michigan Sub-area can be downloaded from the Internet at the secure site:

http://www.umesc.usgs.gov/epa_iwmp.html

X. EXERCISES

The National Preparedness for Response Exercise Program (PREP) was developed to establish a workable exercise program that meets the intent of OPA. The PREP incorporates the exercise requirements of USCG, U.S. EPA, the DOT's Office of Pipeline Safety's Research and Special Program Administration (RSPA), and the Mineral Management Service (MMS).

The PREP guidelines are not regulations. However, the four federal agencies have agreed that participation in PREP will satisfy all exercise requirements imposed by OPA. Although participation in PREP is voluntary, those choosing not to participate in PREP are required to comply with the exercise requirements in the regulations imposed by each of the four regulatory agencies.

The PREP is structured around a system of internal and external exercises. The internal exercises are conducted wholly within a plan holder's organization, testing the various components of a response plan to ensure the plan is adequate for the organization to respond to an oil or hazardous material spill.

A. Internal Exercises

Internal exercises include: Qualified Individual Notification Drills; Emergency Procedures Drills for Vessels and Barges; Spill Management Team Tabletop; and Unannounced Exercises.

The internal exercises will be self-certified and self-evaluated by the plan holder organization. Each plan holder will be on a triennial cycle for exercises, which began on January 1, 1994. Within this triennial cycle, each plan holder must exercise the various components of the entire response plan. The PREP document contains a list of 15 core components. These are not all-inclusive, a plan may have more or less components, but these are generally what should be in the plan. The completion of the required internal exercises over the three year period will satisfy the regulatory requirements for exercising the entire plan once every three years.

B. External Exercises

The external exercises, or Area Exercises, test the interaction of the plan holder with the entire response community in a specific Area or Sub-area. For the purpose of the PREP, an Area is defined as that specific geographic area for which a separate and distinct ACP has been developed. The Area Exercises will exercise the governmental-industry interface for pollution response. The PREP goal is to conduct 20 Area Exercises per year throughout the country, with the federal government leading six exercises and industry leading the 14 other exercises. The Area Exercises will be realistic exercises, including equipment deployment. A design team consisting of federal, state, and local government and industry representatives will develop the exercises. The Area Exercises are scheduled through the USCG National Strike Force Coordination Center (NSFCC), which will receive input from the Area Committee. These various levels of input are designed to ensure all federal, state, local, and private concerns are

taken into consideration when scheduling the exercises.

Additional information on the PREP program is available on the Internet at:

http://www.uscg.mil/hq/g-m/nmc/response/index.htm - PREP

Appendix A

MICHIGAN HAZMAT INCIDENT NOTIFICATION MESSAGE FORM

Place an "X" in the appropriate box(es) and enter available information.

Date: _____, Reporting Time: _____

Reported by: _____, Telephone: _____

Time of Incident: _____ AM / PM (circle one)

Incident Description: _____

Transportation: _____, Fixed Site: _____

Facility/Carrier Involved: _____

Facility/Carrier Contact: _____, Telephone: _____

Address of Incident: _____

City or Township: _____, County Name: _____

Spill: _____, Leak: _____, Fire: _____, Explosion: _____, Other: _____

Released Into: Air: _____, Water: _____, Ground: _____

Class: Minor: _____, Alert: _____, Site Area Emergency _____, Community Emergency: _____

Incident Status: Escalating: _____, Stable: _____, De-escalating: _____, Terminated: _____

Protective Action Recommended: In-place Shelter: _____, Evacuation: _____, None: _____

Protective Action Status: In-place Shelter: _____, Evacuation: _____, None: _____

Number of Injuries: _____, Number of Deaths: _____

Material Name: _____

Liquid: _____, Gas: _____, Solid: _____

Extremely Hazardous Substance (EHS): Yes: _____, No: _____

Amount of Material Released: _____

Duration of Release: _____

Total Amount which could be Released: _____

Other Chemicals or Incompatibles Involved: _____

Health Risks and Precautions: _____

Emergency Medical Treatment Recommended: _____

Wind Direction (From): _____ (*i.e.*, N, NNW), Wind Speed: _____ (MPH)

Air Temperature (^{o}F): _____, Clear: _____, Partly Cloudy: _____, Overcast: _____

Rural: _____, Residential: _____, Commercial: _____, Industrial: _____, Open Water:_____

Release Impact/Number of Persons Affected: _____

Special Populations: Schools: ____, Rest Homes: _____, Hospitals: _____, Jails/Prisons: _____

Shopping Centers: _____, Other: _____

Response Status (List Jurisdictions Involved: PD, FD, Hazmat Team, Etc.): _____

Investigating Agency: _____, Telephone: _____

Agencies Notified: Local Fire Dept.: _____, Local Police Dept.: _____

Facility/Carrier: _____, Local EMC: _____

Local Health Dept.: _____, MSP FMD/MSD: _____

DNR PEAS Hotline: _____, National Response Center:

Other: _____

Appendix B
FEDERAL ON-SCENE COORDINATOR POLLUTION REPORT

I. HEADING

Date:
Subject:
From:

To[1]:		
	K. Mould, U.S. EPA OSWER	FAX: 703-603-9133
	R. Karl, Chief, U.S. EPA Region 5 ERB	FAX: 312-353-9176
	J. El Zein, Chief, U.S. EPA Response Section II	FAX: 312-353-9176
	B. Messenger, Chief, U.S. EPA ESS	FAX: 312-353-9176
	T. Lesser, U.S. EPA Office of Public Affairs	FAX: 312-353-1155
	M. Chezik, DOI, Philadelphia, PA	FAX: 215-597-9845
	U.S. EPA ORC	FAX: _____
	U.S. EPA Enforcement Specialist	FAX: _____
	Michigan DEQ	FAX: _____
	Michigan State Police	FAX: _____
	USCG District 9	FAX: 216-902-6059
	U.S. Fish and Wildlife	FAX: _____
	County Official	FAX: _____

POLREP Number:

II. BACKGROUND

Site Number:
Delivery Order Number:
Response Authority:
ERNS Number:
CERCLIS Number:
NPL Status:
State Notification:
Action Memorandum Status:
Start Date:
Demobilization Date:
Completion Date:

III. SITE INFORMATION

A. Incident Category

B. Site Description

1. Site location
2. Description of threat

C. Preliminary Assessment/Site Inspection Results

[1] Where an incident generates substantial interest in the response community and the lead agency experiences a demand for POLREPS beyond the normal RRT 5 distribution, the lead federal agency may elect to post POLREPS electronically, in lieu of direct transmission to individual offices.

IV. RESPONSE INFORMATION

A. Situation

1. Current situation
2. Removal activities to date
3. Enforcement

D. Planned Removal Activities

E. Next Steps

F. Key Issues

VII. COST INFORMATION

The expenditures are an estimate based on figures known to the FOSC at the time the report is written. The cost accounting will not necessarily represent an exact monetary figure that the government may include in any claim for cost recovery.

VIII. DISPOSITION OF WASTES

Wastestream	Medium	Quantity	Containment/ Mitigation Control	Treatment	Disposal

Appendix C
CHEMICAL USE CHECKLIST

Activity	Responsibility
A. Compile Data	
1. Spill Data **Circumstances** time/date of incident location type of oil product volume of product released total potential of release type of release (instantaneous, continuous, etc.)	**FOSC**
2. Characteristics of Spilled Oils specific gravity viscosity	**FOSC**
3. Weather and Water Conditions/Forecasts air temperature, wind speed, direction water conditions, temperature, depth	**SSC**
4. Oil Trajectory Information 48-hour surface oil trajectory forecast surface area of slick expected conditions of landfall 48-hour dispersed or chemically treated oil trajectory forecast oil movement in water column surface oil movement and expected landfall concentration of the dispersant/oil mixture in the water column	**SSC**
5. Chemical Characteristics and Application Equipment **Chemical Characteristics (Product 1, Product 2, Product 3)** chemical name trade name manufacturer when available location characteristics toxicity effectiveness Reactions applicability flash point amount available type of containers application method benefits to problem (*e.g.*, reduce vapor, increase viscosity	**U.S. EPA, USCG, SSC, State**

Transportation and Equipment (Company 1, Company 2, Company 3) name location equipment available transportation of equipment	**U.S. EPA, USCG, SSC, State**
6. Comparison of the Effectiveness of Conventional Cleanup Methods vs. Chemicals containment at the source burning shoreline protection strategies shoreline cleanup strategies time necessary to execute response	**U.S. EPA, USCG, SSC, State**
7. Habitats and Resources at Risk shoreline habitat type and area of impact resources endangered/threatened species critical habitat for the above species waterfowl use shellfish finfish commercial use public use areas other resources of significance	**FOSC, SSC**
8. Other Uses of the Water: Nearby and Downstream water supply (potable/industrial)	**FOSC**
B. Recommendations	
1. Possible Options do not use chemicals use chemicals on a trial basis disperse or chemically treat in limited/defined areas disperse or chemically treat to maximum extent possible	**U.S. EPA, USCG, SSC, State**
2. Other Recommendations/Rationale	
C. Evaluation of Decision	
1. Will application remove a significant amount of the slick from the surface water?	**U.S. EPA, USCG, SSC, State**
2. Can the extent or location of shoreline impacts be altered in a positive manner?	
3. Will damage to endangered/threatened species, mammals, waterfowl be lessened?	
4. Will the damage to habitats and resources resulting from the chemical use be less than those resulting without the use?	
5. If recreational, economic, and aesthetic considerations are a higher priority than natural resource considerations, what is the most effective means of their protection?	

D. Monitoring of Chemical Use	
1. Records chemical brand equipment and methods used in application dilution of chemical prior to application, if any rate of application times and area of application wind and wave conditions during application	**FOSC, State**
2. Effectiveness: Visual and Photographic Documentation oil before and after chemical application resurfacing of dispersed or chemically treated oil sampling of the water beneath the oil slick and the oil/chemical combination to determine the level of petroleum hydrocarbons in the water	
3. Environmental Impacts: Visual and Photographic Surveys the extent of shoreline impact by chemically treated and untreated oil mortality or abnormal behavior of fish, birds, or mammals comparison of shoreline areas impacted by oil and oil/chemical mixtures analysis of oil concentrations in sediments under chemically treated oil investigation of water column organisms for signs of adverse impact due to chemically treated oil collections and analysis of birds affected by chemicals or oil/chemical mixture	
4. Public Health sampling water supplies for petroleum and chemical constituents	

Appendix D
IN-SITU BURNING EVALUATION AND RESPONSE CHECKLIST

Agencies Required to Grant Concurrence to Conduct a Burn

A. U.S. EPA/USCG RRT Co-Chair — Yes _____, No_____
Name: _____,Telephone:_____

B. MDEQ RRT Representative — Yes _____, No_____
Name: _____, Telephone:_____

C. U.S. Dept. of Interior — Yes _____, No_____
Name: _____, Telephone:_____

D. Other Applicable Agencies, as appropriate — Yes _____, No_____
Name: _____, Telephone:_____
Name: _____, Telephone:_____
Name: _____, Telephone:_____

Nature, Size, and Type of Product Spilled

Name of Incident: _____

Date of Incident: _____, Time of Incident: _____

Type: Grounding: ____, Transfer Operations: ____, Explosion: ____, Collision: ____, Other: ____

Did Source Burn? Yes _____, No _____; Is Source Still Burning? Yes _____, No _____, N/A _____

Spill Location: Lat./Long.: _____, Descriptive Location: _____

Distance and direction to nearest land: _____, Nearest Population: _____

Product Released: Heavy Crude: _____, Bunker C: _____, #6 Fuel: _____, Medium Crude: _____, Diesel #2: _____, Jet Fuel: _____, Gasoline: _____, Other: _____

Product Easily Emulsified? Yes _____, No _____

Product Emulsified? Light (0-20%): _____, Moderate (21-50%): _____, Heavy (>51%): _____, No: _____

Estimated Volume of Released Product: gals: _____, bbls: _____, tons: _____

Estimated Volume of Potential Release: gals: _____, bbls: _____, tons: _____

Release Status: Continuous: _____, Intermittent: _____, Instantaneous: _____

Estimated Release Rate if Continuous/Intermittent: _____ gal/bbl/ton

Estimated Water Surface Covered (square miles): _____

If onshore, what is the wetland surface area covered (square miles): _____

Weather: Current and Forecast

Weather: Clear _____, Partly Cloudy _____, Overcast _____, Rain _____, Snow _____, Fog _____

24-hour projection: _____, 48-hour projection: _____

Wind Speed: _____ knots, Direction (from): _____

24-hour projection: _____, 48-hour projection: _____

Stability Class: A _____, B _____, C _____, D _____, E _____

Dominant Current, if known: Speed _____ knots, Direction (from) _____

Wind Wave Conditions: Calm _____, Choppy _____, Waves: <1' _____, 1-3' _____, >3' _____

24-hour projection: _____, 48-hour projection: _____

Ice Present? Yes ____, No ____ Percent Coverage: <10% ____, 11-30% ____, 31-50% ____, >51% ___

Trajectories of Spill: Open Water Burning

Estimated trajectory (attach map/chart)

Expected area(s) and time(s) of landfall (attach map/chart)

Estimated percent naturally dispersed and evaporated within first 24 hours: _____

Evaluation of Response Operations

Size, forecasted weather and trajectories, amount of available equipment, time to deploy and time to recover? Yes _____, No _____

Has dispersant use been considered? Yes _____, No _____

Why is in-situ burning considered necessary:_____

_____

_____

Will in-situ burning augment mechanical recovery and/or chemical countermeasures? Yes ____, No ____

Will in-situ burning replace mechanical recovery and or chemical countermeasures? Yes _____, No ____

If "yes" please explain:

_____

_____

_____

Weather, Sea, and Oil Conditions

Wind: <20 knots? Yes _____, No _____

Waves: <3' in choppy wind driven seas? Yes _____, No _____

Currents: <0.75 knots relative velocity boom/water? Yes _____, No _____

Visibility: Sufficient to see oil, vessels towing boom, and aerial overflight for burn observation?
Yes _____, No _____

Oil Conditions:
1. Fresh oil, <2-3 days exposure? Yes _____, No _____
2. >2-3 mm thickness? Yes _____, No _____
3. <25% water content for optimal ignition? Yes _____, No _____

Habitats Impacted and Resources at Risk

State Natural Resource Agency notified and consulted? Yes _____, No _____
Name: _____, Telephone: _____

U.S. Fish and Wildlife Service notified and consulted? Yes _____, No _____
Name: _____, Telephone: _____

Park/Resource Manager notified and consulted? Yes _____, No _____

Name: _____, Telephone: _____

Wetland type(s) impacted:
1. Wooded swamp _____
2. Freshwater impoundment marsh _____
3. Great Lakes coastal marsh _____
4. Other riparian marsh _____
5. Inland marsh _____
6. Other marsh _____

Other Habitats Impacted:
1. Small pond _____
2. Small river or stream _____
3. Low-lying bank _____
4. Other types _____

Predominant Vegetation Type: _____

Season: Winter _____, Spring _____, Summer _____, Fall _____

Biological Resources Present:
1. Threatened/endangered species (attach list) ____
2. Mammals _____
3. Waterfowl _____
4. Wading birds _____
5. Diving birds _____
6. Shore birds _____
7. Raptors _____
8. Fish _____

Parks/Natural Areas (list):
1. National Park _____
2. National Wildlife Refuge _____
3. State Park _____
4. State Wildlife Area _____
5. Other Natural/Recreational Areas _____

Native American interests present? Yes _____, No _____

Name: _____, Telephone: _____

Historic and Archeological Resources: _____ Unknown
_____ Not Present
_____ Present (contact SHPO)

Name: _____, Telephone: _____

Equipment and Personnel: Open Water Burning

Vessels, fire boom, residue containment equipment available? Yes _____, No _____
Vessels equipped with appropriate fire fighting gear? Yes _____, No _____
Aircraft(s) for ignition and aerial observation available? Yes _____, No _____
Flight requirements: daylight hours, visibility >1 mile, ceiling > 500', FAA certified for helitorch.

Ignition System:
1. Available? Yes _____, No _____
2. Type/method to be used: _____
3. Burn Promoters? Yes _____, No _____

Personnel properly trained, equipped, and covered by site safety plan? Yes _____, No _____

Communications system available for aircraft, vessels, EOC and working? Yes _____, No _____

Equipment and Personnel: Inland Burning

Vessels, fire boom, residue containment required and available? Yes _____, No _____

Are appropriate fire fighting gear and personnel on-scene? Yes _____, No _____

Is aircraft(s) for ignition and aerial observation required and available? Yes _____, No _____
Flight requirements: daylight hours, visibility >1 mile, ceiling > 500', FAA certified for helitorch.

Ignition System:
1. Available? Yes _____, No _____
2. Type/method to be used: _____
3. Burn Promoters? Yes _____, No _____

E. Personnel properly trained, equipped, and covered by site safety plan? Yes _____, No _____

F. Communications system available for aircraft, vessels, EOC and working? Yes _____, No _____

Proposed Burn Plan

A. Proposed burning strategy:
   1. _____ Ignition away from source after containment and movement to safe location
   2. _____ Immediate ignition at or near source
   3. _____ Ignition of uncontained slick(s) at a safe distance

B. Estimated amount of oil to be burned in boom: _____ sq. ft.

C. Estimated duration of burn: _____ minutes

B. Are simultaneous burns planned? Yes _____, No _____; If "yes" how many? _____

C. Are sequential or repeat burns planned? Yes _____, No _____

Evaluation of Anticipated Emissions

A. Using a section of an appropriate chart, plot and calculate the following locations and distances:

   1. Location of proposed burn in reference to source.
   2. Location of proposed burn in reference to nearest ignitable oil slick(s)
   3. Location of proposed burn in reference to nearest land
   4. Location of nearby human habitation

   Determine the following:

   1. Distance between burn and land: _____ miles
   2. Distance between proposed burn and spill source: _____ miles
   3. Distance between burn and human habitation: _____ miles
   4. Surface area of proposed burn: _____ sq. ft.

E. Risk of secondary fires? Yes _____, No _____

F. Plot the estimate smoke plume with particulate concentration of > 150 _g/m^3

G. Will anticipated smoke plume disperse before reaching human population? Yes _____, No _____

Determination of Acceptability

A. Does the estimated smoke plume impact a populated area with particulate concentrations averaged over one hour exceeding 150 _g/m^3? Yes _____, No _____

B. Can the impacted population be temporarily relocated prior to burning? Yes _____, No _____

Operational Controls: Required for all Burns

A. Forecasted weather, winds, and atmospheric stability class obtained? Yes _____, No _____

B. Trial Burn conducted, observed, and anticipated smoke plume behavior confirmed?
Yes _____, No _____

C. Safe downwind distance validated, or expanded if winds are inconsistent with forecast?
Yes _____, No _____

D. Burn extinguishing measures in place and available? Yes _____, No _____

Public Notification: With Local EMC Guidance

A. Level 1 public notification (*e.g.*, radio broadcast to public, safety zone broadcast to mariners, road closure, etc.) implemented? Yes _____, No _____

B. Provisions to initiate Level 2, 3, or 4 warnings, instruction available? Yes _____, No _____

Unified Command Decision Regarding *In-Situ* Burning

A. _____ Do not conduct *in-situ* burn.

B. _____ *In-situ* burning may be conducted in limited or selected areas (attach map).

C. _____ *In-situ* burning may be conducted as requested.

Signature of FOSC: _____, Printed Name:_____

Signature of State Rep.: _____, Printed Name: _____

Time and Date of Decision: _____

Additional conditions that may apply: _____

_____

_____

_____

_____

Appendix E
WILDLIFE REHABILITATION: MINIMUM FACILITY REQUIREMENTS[1]

Facility needs usually focus on the majority of species affected by a petroleum discharge, which are historically avian. Facility requirements can vary significantly, depending upon the overall size of response, species, and age of the wildlife contaminated, the type of contamination, the season and weather, the location of the spill, and the rehabilitation effort. The facility required will vary accordingly to the needs of the specific spill situation, and should be determined by a qualified wildlife responder experienced in oil spill response work.

Facility:

A suitable facility must have a large open space on the ground floor that can easily be configured and reconfigured to accommodate the changing needs of this unique form of wildlife rehabilitation. All rehabilitation efforts should be accommodated under one roof. Experience has taught that multiple buildings or tents are ineffective and unsuitable. A warehouse, township garage, armory, motor pool, or convention hall that is accessible to a trained labor force, is within reasonable distance from lodging, and has adequate parking and exterior grounds could meet this requirement. If a facility is situated in a secure site (*e.g.*, military installation or refinery) accommodations for a fluctuating volunteer work force need to be addressed. The facility may be located up to 3-4 hours from the spill site, provided that on-scene stabilization is administered prior to transport. An oil spill stabilization site can be located at the time of a spill.

It is recommended that a list be assembled of potential sites within the identified area and the sites be physically reviewed by a representative of a wildlife response group with major oil spill response experience. Once actual facilities have been identified, all costs, availability, and contract information should be reviewed every six months.

Facility Requirements:

This list represents minimum facility needs for rehabilitating 100-150 oiled animals. Space requirements includes:

Identified Space	Area
Front desk/admissions	250 sq. ft.
Logistics office	250 sq. ft.
Kitchen/food storage	200 sq. ft.
Husbandry area (large central room)	1,200 sq. ft.
Supplies/storage	250 sq. ft.
Wildlife Cleaning Area I	750 sq. ft.
Medical treatment/exam	200 sq. ft.
Pathology/lab/cold storage	100 sq. ft.

[1] Material derived from Tri-State Bird Rescue & Research, Inc.

Isolation Ward	200 sq. ft.
Volunteer/worker rest room	150 sq. ft.
Bathrooms/decon/changing room	200 sq. ft.
Outside pool areas @ 10'x15'x2' pool per 15 birds + access and maintenance space	3,300 sq. ft.
Non-hazardous and regulated (medical and oily) trash Outside Inside	 400 sq. ft. 50 sq. ft.
Outside area for oily waste water	300 sq. ft.
Loading dock and parking for 50 (opposite side of building from outside cages)	5,000 sq. ft.
Total interior square footage Total exterior square footage **TOTAL SQUARE FOOTAGE**	3,800 sq. ft. 9,000 sq. ft. **12,600 SQ. FT.**

Note: If an existing wildlife rehabilitation center were used, it would require space in addition to the space allocated for any existing caseload. Animals impacted by an oil spill must be cared for separately from the in-house population.

Hot and Cold Water Capacity:

When selecting a wildlife response facility it is important that the water supply will not be contaminated by the oil spill. For preplanning purposes, potential facility locations should be selected in areas of low spill probability. All oily waste must be collected and disposed of in accordance with applicable regulations. The large quantities of rinseate, pool, and general use water generated during a spill response are permitted access to most municipal systems. It is therefore inadvisable to select a location that relies on a septic system to handle waste, for this large volume of water can exceed the designed capacity of most septic systems. Ideally, there should be external access to cold water supplies for filling outdoor pools.

Due to the nature of wildlife rehabilitation, large amounts of water are used in many locations throughout the facility. It is therefore advisable that the facility should have floors that can tolerate being wet, with drains at least in the areas designated for cleaning activities.

Water Needs	Amount/Type
Cold water volume (pools and general use)	23,360 gallons per day
Hot water volume (animal cleaning, only)	450 gallons per hour @ 104 degrees F
Water pressure (animal cleaning, only)	50-60 psi
Water hardness (animal cleaning, only)	0.042-0.060 ppm

Note: true sea birds (diving and pelagic species) cannot be successfully rehabilitated unless the water is maintained at the proper water hardness.

A potential facility in terms of size, availability, and location should not be discarded due to hot water and hardness capacities. Provided there is adequate cold water supply, mobile hot water and treatment systems can be retrofitted into existing equipment without much difficulty.

Electric and Lighting:

The electric needs of a wildlife response facility are very similar to a conventional production operation in so far as the need for general and task lighting, with an adequate number of separately circuited outlets throughout the space capable of providing 20 amp protection. Because of the potential risk of electric shock in wet areas, the addition of a ground fault interrupter (GFI) circuit breaker in those areas is desirable.

In addition to lighting and the heat, ventilation, and air conditioning systems, electric power will be used for hot water heaters, freezers, refrigerators, heat lamps, pet dryers, office and medical equipment, pool pumps and filters, power tools, etc. General a 200 amp 120/240 volt 3-wire single phase service with minimum of ten 20 amp circuits in addition to the lighting and HVAC needs, with the ability to expand will be required.

HVAC Systems:

The three main concerns regarding air quality are:

1. Eliminating thermal stress to debilitated animals by providing a stable, draft free inside air temperature between 70-80 degrees F.
2. Minimizing human and animal exposure to petroleum volatiles.
3. Minimizing animal exposure to pathogenic organisms (bacterial and fungal).

Air within a wildlife response facility should be exchanged six times per hour within office space, ten times per hour within large open areas involving animal care, and twenty times per hours within critical care and surgical areas and still maintain ambient temperatures.

Typical HVAC systems used in industrial space are often forced air or closed re-circulating systems which by themselves will not meet the above requirements. These systems will need to be augmented with portable filtration (HEPA) and air exchange units. The design of the systems should be determined by the wildlife response group once the facility has been selected and the specifics of the animal caseload are known. Air quality in systems that employ return air filters can be enhanced through the replacement of the existing air filters with an electrostatic type. This will not preclude the need for HEPA-type filtration and regular air exchanges as outlined above.

Communications:

The wildlife response facility will require a minimum of three telephone lines (public, private, fax/modem) with the ability to add additional lines.

Appendix F

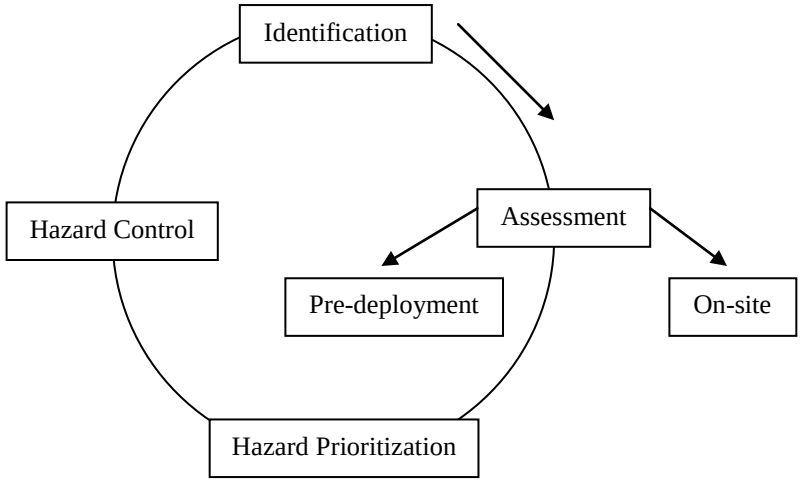
OPERATIONAL RISK MANAGEMENT AND SAFETY GUIDE

Ref: (a) Operational Risk Management COMDTINST 3500.3

Operational Risk Management Process

1. Identify Mission Tasks
2. Identify Hazards
3. Assess Risks
4. Identify Options
5. Evaluate Risk vs. Gain
6. Execute Decision
7. Monitor Situation

THE HAZARD CYCLE (For ORM Steps 2 and 3)



1. **IDENTIFY MISSION TASKS**

(Self explanatory)

2. **HAZARD IDENTIFICATION**

Types of Hazards:

Physical	**Chemical/Biological**	**Animal/Plant**	**Human**
Slipping	Explosion	Bites/Stings	Violence
Tripping	Flammable	Poison	Poor Lifting
Fall	Air Reactive	Thorns/burrs	Repetition
Overhead	Water Reactive	Disease	Swarms
Heat Stress	Chemically Reactive	Feces/Coliforms	Poor posture
Cold Stress	Alpha Radiation		Awkward motion
Electrical	Beta Radiation		Fatigue
Blunt Objects	Gamma Radiation		Poor hygiene
Sharp Objects	X-Ray		Illness
Noise	Bio-weapon		Alcohol/Drugs
Vehicle	Chemical weapon		Over crowding
Fire	Irritant		Poor comms
Sun/UV Glare	Asphyxiant		Noise
Sun Burn	Oxidizer		Smoking
Pinch Points	Carcinogen		Driving
Machinery	Corrosive		
Lightning	Cryogenic		
Drowning	Toxic		
Engulfment	Biomedical		
	Particulates		
	Fumes (weld etc.)		
	O2 Deficiency		

3. **RISK ASSESSMENT**

Risk = Severity x Probability

Conduct risk analysis before departing workplace (pre-deployment) and once you arrive on-site.

a. Severity (of Hazard)

Potential consequence of an event measured in terms of degree of damage, injury or impact on a mission.

Range	**Relative Rank**	**Health Examples**
None or slight	1	None to minimal annoyances (mosquitoes)
Minimal	2	Temporary damage with irritant qualities only
Significant	3	Temporary damage, impairing mental/physical ability
Major	4	Temporary long-term damage needing hospitalization
Catastrophic	5	Permanent damage, loss of limb or life

b. Probability

The likelihood that the potential consequences will occur.

A number of factors influence the probability of a hazard consequence. They can be divided into the following categories:

Environment Time Source Human Interaction Work

They can increase or decrease the probability of the hazard

When considering these factors, it is important to determine how these factors change the hazard in relation to hazard recipients (public, workers, responders, environment, property, etc.). Do they make the hazard more likely to effect a recipient or less likely?

Environment

Factor	Intensity of Factor	Result
Wind	Increase	Increase dispersion Increase cold stress Increase plume/vapor directional flow Increase evaporation Increase slips/trips/falls
Rain	Increase	Increase in chemical plume washout Increase runoff Increase gravitational flow Increase slips/trips/falls Decrease visibility
Water Currents	Increase	Increase in dispersion Increase directional flow Decrease boat handling ability Increase drowning danger
Sea State	Increase	Increase dispersion Increase evaporation Decrease directional flow Decrease boat handling Increase drowning danger
Sunlight	Increase	Increase photo-oxidation (chemical change) Increase UV eye-glare hazard Increase sunburn hazard
Temperature	Increase	Increase heat stress Decrease viscosity (thickness) Increase evaporation Increase photo-oxidation (change) Increase chemical reaction
	Decrease	Increase cold stress (Opposite of heat increase)
Fog	Increase	Decrease visibility Increase surface slipperiness

Time

Increase	Duration of exposure increased Evaporation progressed Diminished chemical volatility Diminished chemical reactivity

Source

• Amount spilled • Visibility, how noticeable • Toxicity • Evaporation Rate/ Volatility • Persistence • Vapor pressure • Flammability/Explosive • Odor threshold	• Viscosity • Air Density • Specific Gravity • Solubility • Water mixing • Reactivity • Oxidizer • Carcinogenicity

Human

• Age • Fitness level • Weight • Current Health • Training	• Medications • Temperature acclimatization • Stress • Fatigue • Communications

Work

• Proximity to hazard • Degree of hazard handling • Increased breathing due to work • Awkward movements required • Repetitive motion	• Degree of hazard movement • Heavy Loads • Mental Stress • Forceful exertion required • Increased body heat generation

(1) *Probability Rating*

The likelihood that the potential consequences will occur.

Range	Relative Rank
Impossible/Remote	1
Unlikely under normal conditions	2
About 50-50 chance	3
Greater than 50% Chance	4
Very likely to happen	5

Example

Activity	Relative Rank
Fire/explosion from closed gas container	1
Fire/explosion when pouring gas	2
Smoker nearby while pouring gas	3
Welding close but not in contact with gas	4
Bring flame in contact with gas	5

c. Prioritize Hazards

(1) Multiply severity and probability relative ranks.

(2) Rank hazards in descending order starting from lowest (1) to highest (25).

4. **IDENTIFY CONTROL OPTIONS**

a. Engineering Controls

Barriers	Shields	Dams
Capping	Covering	Fencing
Terminating	Shutting	Blocking
Chocks	Enclosures	Diverters
Flanging	Guarding	Substitution
Anchoring	Ventilation	Blowing
Scaffolding	Grounding	Substitution
Bonding	Insulation	Lighting
Locks, Tags	Kill-switches	Shut-off valves
Taglines	Circuit Breakers	Process change
Plugging, patching	Sealing	Absorbers

b. Administrative Controls

Reduced work duration	Worker rotation	Safety plans
Training	Safety briefs	Relief personnel
Maintenance	Drinking fluids	Work/rest periods
Good housekeeping	Roving security	Signs
Warning lights	Alarms	Break areas
Pre-inspections	Field checks	Buddy system
Line of sight comms	Comms schedule	Equipment staging
Load shifting	Hazard marking	Placarding
Labeling	Hand signals	Safety observers
Fendering	Work plans	Replenish fluids
Handcarts/trolleys	Fire extinguishers	Drum bulking
Eye Wash Station	Hand washers	Showers

c. Personal Protective Equipment Controls

Hard hats	Steel-toed shoes	Safety glasses
Safety goggles	Face shields	Hearing Protection
Life jacket	Fall arrests	SCBA
APRs	Chemical suits	Flash suits
Fire resistant suits	Work gloves	Chemical gloves
Sun glasses	Sun-block	Life rings
Eye wash stations	Night vision	Thermal protection
Dry/wet suits	Hand warmers	Wind breaker coat
Knee pads	Over garments	Coveralls
Booties	Cooling vests	Chap lip protection
Hats for warming	Gloves (warmth)	Clothing (warmth)

5. **EVALUATE RISK VS. GAIN**

Risks (**H**igh, **M**ed, **L**ow)		Gains (Check appropriate)			
Response Personnel			Save	Protect	Mitigate
Other Agency Persons		Human Health			
Private Response Persons		Environment			
Organizational Property		Property			
Other Agency Property		U.S. Security			
Private Response Property		Economic			

6. **EXECUTE THE DECISION**

7. **MONITOR THE SITUATION**

a. Human Health

(1) Conduct medical monitoring (heart rate, blood pressure, body temperature, etc).

(2) Monitor personal symptoms.

(3) Fatigue Symptoms

Forgetfulness	Moody	Fixation
Slowed Reaction	Indecisiveness	Lethargy
Poor Comms	Reduced Vigilance	Nodding Off
Apathy		

(4) Cold Stress Symptoms

Type	Symptom
Hypothermia	Mental alertness reduced Fatigue Slow physical reaction Apathy Pain in extremities Maximum shivering Dilated pupils Clouded consciousness Poor decision making
Frostbite	Whitened areas of skin Burning sensation at first Blistering Affected area cold, numb tingling

(5) Heat Stress Symptoms

Type	Symptom
Heat Stroke	Skin is hot Skin is dry Skin is red & spotted Body Temp > 105 Mental confusion Convulsions Unconscious
Heat Exhaustion	Extreme Weakness Giddiness Headache Nausea Vomiting Skin clammy, moist Face pale/flushed Body Temp normal Body Temp elevated
Heat Cramps	Painful muscle spasms Profuse sweating
Fainting	Lack of blood to brain
Heat Rash	Skin rash Prickly heat feeling

b. Action Levels

Type	Measurement
Oxygen	%
Combustibility	%
Toxic Limits (ex. TLV)	Varied units
Radiation	Varied units

c. Changes in the Hazard Source

Form	Fuming	Temperature	Vapors
Bulging	Noise	Compression	Leakage
Color	Texture	Size	Reaction

d. Changes in Work Activity

New Management	Source stirring	New personnel	Diverting, damming, diking
Blanketing	Intensity	Source interaction	Material handling
Day/Night	# Breaks	Change in Facilities	Change in Location
Duration			

e. Changes in the Environment

Temperature	Sunlight	Wind	Cloud cover
Water color	Surfaces	Sea State	Vegetation
Animal behavior	Animal appearance	Visibility	Corrosion
Currents	Water levels	Precipitation	

f. Equipment

Gauges	Background check	Reproducibility
Accuracy	Noise output	Drift readings
Shock sensitivity	Exhaust output	Pump activity
Battery life	Intrinsic Safety	Radio interference
Water damage	Decontamination	Vibration
Last service date	Calibration log	Physical appearance
Gaskets	Filters	Fluid/Air pressure levels
Safety features	Electrical wires	Grounding, bonding
Hose kinks/bends	Attachments	Fittings
Leaks/hissing	Performance Parameters	Comms check conducted

g. Personal Protective Equipment

i.) Head, Eye, Ear, Hand and Other Types of Protection

Hard hat not cracked, damaged, worn, fits properly & meets safety standards
Eye protection suitable for hazard type and meets standards
Ear protection in good condition & meets noise hazard level
Sunglasses with proper UV protection used when appropriate
Sun screen used in heavy UV environment
Proper type of glove used to address hazard
Gloves fit tightly and with no chance of being caught in pinch points
Proper life jackets used and securely attached to wearer
Proper footwear (steel toed shoes) and foot-to-surface friction attained.
Fall protection used where necessary

ii.) Air Purifying Respirators & Self Contained Breathing Apparatus

Mask, seals, valves and straps not deteriorated cracked or worn
Proper APR cartridge for mask (by hazard and by manufacturer)
Mask lens clear and free of obstructions
Sun glare cap for lens available if needed
Mask lens applied with defogging agent or use nose cup
Mask passes field negative pressure tests
Optical kits available for personnel who need them
SCBA bottle full of proper grade of air
SCBA bottle service life not expired
SCBA bottle hydrostatically tested within prescribed dates
Main line, bypass valve and regulator operative
Alarms working
Regulator not filled with condensation in cold weather
“O” rings in place in hoses and masks
Breathing tube not deteriorated, passes field “stretch” test
SCBA Mask passes negative pressure, one handed field test

iii.) Protective Suits

Seams free of defects and holes
Free of deterioration, tears, and holes
Free of pin holes (hold up to sun or flashlight)
Free if discoloration, swelling and stiffness
Free not brittle due to extreme cold weather
Zippers and latches waxed in cold weather
Suit not significantly creased
Suit log indicates maintenance tests within prescribed periods (i.e. 6 months)

h. Contamination Avoidance and Decontamination

Proper decontamination method chosen
Zones of control (Hot, Warm, Cold) clearly marked and secured
Entry personnel aware of heavy contaminated areas to avoid within Hot Zone
Minimum amount of decontamination personnel used to decontaminate entry team
Proper decontamination steps used
Personnel properly showered and cleaned prior to departing site
Disposable work clothes used beneath protective clothing
Protective clothing properly decontaminated and disposed of
Work clothing laundered in separate facility not at worker homes

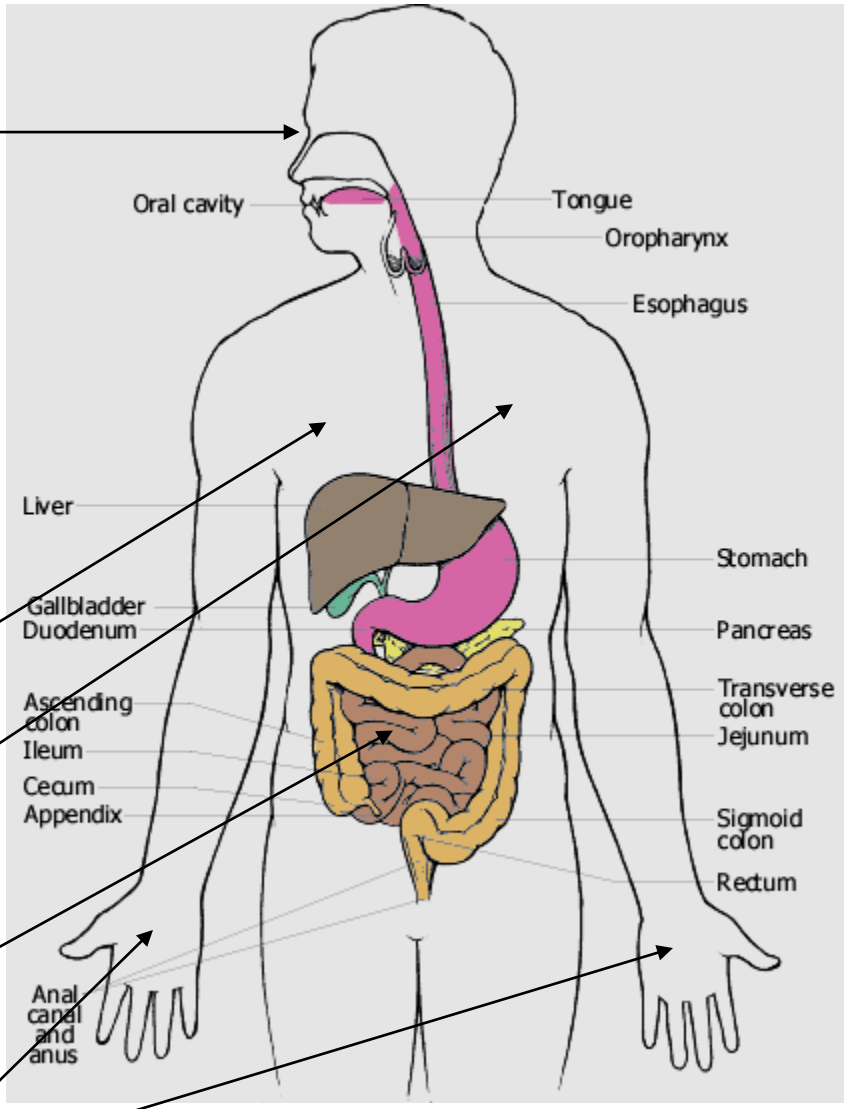
HEADACHE
LIGHTHEADEDNESS
DIZZINESS
DROWSINESS
EXHILARATION
GIDDINESS
REDDENING OF FACE
NERVOUSNESS
RESTLESSNESS
CONFUSION
DISTURBED VISION
ABNORMAL SALIVATION
DIFFICULTY HEARING

DRYNESS/IRRITATION
COUGHING, SNEEZING
DIFFICULTY BREATHING
IRREGULAR HEARBEAT

ABDOMINAL PAIN
NAUSEA
VOMITING
BACK PAIN

RED, RASH, BLISTERED, OR BURNED SKIN

<u>ADDITIONAL SYMPTOMS</u>:
PAINFUL MOVEMENT
NUMBNESS
DIARRHEA
WEAKNESS
SWEATING
SWELLING/SORENESS
BLEEDING



NOTE: *You may suffer from one or many symptoms.*

GRAPHIC: http://www.ama-assn.org/insight/gen_hlth/atlas/newatlas/digest.htm