

U. S. COAST GUARD AUXILIARY



Auxiliary Environmental Response Investigator

(AUX-ED)

Study Guide

This Study Guide is for educational purposes only. It is meant solely to be an aid for the Auxiliarist, and not intended to replace the required in person Coast Guard training.

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Tasks:

1.0 Basics for Pollution Investigation & Response

1.1 Demonstrate ability to use applicable United States Code, Code of Federal Regulations, Marine Safety Manuals, and Coast Guard Policy Letters

a. Code of Federal Regulations

CFR Titles

29 CFR: Labor

33 CFR: Navigation and Navigable Waters

40 CFR: Protection of Environment

46 CFR: Shipping

49 CFR: Transportation

CFR Citations

Organized by Title, Part, Sub-Part, etc. (for example: 40 CFR 300.15.a.1.A.i.ii)

Understanding CFR Language

Always take into account the definitions for each particular citation.

All CFRs are NOT created equal.

b. Marine Safety Manual (MSM)

Pollution Response Related Volumes

Volume V: Investigations and Enforcement

Volume VI: Ports and Waterways Activities

Volume IX: Marine Environmental Protection

c. Coast Guard Policy Letters

Coast Guard Policy Letters provide detailed guidance on U.S. Coast

Guard's standing or views on various subject areas concerning Federal Marine Safety Regulations and USCG Marine Safety Policies.

1.2 Discuss and demonstrate a working knowledge of all listed references. To include the following:

a. The National Oil and Hazardous Substance Pollution Contingency Plan (NCP)

40 CFR Part 300

Purpose: To provide the organizational structure and procedures to prepare for and respond to discharges of oil and releases of hazardous substances, pollutants, and contaminants. There are four general priorities of the NCP. Federal agencies should:

- Plan for emergencies and develop procedures for addressing oil discharges and releases of hazardous substances, pollutants, or contaminants.
- Coordinate with other federal agencies.
- Coordinate with affected states, local governments, and private entities
- Make available those facilities and resources that may be useful in a response situation

In Executive order (E.O.) 12777 (56 FR 54757, October 22, 1991), the President delegated to the Environmental Protection Agency (EPA):

- The responsibility for the amendment of the NCP.
- Established a National Response Team consisting of Federal Agencies.
- Established Regional Response Teams consisting of Federal and Regional Authorities/Agencies.

b. Regional Response Plan (RRP)

The criteria for state, local and regional oil removal contingency plans are provided to assist state, local and regional agencies in the development of oil removal contingency plans for the inland navigable waters of the United States. The regulation establishes minimum criteria for the development and implementation of state, local, and regional contingency plans by state and local governments in consultation with private interests to insure timely, efficient, coordinated and effective action to minimize damage resulting from oil discharges.

c. Unit Area Contingency Plan(s) and Annexes (ACP)

NCP requires the development and maintenance of Regional & Area Contingency Plans. The purpose of the ACP is to define the roles, responsibilities, resources, and procedures necessary to respond to a myriad of spill response contingencies.

- ACPs can be found at local Sectors and Marine Safety Units.
- ACP was prepared by, and is updated by, an Area Committee consisting of Federal, state and local agencies/governments.
- Identifies sensitive areas and classifies them as a class A, B or C sensitive area, with an A area being the most sensitive, and C being least sensitive.

- Provides response strategies and tactics for responding to worst case oil spill and hazardous substance releases in those areas.
- Identifies trustees and provides contact information in case of a discharge of oil or release of hazardous substance.
- Contains dispersant plans

d. Vessel and Facility Response Plans and Requirements

A response plan must identify a qualified individual (QI) and at least one alternate qualified individual and must be available 24 hours a day, 7 days a week. The QI must speak English and reside in the U.S. Response plans must be written in English. Vessel response plans are approved by the vessel's flag state. Facility response plans are approved by the USCG. Response plans must have emergency contacts and identify an Oil Spill Recovery Organization (OSRO) that will assist in the cleanup and response of an oil spill.

The following types of facilities and vessels are required to have response plans:

- Marine Transportation-related (MTR) fixed and mobile facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more, and MTR facilities specifically designated as substantial harm facilities by the COTP under 33 CFR 154.1016 are required to develop a Facility Response Plan.
- Vessels constructed or adapted to carry, or that carry, oil in bulk as cargo or oil cargo residue and are U.S. vessels, operate on the navigable waters of the U.S., or transfer oil in a port or place subject to the jurisdiction of the U.S. are required to develop a response plan.
- Vessels which engage in oil lightering operations in the marine environment beyond the baseline from which the territorial sea is measured, when the cargo lightered is destined for a port or place subject to the jurisdiction of the U.S. are also required to develop a response plan.

e. Vessel Response Plan (VRP) Express

A vessel response plan (VRP) is a document that outlines what the vessel will do in the case of an offshore spill. VRPs are required by the United States Coast Guard for maritime operators that are carrying certain quantities of chemicals and/or refined petroleum products.

f. Response Resource Inventory - accessed via Marine Information for Safety and Law Enforcement (MISLE) database

The Oil Pollution Act of 1990 mandated the creation of a national database of response resources that would be maintained by the Coast Guard National Strike Force Coordination Center (NSFCC). This voluntary equipment locator system, known as the Response Resource Inventory (RRI), was expanded in 1995 to accommodate the needs of the Oil

Spill Removal Organization (OSRO) classification initiative.

g. Guidelines for the U.S. Coast Guard Oil Spill Removal Organization (OSRO) Classification Program

The OSRO classification process was developed by the U.S. Coast Guard to provide guidelines to evaluate an OSRO's potential to respond to oil spills. Although participation in the OSRO classification is voluntary, real-world incidents have shown that this program directly contributes to aggressive, rapid and well-coordinated responses.

h. National Preparedness for Response Exercise Program (PREP) Guidelines

PREP was developed to establish a workable exercise program that meets the intent of section 4202 (a) of the Oil Pollution Act of 1990 (OPA 90). PREP provides a mechanism for compliance with the exercise requirements. PREP is a unified federal effort and satisfies the exercise requirements of the Coast Guard, Environmental Protection Agency, Pipeline and Hazardous Materials Safety Administration, and Bureau of Safety and Environmental Enforcement.

i. Outer Continental Shelf (OCS) Oil Spill Response Plans and Requirements

The OCS is all submerged lands lying seaward of state coastal waters which are under U.S. jurisdiction. The Bureau of Safety and Environmental Enforcement (BSEE) is an agency in the Department of the Interior that enforces safety and environmental regulations for offshore energy development. BSEE is involved in the approval of oil and gas plans, facilities, and operations. The process includes reviews where there is much emphasis on design, operations, and maintenance. The BSEE monitors compliance with the regulations throughout the permitting process and operations and has BSEE personnel in the field to ensure operators are complying with the regulations.

1.3 Identify and explain the differences for the following terms:

a. Hazardous Waste

Hazardous waste is waste that poses substantial or potential threats to public health or the environment. Hazardous wastes from non-specific sources are addressed in 40 CFR 261.31, while hazardous wastes from specific sources are discussed in 40 CFR 261.32.

b. Hazardous Substance

Hazardous substances are substances that are considered severely harmful to human health and the environment. Many are commonly used substances which are harmless in their normal uses but are quite dangerous when released.

- **Human health** - The variety of hazardous substances used in our everyday lives brings with them an equally great variety of well-documented health effects. In some cases, these substances may irritate the skin or eyes, make it difficult to breathe, cause headaches and nausea, or result in other types of illness.

- **The Environment** - Hazardous substances can kill living organisms in a lake or river, destroy wildlife and vegetation in a contaminated area, cause major reproductive complications in wildlife, or otherwise limit the ability of an ecosystem to survive. Certain hazardous substances also have the potential to explode or cause a fire, threatening both wildlife and human populations.

c. Hazardous Material

A substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has been designated as hazardous under section 5103 of Federal Hazardous Materials transportation law.

d. Oil

As defined by section 311(a)(1) of the Clean Water Act (CWA), oil means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

Oil, as defined by section 1001 of the Oil Pollution Act (OPA) means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil, but does not include petroleum, including crude oil or any fraction thereof, which is specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601) and which is subject to the provisions of that Act.

e. Release and Discharge

Release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of chemicals or HAZMAT. **Discharge** includes but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil.

1.4 Define “Harmful Quantity” and “Reportable Quantity” as found in the Federal Water Pollution Control Act (FWPCA) and Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA):

a. Harmful Quantity

Harmful quantity is any quantity of discharged oil that violates state water quality standards, causes a film or sheen on the water’s surface, or leaves sludge or emulsion beneath the surface. For this reason, the Discharge of Oil regulation is commonly known as the “sheen” rule. Note that a floating sheen alone is not the only quantity that triggers the reporting requirements (e.g., sludge or emulsion deposited below the surface of the water may also be reportable).

b. Reportable Quantity

Reportable quantity means quantities that may be harmful as set forth in 40 CFR 117.3 (FWPCA). Reportable quantity (“RQ”) means that quantity, as set forth in this part, the

release of which requires notification pursuant to this part in 40 CFR 302.4 (CERCLA).

1.5 Define the term “Responsible Party”:

Responsible party as defined by section 1001 of the Oil Pollution Act includes the following:

- **Vessels** - In the case of a vessel, any person owning, operating, or chartering the vessel.
- **Onshore Facilities** - In the case of an onshore facility (other than a pipeline), any person owning or operating the facility, except a federal agency, state, municipality, commission, or political subdivision of a state (or any interstate body) that, as the owner, transfers possession and the right to use the property to another person by lease, assignment, or permit.
- **Offshore Facilities** - In the case of an offshore facility, other than a pipeline or a deepwater port, the lessee or permittee of the area in which the facility is located or the holder of a right of use and easement granted under applicable state law or the Outer Continental Shelf Lands Act (43 U.S.C. 1301–1356) for the area in which the facility is located (if the holder is a different person than the lessee or permittee), except a federal agency, state, municipality, commission, or political subdivision of a state, or any interstate body, that as owner transfers possession and right to use the property to another person by lease, assignment, or permit.
- **Deepwater Ports** - In the case of a deepwater port licensed under the Deepwater Port Act of 1974 (33 U.S.C. 1501–1524), the licensee is the responsible party.

1.6 Define the following terms as they apply to the FWPCA:

- a. **Coastal Zone** - Refers to all United States waters subject to the tide, United States waters of the Great Lakes, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the NCP, and the land surface or land substrata, ground waters, and ambient air proximal to those waters. The term coastal zone delineates an area of federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in federal regional contingency plans.
- b. **Inland Zone** - Indicates the environment inland of the coastal zone excluding the Great Lakes and specified ports and harbors on inland rivers. The term inland zone delineates an area of federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in federal regional contingency plans.
- c. **Coastal Waters** - For the purposes of classifying the sizes of discharges, this means the waters of the coastal zone except for the Great Lakes and specified ports and harbors on inland rivers.
- d. **Inland Waters** - Inland waters means the waters shoreward of the territorial sea baseline.

- e. **Navigable Waterway** - Means the waters of the United States, including the territorial seas. The term includes:
- All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.
 - Interstate waters, including interstate wetlands.
 - All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands that the use, degradation, or destruction of which would affect, or could affect, interstate or foreign commerce.
 - All impoundments of waters otherwise defined as navigable waters.
 - Tributaries of waters previously identified in this definition, including adjacent wetlands.
- f. **Exclusive Economic Zone** - The zone extending 200 nautical miles from the territorial sea baseline, including the contiguous zone, and in which the United States has the sovereign rights and jurisdiction, and all nations have high seas freedoms.
- g. **Territorial Sea** - The waters, 12 nautical miles wide, adjacent to the coast of the United States and seaward of the territorial sea baseline, for purposes of criminal jurisdiction, the special maritime and territorial jurisdiction, and interpreting international law.
- h. **Contiguous Zone** - For the purpose of the Federal Water Pollution Control Act, contiguous zone means the zone that extends from 3 nautical miles to 12 nautical miles as measured from the territorial sea baseline.

1.7 **Define and explain the coastal/inland jurisdictional boundaries in your local AOR utilizing the Area Contingency Plan and ERMA:**

The impacts of an oil spill can vary widely, from isolated incidents that are contained on-site to incidents that have local, regional, national, or international impacts. Area Contingency Plans are developed to address the specific geographic scope of the incident. Such plans enable responders to address incidents by helping to identify and coordinate activities of different government agencies and private organizations involved in the response.

The Environmental Response Management Application (ERMA) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index (ESI) maps, ship locations, weather, and ocean currents, in a centralized, easy-to-use format for environmental responders and natural resource decision makers.

1.8 Discuss and explain the purpose or use of the following documents found aboard U.S. and foreign commercial vessels:

- a. Certificate of Inspection (COI)** - A Certificate of Inspection is valid for 1 year for vessels carrying more than 12 passengers on international voyages, and valid for 5 years for all other vessels. Certificate is issued upon completion of the vessel and determination that the vessel and its equipment are approved by the inspector. The certificate includes a description of the vessel, routes the vessel may travel, minimal manning requirements, safety equipment and appliances required, maximum number of persons that may be carried, and names of owners/operators.
- b. Certificate of Documentation (COD)** - Any vessel over 5 tons engaging in fisheries in U.S. navigable waterways, EEZ, or coastwise trade, unless exempt, is required to have a Certificate of Documentation with a valid endorsement appropriate to the activity engaged in. A COD is issued with a registry, coastwise, fishery, or recreational entity.
- c. Declaration of Inspection (DOI)** - Person in Charge (PIC) parties must fill out a Declaration of Inspection (DOI) before a transfer. The declaration must include names, address, date/time of start/finish, spaces for initials for each item listed, and a space for each PIC involved to sign and date. Vessel and Facility must maintain a copy for 1 month.
- d. International Oil Pollution Prevention Certificate (IOPP)** –An IOPP Certificate is issued to a new ship after it has been inspected by an appointed surveyor and found to be in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL). The IOPP Certificate provides details of a ship’s oily water separating, filtering, and monitoring equipment as required by MARPOL.

<https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/1994/n6-94.pdf>

<https://www.dco.uscg.mil/Portals/9/OCSNCOE/References/NVICs/NVIC-8-83.pdf?ver=H3NSOPrrNncl7Sq7SSC4hg%3D%3D>
- e. Shipboard Oil Pollution Prevention Emergency Plan (SOPEP)** - Required by MARPOL Annex I for all domestic vessels, all foreign vessels 400GT+, and oil tankers 150GT+. Written in English and the working language of the crew. Contains an introduction, preamble, reporting requirements, steps to control a discharge, national and local coordination information, and appendices.
- f. Oil Record Book (ORB)** - An Oil Record Book is required for tankers 150GT+ and any ship 400GT+. Vessel is required to log any movement of oil within the vessel and transferring to/from the vessel. Oil Record Books must be kept for 3 years.
- g. Certificate of Financial Responsibility (COFR)** - A document to satisfy that a foreign vessel possesses insurance (means to pay) for any cleanup required if a spill should occur. Expires after 3 years.
- h. Official Logbook** - Vessel records of all major events that take place, such as tests (propulsion, steering, navigation) done before entering port.

- i. **Cargo Record Book** - For chemical vessels only, must be kept for 3 years. Lists Noxious Liquid Substances (NLS) cargo loaded, transferred, or unloaded. NLS tanks are washed, cleaned or ventilated. Lists if NLS and/or NLS washings are discharged out to sea on purpose or by accident.
- j. **Shipboard Marine Pollution Emergency Plan (SMPEP)** - Required for chemical vessels only. Serves as a ship oil pollution emergency plan for noxious liquid substances.
- k. **Oil Transfer Procedures** - Essentially an operations manual for the vessel. Lists products transferable to and from the vessel, required personnel on duty, PICs, emergency shutdown procedures, tank top-off procedures, discharge/release reporting procedures for oil/HAZMAT, and hose marking addenda.

1.9 Explain the Freedom of Information Act (FOIA):

- a. **The procedure a public citizen must follow to obtain information under FOIA** - Before making a request, a citizen should look to see if the information they are interested in is already publicly available. One can find a lot of useful information on a range of topics on each agency's website. A person can also search for information agencies have already posted online. If the information you want is not publicly available, you can submit a FOIA request to the agency's FOIA Office. The request must be in writing and reasonably describe the records you seek. Most federal agencies now accept FOIA requests electronically, including by web form, e-mail, or fax.

b. What information cannot be released under FOIA:

- Information that is classified to protect national security.
- Information related solely to the internal personnel rules and practices of an agency.
- Information that is prohibited from disclosure by another federal law.
- Trade secrets or commercial or financial information that is confidential or privileged.
- Privileged communications within or between agencies, including those protected by the Deliberative Process Privilege (provided the records were created less than 25 years before the date on which they were requested), Attorney-Work Product Privilege, or the Attorney-Client Privilege.
- Information that, if disclosed, would invade another individual's personal privacy.
- Information compiled for law enforcement purposes that could reasonably be expected to interfere with enforcement proceedings, would deprive a person of a right to a fair trial or an impartial adjudication, could reasonably be expected to constitute an unwarranted invasion of personal privacy, could reasonably be expected to disclose the identity of a confidential source, would disclose techniques and procedures for law enforcement investigations or prosecutions, or would disclose guidelines for law enforcement investigations or prosecutions if such disclosure could reasonably be expected to risk circumvention of the law, or

could reasonably be expected to endanger the life or physical safety of any individual.

- Information that concerns the supervision of financial institutions.
 - Geological information on wells.
- c. **Who can deny the release of information under FOIA** - If the Bureau or Office that is the custodian of the records determines that there are no records responsive to a FOIA request, or that one or more of the FOIA exemptions described above applies to the documents requested, the request will be denied in writing.
- d. **Who has the authority to release information on an incident investigation** - District Legal has authority to release information regarding an incident investigation.

1.10 Explain the purpose of the Privacy Act:

- a. **What information is protected** - The Privacy Act of 1974, a United States federal law, establishes a Code of Fair Information Practice that governs the collection, maintenance, use, and dissemination of personally identifiable information about individuals that is maintained in systems of records by federal agencies.
- b. **Who is subject to the Privacy Act** - The Privacy Act requires that agencies give public notice of their systems of records by publication in the Federal Register. The Privacy Act prohibits the disclosure of information from a system of records absent of the written consent of the subject individual, unless the disclosure is pursuant to one of twelve statutory exceptions. The Act also provides individuals with a means by which to seek access to and amend their records and sets forth various agency record-keeping requirements.

1.11 Define the following spill categories for inland and coastal spills and identify any reporting requirements associated with them:

- a. **Minor** - A release of a quantity of hazardous substance(s), pollutant(s), or contaminant(s) that poses minimal threat to public health or welfare of the U.S. or the environment. An inland minor release is defined as less than 1,000 gallons, a coastal minor release is defined as less than 10,000 gallons.
- b. **Medium** - A release not meeting the criteria for classification as a minor or major release. An inland medium release is defined as 1,000 to 10,000 gallons, a coastal medium release is defined as 10,000 to 100,000 gallons.
- c. **Major** - A release of any quantity of hazardous substance(s), pollutant(s), or contaminant(s) that poses a substantial threat to public health or welfare of the U.S. or the environment or results in significant public concern. An inland major release is defined as more than 10,000 gallons, a coastal major release is defined as more than 100,000 gallons.

1.12 Define the following terms, citing examples, and describe the related jurisdictional issues:

- a. **Marine Casualty** - Any casualty or accident involving any vessel other than a public

vessel that occurs upon the navigable waters of the U.S., involves any U.S. vessel where such casualty accident occurs, with respect to a foreign tank vessel, involves significant harm to the environment or affects the seaworthiness of the vessel. This includes but is not limited to a fall overboard/injury/loss of life of any person, grounding, stranding, floundering, flooding, collision/allision, explosion, or fire.

- b. Reportable Marine Casualty** - Immediately after addressing safety concerns the owner, agent, master, operator, or person in charge, shall notify the nearest Sector Office, Marine Inspection Office, or CG officer whenever a vessel is involved in a marine casualty consisting of: unintended grounding; intended grounding; loss of main propulsion, primary steering, or anything that reduces maneuverability of the vessel; an occurrence materially and adversely affecting the vessel's seaworthiness; loss of life, injury that requires professional medical treatment; property damage in excess of \$25,000; or an occurrence involving significant harm to the environment.
- c. Significant Harm to the Environment** - In the navigable waters of the U.S., a discharge of oil or a discharge of hazardous substances in quantities equal to or exceeding the reportable quantity determined in 40 CFR 117.
- d. Public Vessel** - A governmental vessel that is not engaged in commercial service.

1.13 Describe the following forms:

- a. Notice of Federal Interest** - Issued during any pollution incident to a Responsible Party or possible Responsible Party. Document informing personnel of their liabilities if they are responsible for the pollution incident that occurred. Also informs them of what will occur if they fail to comply. Not an admittance of guilt. They do not have to sign it in order for it to be issued.
- b. National Response Center Incident Report** - The National Response Center (NRC) is a part of the federally established National Response System and staffed 24 hours a day by the U.S. Coast Guard. It is the designated federal point of contact for reporting all oil, chemical, radiological, biological and etiological discharges into the environment, anywhere in the United States and its territories. The NRC also takes maritime reports of suspicious activity and security breaches within the waters of the United States and its territories. NRC receives nationwide reports of oil and chemical spills at 1-800-424-8802.
- c. Report of Marine Casualty (CG-2692)** - Used to document Reportable Marine Casualty. Must be filed with USCG within 5 days of incident (Reportable Marine Casualty).
- d. Barge Addendum (CG-2692A)** - Used to report barges causing or sustaining damage reported on Form CG-2692. Cannot be used alone; must be used in addition to an original CG-2692.
- e. Alcohol Testing Following a Serious Marine Incident (CG-2692B)** - Form used to report alcohol and drug testing after a serious marine incident. Alcohol testing must be done within 2 hours of incident; drug testing must be done within 32 hours of incident. Public and recreational vessels are exempt.

1.14 Describe the safe work practices and other measures needed to provide an acceptable level of safety during pollution investigation and response activities:

Employ appropriate PPE (hard hat, eye and hearing protection, safety shoes, and Level D clothing). Complete a hazard assessment before deploying to the field, review SDS of suspected material before responding, ensure sufficient hydration and additional PPE as needed.

1.15 Discuss the various levels of investigations and when they are required (MSM Vol V Chapter B.8.):

- a. Data Entry Exception** - Less than Reportable Quantity, mystery spill - no CG response/investigative action taken, NDPES authorized discharge, spill is outside CG investigative jurisdiction, or unverifiable spill or proven erroneous.
- b. Data Collection** - Activities that do not require any significant investigative effort, and usually consist only of collecting and entering basic factual information into MISLE for future reference and analysis and, when applicable, referral for enforcement action.
- c. Informal** - More exhaustive investigative efforts and are not generally required, unless pollution incident is a part of a marine casualty as defined in 46 CFR, Part 4.
- d. Formal** - Typically, a large incident, large vessel, and/or a large quantity of oil. The Captain of the Port is involved in formal investigations.

1.16 Demonstrate the ability to use the RRI and/or the Response Plan and verify OSRO classification and capabilities.

To relieve the burden upon response plan holders to provide extensive detailed lists of response resources, the Coast Guard created the Oil Spill Removal Organization (OSRO) classification program. The RRI is the backbone of the classification system, and its capabilities are two-fold, comprised of an inventory element and a classification element. The inventory element provides Federal On-Scene Coordinators (FOSCs) and contingency planners with the ability to query available spill response equipment and its proximity to Coast Guard Captain of the Port (COTP) zones. The classification element, largely considered an incentive for OSROs to enter their inventories into the RRI, complements facility and vessel response plan development and review processes by systematically classifying OSRO response capability.

1.17 Discuss classification and capabilities of (3) OSROs in AOR:

The Coast Guard bases OSRO classification levels upon four categories: feet of containment boom; temporary storage capacity (TSC); skimmer capacity, which translates into an estimated daily recovery capacity (EDRC) measured in barrels per 24-hour period, and classification based upon COTPs zones and specific operating environments.

1.18 Discuss a Government Initiated Unannounced Exercise (GIUE):

Government Initiated Unannounced Exercises (GIUEs) are essentially no-notice exercises designed to measure a facility plan holder's or vessel plan holder's readiness by observing the plan holder's initial response actions to an Average Most Probable Discharge (AMPD) and verify the plan holder can effectively activate its response plan to a simulated discharge scenario.

1.19 Attend one equipment deployment exercise or drill:

Exercises are instrumental for USCG Captains of the Port (COTP) to evaluate industry preparedness for oil spill response by specifically testing a facility or vessel on notification procedures, response time, and deployment of facility-owned or Oil Spill Removal Organization (OSRO) equipment. Facility Response Plan holders and Vessel Response Plan holders are subject to these exercises under federal regulations.

1.20 Discuss coordinating one Targeted Multi-Mission Patrol:

Multi-mission patrols are the backbone of Coast Guard operations. The Coast Guard is the principal Federal agency responsible for maritime safety, security, and environmental stewardship in U.S. ports and inland waterways, along more than 95,000 miles of U.S. coastline, throughout the 4.5 million square miles of U.S. Exclusive Economic Zone (EEZ), and on the high seas. The Coast Guard applies military, regulatory, incident management, and law enforcement expertise to ensure safety, security, and resiliency across the Homeland Security enterprise.

1.21 Attend one Area Committee meeting:

The implementation of the Maritime Transportation Security Act of 2002 (MTSA) mandated the establishment of regional AMSCs as collaborative forums for government and industry partners to work together to enhance security in the maritime environment. This is accomplished through meetings, partnerships, networking, information sharing, training, vulnerability assessments, and development of plans and strategies.

1.22 Discuss the Coast Guard and local unit's Public Affairs policy and describe the type of information that could be released in a pollution related incident:

Public Affairs is a command function aimed at building and maintaining relationships among the community, elected officials and the media. The program is divided into Community Relations, Media Relations and Governmental Affairs. Coast Guard policy is that the public has a right to know. The Coast Guard provides maximum disclosure with minimum delay. If you did it, or are responsible for it, you can talk about it. The only exceptions include Freedom of Information Act exemptions.

2.0 Preliminary Assessment & Initiation of Action

2.1 Read and discuss the U.S. Coast Guard Marine Environmental Response Operations and Investigations Documentation and Reporting Procedures:

The Office of Marine Environmental Response Policy (CG-MER) provides guidance, policy, and tools for Coast Guard Marine Environmental Response planning, preparedness, and operations to prevent, enforce, investigate, respond to, and mitigate the threat, frequency, and consequences of oil discharges and hazardous substance releases into the navigable waters of the United States.

The U.S. Coast Guard Marine Environmental and Preparedness Manual can be found at:

[U.S. COAST GUARD MARINE ENVIRONMENTAL RESPONSE AND PREPAREDNESS MANUAL, COMDTINST M16000.14A \(defense.gov\)](#)

2.2 Read and discuss Marine Environmental Response (MER) Pollution Responder Techniques, Tactics, and Procedures (TTP):

Coast Guard Tactics, Techniques, and Procedures (TTP) are maintained by U.S. Coast Guard Force Readiness Command. TTPs consolidate, update, and standardize guidance for Coast Guard marine inspectors conducting certain types of inspections and exams. TTPs are not a substitute for applicable legal requirements. TTPs are intended to provide guidance to Coast Guard personnel and are not intended to, nor do they, impose legally binding requirements on any party outside the Coast Guard.

2.3 List possible sources of pollution reports and means of reporting, including:

- a. National Response Center** - The National Response Center is a 24-hour hotline set-up for the sole purpose of receiving marine reports. The call-taker will ask for all required info and disseminate it to the appropriate authority and jurisdiction via telephone, fax, and MISLE.
- b. Sector Command Center** - The Sector Command Center is a 24 hour contact number designated for each AOR for all information regarding the Port Zone; sends and receives information via phone, fax, radio, MSIB, and SMIB.
- c. Telephone** - A means with which to reach the appropriate personnel via land line or mobile.
- d. Report of a Marine Casualty (CG-2692)** - A report, in addition to the immediate notice required, to be filled-out for any casualty reported under 46 CFR 4.05-1 within 5 days of the occurrence.

2.4 Discuss the information contained in an NRC report:

NRC reports contain reporting parties contact information, location/time/date of incident, description of substance size, color, smell, characteristics, source/responsible party, and weather information (tides, current, wind, temperature, visibility/cloud cover).

2.5 Assist in processing a MISLE notification. Link the NRC report and determine the incident type:

The Notification Section provides capability to search MISLE notifications, enter new notifications and search NCR notifications.

2.6 Identify and coordinate external and internal notifications:

a. External Notifications

- Request contact information of person and/or organization notifying.
- Determine how the person and/or organization was notified.
- Determine if the person and/or organization will need to be updated.
- Determine if the NRC has been notified.
- Notify other trustees.

b. Internal Notifications

- Identify what department/division/person is notifying (Command Center, Station, etc.)
- Determine who notified that department/division/person.
- Determine if that department/division/person will need to be updated.
- Notify CDO, IMD Chief, IO (if applicable), FOSCR (if applicable), Prevention Department (if applicable).

2.7 Explain the Purpose of the Preliminary Investigation:

Preliminary Investigations are initial investigative efforts undertaken to ascertain whether a report is genuine, how severe an incident is or will become, whether the Coast Guard has jurisdiction, whether other agencies or offices must be notified, and what level of Coast Guard investigative effort is necessary. Preliminary investigations have no jurisdictional boundaries until they are complete. Preliminary investigations are documented in a MISLE Notification.

2.8 Conduct a preliminary investigation, including:

a. Determining required level of investigation-

- Data Entry Exception
- Data Collection
- Informal
- Formal

b. Determining authority/jurisdiction-

- Fire/Life Safety/Health - Fire Department
- DOE Inspected Facilities - Department of Energy
- DOD Inspected Facilities and Resources - Department of Defense
- Inland Pollution - EPA
- Coastal Pollution - USCG
- Private Island/coastal - Private organization

c. Determining appropriate actions based on classification (minor, medium, major)-

As part of a response to a spill, an On-Scene Coordinator (OSC) must evaluate the size and nature of a spill and its potential hazards. The OSC in charge also estimates the resources needed to contain the oil and clean it up, and assesses the ability of the responsible party or local authorities to handle the incident. Collectively these activities are called “assessment”. OSCs typically conduct assessment activities at the beginning of a response. The assessment determines the need for personnel, equipment, and other resources to promptly and effectively combat the spill.

d. Review Responsible Party history - The responsible party (RP) of an incident is the person, business, or entity that has been identified as owning the vessel or facility that caused the spill. The term does not imply criminal negligence. Some incidents do not have a designated responsible party; such spills are called mystery spills. However, if an incident does have an RP, in almost all cases, one must first submit a claim to the RP before submitting it to the government. The RP is liable for the costs associated with the damages resulting from the spill.

e. Review vessel and/or facility history - Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel. A facility means any structure, group of structures, equipment, or device (other than a vessel) which is used for one or more of the following purposes: exploring for, drilling for, producing, storing, handling, transferring, processing, or transporting oil. This term includes any motor vehicle, rolling stock, or pipeline used for one or more of these purposes.

- f. Identifying the five pollution elements of a violation** - A harmful quantity of oil was discharged from a vessel, or an onshore or offshore facility, into or upon a navigable water of the United States, by an identified responsible party.
- g. Notifying IO shop (Vessels & Credentialed Mariners)** - The IO shop should be notified if a reportable marine casualty occurs. Marine casualties involving public or recreational vessels are not reportable marine casualties.

2.9 Demonstrate familiarity with how to identify the location of the Geographic Response Strategies (GRS) for all classifications of pollution incidents within your AOR:

Formerly referred to as Geographic Response Plans, Geographic Response Strategies (GRS) constitute one of the most critical components of an Area Contingency Plan (ACP). GRS provide tactical booming and response strategies within the first 24-48 hours of a response. They provide tactical options for incorporation into an Incident Action Plan (IAP). ACPs should specify digital links to GRS data. In addition, validating the functionality and accuracy of the data is critical. It should be noted that a large quantity of GRS data and booming strategies may prohibit comprehensive field validation. Therefore, it is important for Area Committees to employ a risk based decision-making methodology.

2.10 Using the published GRS and the Environmental Sensitivity Index for at least two (2) locations within your AOR, explain the rationale behind the type and quantity of equipment identified in the GRS:

****AOR-specific Practical Exercise****

Geographic Response Strategies, tactics, and equipment are not prescriptive in nature, they are recommendations for initial responders. They can, and should, be adjusted to fit the current situation and environmental concerns.

2.11 Forecast the trajectory of a floating pollutant in your AOR using eGNOME and the CAMEO suite.

****AOR-specific Practical Exercise****

CAMEO (Computer-Aided Management of Emergency Operations) consists of four core programs. CAMEOfm: Can be used to enter information about local facilities with hazardous chemicals and to store emergency contact information. CAMEO Chemicals: Allows you to search for chemicals in the CAMEO chemical database, print customized reports with response recommendations, and find out how chemicals would react if they mixed. ALOHA (Areal Locations of Hazardous Atmospheres): An air dispersion model that estimates threat zones associated with hazardous chemical releases, including toxic gas clouds, fires, and explosions. MARPLOT (Mapping Application for Response,

Planning, and Local Operational Tasks): Mapping program with which you can easily view and modify maps, create objects, and display ALOHA threat zones and CAMEO facilities.

2.12 Determine if a hazardous substance release meets or exceeds the reportable quantity:

One can determine if a specific hazardous substance meets or exceeds the reportable quantity (RQ) by referencing the Federal Water Pollution Control Act (FWPCA) RQ Table found in 40 CFR 117.3 or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) RQ Table found in 40 CFR 302.4.

2.13 Demonstrate familiarity with the List of Petroleum and Non-petroleum Oils to determine if a product is considered an oil under the FWPCA and OPA 90:

Characterization of crude oils and refined petroleum products in a release situation is one of the earliest response tasks that must be undertaken. Proper classification and an understanding of the chemical and physical properties of these substances helps determine the hazards to personnel and wildlife, the effects that may be observed on adjacent shorelines or estuaries (for spills into water), and the form a response should take. Non-petroleum-based oils also pose a potential threat to human health and the environment.

2.14 Describe the different levels of HAZWOPER training:

First Responder Awareness Level is the level of training for individuals who might witness or discover a hazardous material or hazardous waste spill or release. **First Responder Operations Level** (8 hours of training required) is for personnel who respond to chemical spills or releases in a defensive manner, such as containing the spill and/or protecting people and the environment from further exposure. **Hazardous Materials Technicians** (24 hours of training) are trained to respond to a spill in an offensive manner and take steps to stop the chemical release and clean it up. **Hazardous Materials Specialists** (24 hours of training) have the same training as technicians plus specific knowledge of certain chemicals so they can provide technical support to the technicians. **Incident Commanders** (24 hours of training) are trained to assume control of the entire emergency situation.

2.15 Determine necessary Personal Protective Equipment (PPE) and investigative equipment.

PPE (Level D) includes hard hat, protective eye wear, ear plugs, reflective vest, PFD, safety boots, coveralls, gloves, and sun block. Investigative equipment most commonly consists of a sampling kit, note pad, pens, permanent marker, camera, flashlight, HAZMAT bags, paper towels, cell phone, witness statement form, and Notice of Federal Interest forms.

2.16 Demonstrate use of unit's air monitoring equipment (4-gas meter):

****AOR-specific Practical Exercise****

The majority of 4-gas monitors are designed to measure oxygen concentration (in percent O₂), flammability (in percentage of lower explosive limit), carbon monoxide concentration (in parts per million), and hydrogen sulfide (also in parts per million).

2.17 Utilize User Guide and Technical Reference Guide to explain purpose, set points and detection ranges of each sensor: Combustible (LEL), Hydrogen Sulfide (H₂S), Carbon Monoxide (CO), and Oxygen (O₂):

****Equipment-specific Practical Exercise****

The measuring range, or range of concentrations detected by the sensor, can generally be found on the specification sheet for any gas detector. This information is commonly used to determine the range or area of coverage that the monitor provides. However, most portable gas monitors are designed to be passive or diffusion-based detectors. They respond to gas that diffuses into the monitor through the sensor openings or membranes.

2.18 Utilize User Guide and Technical Reference Guide to explain purpose, set points and limitations of each alarm: Low, High, STEL, TWA, Multi, Over Limit (OL), Low Battery, Critical Low Battery, Sensor Failure, Confidence/Compliance Beep, IntelliFlash, and Heartbeat:

****Equipment-specific Practical Exercise****

Air monitoring equipment is only capable of detecting gas that is in immediate contact with the monitor. Unfortunately, that means that a responder might be working just a few feet from a deadly cloud of gas and the air currents and other conditions in the area may leave it completely undetected.

2.19 Observe completing a Bump Test and calibrate Maintenance Procedure Cards (MPC) for your unit's air monitoring equipment (4-gas meter):

****Equipment-specific Practical Exercise****

A bump test is the process that verifies performance of the gas monitor and ensures that sensors are responding to their target gas. For example, an H₂S sensor is exposed to H₂S gas to verify it can respond. Bump testing of any gas monitor will deplete the filters faster than on a unit that is not being bump tested. All 4-gas monitors have a charcoal filter on the CO sensor, and daily exposure to the H₂S in a bump test cylinder will shorten the life of the charcoal filter, thus requiring more frequent maintenance of the filter. All bump tests and calibration functions, including notes about performance, should be recorded on a Maintenance Procedure Card (MPC).

2.20 Describe when an EEBD must be taken on a response and limitations of its use:

An EEBD (Emergency Egress Breathing Device) is a short duration supplied-air device used only for escape from a compartment that has a hazardous atmosphere and shall not be used for fighting fires, entering oxygen deficient voids or tanks, or worn for firefighting.

2.21 Describe the Coast Guard's radiation detection policy, and when the PRD (Personal Radiation Device) shall be taken on a pollution response. Identify actionable levels and procedures to be followed:

Exposure to radioactive materials poses potential health risks for pollution responders. The guidance that Coast Guard personnel must follow when radioactive materials are present can be accessed through the Coast Guard Portal at: <https://cgportal2.uscg.mil/library/directives/SitePages/Home.aspx> (link can only be accessed at local Sectors, MSU's with authorization).

Personal radiation detectors (PRDs) are small electronic devices that alert the wearer to the presence of radiation for the purpose of intercepting illicit radioactive materials. Some PRDs, known as spectroscopic personal radiation detectors (SPRDs), also measure the energy spectrum of the radiation to identify the radionuclide.

PRDs and SPRDs are small, lightweight, and relatively inexpensive. They detect changes in the radiation level slightly above background with a fast response time to provide an alert for further investigation. They are worn by thousands of responders to detect and interdict the illicit movement of material that could be used in a radiological dispersal device or other radiological threat. Application scenarios include incidental monitoring concurrent with routine law enforcement foot patrols, as well as screening people passing through a checkpoint. Most are designed to be clipped to the user's belt. Using 2 SPRDs allows responders not only to detect radioactive materials, but also to potentially resolve radiation alarms by identifying the radionuclide emitting the radiation. If the radionuclide is identified, it can be classified as naturally occurring, medical, industrial, or nuclear, and its threat level assessed.

2.22 Identify the most common oil and hazardous materials transported in your zone and their associated safety hazards:

****AOR-specific Practical Exercise****

2.23 Identify potential sources and the hazards associated with the following:

- a. Benzene** - Source: gasoline, naphtha, crude oil; Hazards: inhalation hazard, carcinogen (leukemia)
- b. Carbon Dioxide** - Source: combustion, organic decay. Hazards: inhalation hazard-displaces oxygen, depression of the central nervous system, affects respiratory function, asphyxiation

- c. **Carbon Monoxide** - Source: combustion. Hazards: inhalation hazard-prevents oxygen from attaching to hemoglobin (colorless, odorless, and tasteless)
- d. **Hydrogen sulfide (H₂S)** - Source: sour crude, coke ovens, sewage. Hazards: toxic inhalation, desensitized sense of smell, death
- e. **Polycyclic aromatic hydrocarbon (PAH)** - Source: crude oil, coal, tar, petrol byproducts. Hazards: carcinogen, mutagen (birth defects)
- f. **Enriched or Lack of Oxygen** - Enriched O₂: explosion hazards. Lack of O₂: asphyxiation
- g. **Volatile Organic Compounds** - Source: often components of petroleum fuels, hydraulic fluids, paint thinners, and dry cleaning agents. Hazards: headaches, loss of coordination and nausea, damage to liver, kidneys and central nervous system

2.24 Define the following characteristics which may be considered prior to and during a spill response:

- a. **Hazard Class** - Hazard classification is the process of evaluating the full range of available scientific evidence to determine if a chemical is hazardous, as well as to identify the level of severity of the hazardous effect. When complete, the evaluation identifies the hazard class(es) and associated hazard category of the chemical.
- b. **Reactivity** - A substance's tendency to undergo chemical reaction either by itself or with other materials with the release of energy.
- c. **Physical State** - Solid, Liquid, Gas, or Plasma (Plasma - state of matter similar to gas in which a certain portion of the particles are ionized.)
- d. **Specific Gravity** - The ratio of the density of a substance to the density of a reference substance, at a specific temperature.
- e. **Vapor Density** - The ratio of the formula mass of the compound to the average formula mass of the gases in air at a specific temperature. Weight of a gas compared to the weight of air.
- f. **Paths (or routes) of Entry** - Inhalation, Injection, Ingestion, Absorption
- g. **Threshold Limit Values (TLV)/Recommended Exposure Limits (REL)/Permissible Exposure Limits (PEL)** - TLV: Maximum airborne concentration of a material to which *most* workers can be exposed during a normal daily and weekly work schedule without causing adverse effects. REL: Highest allowable airborne concentration that is not expected to injure a worker. PEL: The amount of a substance a worker can be exposed to over an 8-hour period.

- h. **Short Term Exposure Limits (STEL)** - Maximum concentration for continuous exposure for a period of 15 minutes. Maximum of 4 such periods per day with 1 hour break between each interval, provided that the TLV-TWA is not exceeded at any time.
- i. **Immediately Dangerous to Life and Health (IDLH) Concentrations** - Represents maximum airborne concentration from which one could escape within 30 minutes without any impairing symptoms or irreversible health effects. Carcinogenic effects were not considered when creating these values.
- j. **Lethal Concentration 50% (LC50)/Lethal Dose 50% (LD50)** - Concentration (respiratory route) or dose (route other than respiratory) expected to kill 50% of a test population in a single exposure in a specific period. Usually 1 hour.
- k. **Bioaccumulation** - The accumulation of a substance in a living organism resulting from numerous exposures.
- l. **Bio-oxygen Demand** - The amount of oxygen needed by aerobic decomposers to break down the organic materials in a given volume of water at a certain temperature over a specified time period. BOD is caused by organic water pollutants that are oxidized by naturally occurring micro-organisms.
- m. **Lower Explosive Limit (LEL)/Upper Explosive Limit (UEL) & Lower Flammable Limit (LFL)/Upper Flammable Limit (UFL)** - LEL/LFL: The lowest concentration of a material in air that produces an explosion, fire or that ignites when it contacts an ignition source. Anything below the LEL/LFL is too lean to be ignited. UEL/UFL: The highest concentration of a material in air that produces an explosion, fire or that ignites when it contacts an ignition source. Anything above the UEL/UFL is too rich to be ignited.
- n. **Flash Point** - Lowest temperature at which a flammable liquid gives off sufficient vapor to form an ignitable mixture with air near its surface. Will not support combustion.
- o. **Vapor Pressure** - The pressure a saturated vapor exerts above its own liquid in closed containers. The lower a substance's boiling point, the higher its vapor pressure. The higher its vapor pressure, the higher its tendency to evaporate into the air.
- p. **Boiling Point** - The temperature at which a liquid's vapor pressure equals the surrounding atmospheric pressure so that the liquid rapidly vaporizes. Flammable materials with low boiling points generally present special fire hazards. For mixtures, a range of temperatures is given.

3.0 Investigation & Response Efforts

3.1 Conducting initial assessment on scene and verify pollution report details:

- Verify amount of product from NRC.
- Verify the pollution source.
- Verify the responsible party if known.
- Verify affected/sensitive areas.

3.2 Review Pollution Response and Investigation Checklist (MER Pollution Response TTP):

****Practical Exercise****

Coast Guard Tactics, Techniques, and Procedures (TTP) associated with the U.S. Coast Guard Marine Environmental Response and Preparedness Manual, COMDTINST M16000.14A can be accessed electronically on the Coast Guard TTP Portal.

3.3 Describe the role of a Qualified Individual during a spill:

One of the primary responsibilities of the qualified individual is, upon learning of a spill or potential spill of an oil or hazardous substance, to immediately communicate with the appropriate federal official and the persons providing personnel and equipment for the spill response.

3.4 Obtain on-scene data, including:

****Practical Exercise****

During the threat of an oil spill, NOAA predicts where the oil might spread using models that show how weather, wind, tides and currents affect oil movement. But natural variability in wind, weather and water currents can change the trajectory of a spill in ways difficult to predict. To get the best forecast possible, aircraft and field observations are used to monitor the actual course and extent of an oil spill.

- a. Wind conditions** - Wind is moving air and is caused by differences in air pressure within the atmosphere. Air under high pressure moves toward areas of low pressure. The greater the difference in pressure, the faster the air flows.
- b. Tides and Currents** - NOAA explains that tides involve water moving up and down, and currents involve the movement of water back and forth. Currents are driven by several factors; tides are one of these. Wind, the shape of the land, and even water temperature are other factors that drive currents.
- c. Temperature** - Atmospheric temperature is a measure of temperature at different levels of the Earth's atmosphere. It is governed by many factors, including incoming solar radiation, humidity and altitude.

- d. **Cloud Coverage** - Cloud coverage refers to the fraction of the sky obscured by clouds when observed from a particular location.
- e. **Precipitation** – This is the convective process of rain, snow, sleet, or hail falling to the ground.

3.5 **Brief command and provide a recommended course of action:**

****Practical Exercise****

Briefings normally include, but are not limited to, location/time/date of incident; description of substance, size, color, smell, characteristics; source/RP information; weather information such as tides, current, wind, temperature, and visibility/cloud cover.

3.6 **Describe the situations in which additional assistance would be required from:**

- a. **Federal On-Scene Coordinator Representative** – If no Responsible Party, or RP fails to take action
- b. **Marine Investigations** - Criminal, reportable marine casualty
- c. **Marine Inspections** - If a vessel/facility is out of compliance
- d. **Waterways Management Division** - If vessel movement, waterway infrastructure, or waterway physical and/or environmental conditions are impacted
- e. **Coast Guard Investigative Service (CGIS)** - If arrest powers or warrant service is required
- f. **District Legal** - If a warrant is needed to enter a place/vessel
- g. **Other Agencies** - National Oceanic and Atmospheric Administration (NOAA), U.S. Fish & Wildlife Service, U.S. Army Corps of Engineers

3.7 **Illustrate and state the advantages and disadvantages of the following physical containment methods:**

- a. **Physical barriers (non-boom)** – Examples: Vessels, piers, walls, bridges. Advantages: Natural collection points. Disadvantages: May need to be decontaminated, could be sensitive areas themselves, vessels need to move
- b. **Diking/berming** - Advantages: Inexpensive, highly effective, constructed from available material (gravel and earth). Disadvantages: Slow to build, not applicable in most areas, can cause more damage than the spill

- c. **Trenching** - Advantages: Inexpensive, highly effective, can be constructed with hand tools. Disadvantages: Slow to build, not applicable in most areas, can cause more damage than the spill
- d. **Overflow and underflow dams** - Advantages: Highly effective in rivers/streams/collection points, works in debris. Disadvantages: Slow to build, not responsive to tide changes, susceptible to erosion, can cause more damage than the spill

3.8 Explain the advantages and disadvantages of the different types of booms:

- a. **Internal Foam Flotation Boom** - Constructed of PVC or polyurethane-coated fabric enclosing flexible foam, floats with tension member at the bottom. Advantages: Most common, least expensive, easy to deploy, best used for extended deployments (up to several weeks). Disadvantages: Requires sufficient storage space, difficult to handle
- b. **Pressure-inflating Boom** - Constructed of PVC, neoprene, nitrile rubber-nylon, or polyurethane-coated material, with either segmented or continuous, manually-inflated air chambers. Advantages: Conforms well to waves, can be used in up to 6ft seas, excellent for handling and storage (can be compressed for storage), well suited for vessels or facilities with limited storage. Disadvantages: Slow to deploy and retrieve, up to several hours may be required to inflate, fabric may be punctured resulting in loss of buoyancy, needs to be monitored and tended frequently to ensure flotation is maintained, not suitable for deployments over one week in duration
- c. **Self-inflating Boom** - Constructed of PVC or polyurethane-coated material with air chambers that are normally compressed when stored and inflate through air-intake valves when deployed. Advantages: Excellent for handling and storage (can be compressed for storage), quickest to deploy, conforms well to waves, well suited for vessels or facilities with limited storage. Disadvantages: Fabric may be punctured resulting in loss of buoyancy, internal expansion mechanisms may have long term problems such as corrosion and collapse, needs to be monitored and tended frequently to ensure flotation is maintained
- d. **Fence Boom** - Constructed of a rigid or semi-rigid fabric with flotation provided by foam blocks, bolted-on blocks, or outrigger floats, providing a vertically rigid and horizontally flexible fence. Advantages: Durability ranges from low to high tensile strength depending on intended application, provides effective long-term (several weeks or more) low maintenance containment. Disadvantages: Not suited for shallow water, external floats on some models may create additional water disturbance resulting in increased oil entrainment or splash over, requires sufficient storage

3.9 Illustrate and explain the advantages and disadvantages of the different types of booming strategies:

- a. **Exclusion** - Boom placed to exclude oil from an area. Advantages: Protects environmentally sensitive areas, approaching oil is deflected or contained by boom. Disadvantages: Not recommended for use in open water, requires area to be completely boomed-off, constant monitoring is required, minor disturbance to substrate at shoreline anchor points
- b. **Diversion** - Description: Boom placement to move oil away from a location to be protected or simply to change the course of the slick. Advantage: Used in current of up to 3 knots, oil is diverted away from the sensitive area to a less sensitive location for recovery. Disadvantages: Minor disturbance to substrate at shoreline anchor points, diverted oil may cause heavy shoreline oil contamination downwind and downstream
- c. **Collection** - Boom used to create a collection point. Advantages: Creates a collection point, redirect the spilled oil from one direction of travel to a specific site for recovery, used in currents of up to 3 knots. Disadvantages: Should not be used in an open water environment, should not be used in still water / under calm conditions, oil will contaminate shoreline at recovery points
- d. **Containment** - Boom usually placed around the source to contain it in one spot. Advantages: Minimizing spread of pollutants and impacts to the environment, boom angles can be used to deflect debris and concentrate oil into a suitable skimming pocket. Disadvantage: Containment boom systems may be difficult to deploy and maintain in an open water environment due to high probability of fixed boom failure and the difficulty of anchoring in this environment

3.10 Illustrate and explain the mode of operation of the following skimmer types:

- a. **Weir** - Uses gravity to drain oil off the surface. Oil flows over a simple weir lip and is collected in a sump; water is discharged through ports located below the weir, connected to an external pumping system. Best with low and medium viscosity oil, lower sea state and low debris.
- b. **Suction** - Similar to a weir skimmer: Uses a suction head connected to a vacuum truck and suction pump. Best with low and medium viscosity oil, but can tolerate higher viscosity as well.
- c. **Submersion** - Belt-type skimmer: As the skimmer advances, oil is forced downward by a plane or moving belt; once past the belt, the buoyancy of the oil causes it to rise-up into a collection well from which it is pumped to onboard storage; water leaves the collection well through a flow control gate. Works best on medium viscosity oils.
- d. **Vortex/Centrifugal** - Creates a vortex in center of the skimmer, pulling oil into the vortex where it piles-up and is removed through an exterior suction system while

water is evacuated through the bottom. The ability of the oil to flow affects the skimmer's operations.

- e. **Rope mop skimmer** - Single or multiple polyethylene fiber ropes are pulled through a slick by wringer rollers; the rope mop is wrung and then continuously returned to the slick, repeating the cycle; recovered oil is collected below the wringer assembly or pumped via a suction hose. Works best on medium viscosity oils.
- f. **Belt skimmer** – A belt skimmer is a continuous belt-type of oil skimmer which works on the differences in specific gravity and the surface tension between oil and water to remove spilled oils from the surface of the water.
- g. **Drum Skimmer** - Drum skimmers are versatile equipment used to recover spilled oil from the surface of water. Their lightweight construction, high recovery rates and efficiency make them suitable for most oil spill contexts, even in water as shallow as 75mm. A drum skimmer can recover about 95 percent of oil, with only 5 percent entrained water.
- h. **Disc Skimmer** – The disc skimmer head floats on water and removes lubricants, fuels, vegetable oils and other spills of low and medium viscosity.

3.11 Explain the effects the following factors will have on skimmer performance:

- a. **Sea State** - If water is too choppy, most weir and floating skimmers lose performance; oil recovery mixture becomes too watery.
- b. **Water Depth** - Certain weir & drum/disc skimmers need a minimum depth to operate; shallow situations limit the types of skimmers applicable for use.
- c. **Debris** - Many skimmers clog and become ineffective when working in debris.
- d. **Oil thickness** - Different skimmers are more effective in thicker oil; if too thin, oil is unrecoverable (gasoline); right skimmer must be selected for the product.
- e. **Oil viscosity** - The ability of the oil to flow affects the skimmers' operations; high viscosity clogs skimmers; skimmers may not be able to pick-up low viscosity oil.

3.12 Define adsorbent and absorbent and explain the difference between the two terms:

- a. **Absorbent:** Sucks-up material like a sponge; incorporates a liquid into a solid substance, as by capillary, osmotic, solvent, or chemical action.
- b. **Adsorbent:** Attracts and retains gas or liquid molecules on the surface of another material. Insoluble material coated by a liquid on its surface pores and capillaries without the solid swelling of more than 50% excess liquid.

3.13 Define and identify the following sorbent types:

- a. Organic** - Examples: Peat moss, straw, sawdust, feathers; generally absorb 5x - 10x their weight; safe in environmentally sensitive areas.
- b. Inorganic** - Examples: Volcanic ash, vermiculite, perlite; absorb 2x – 6x their weight; inexpensive, but sometimes hazardous to apply.
- c. Synthetic** - Examples: Polyurethane, polystyrene, rubber, polyester foam; absorb up to 25x their weight; not biodegradable, but inert; high surface area, come in various forms/sizes.

3.14 Identify dimensions and appropriate uses for the following forms of sorbents:

- a. Boom** - Sorbent material, cylindrically shaped and deployed like a boom, some models have ballasted skirt and flotation core, sausage shaped & deployed like boom.
- b. Pad, roll, and blanket** - Sheets of sorbent material available in various configurations, e.g., melt-blown, sonic-bonded, laminated and air-laid.
- c. Sock, pillow, and sweep** - Sorbent material enclosed in a small sack, easily thrown in confined areas, sweeps are long sheets reinforced with roped to be pulled over oily areas.
- d. Snare/pom-pom** - Bunches of oleophilic strips, can be strung together on a rope as a snare boom, used on rocky and stony areas and inner-tidal flats; best used for highly viscous oils.
- e. Particulate** - Examples: Saw dust, cat litter, cellulose; can be used on rocky and porous areas or otherwise hard to reach.

3.15 Explain why CG personnel shall not operate non-CG owned equipment (i.e., vessel's or facility's shut-off valves, hose nozzles, etc.):

It is a safety hazard. Coast Guard personnel may not be properly trained or may lack familiarization with the equipment. The condition of the equipment is unknown. It presents a liability issue if the equipment is damaged by Coast Guard personnel or operation results in an injury.

3.16 Explain the content of a Site Safety Plan:

The safety and health plan, which must be kept on site, shall address the safety and health hazards of each phase of site operation and include the requirements and procedures for employee protection. The site safety and health plan, at a minimum, shall address the following:

- A safety and health risk or hazard analysis for each site task and operation
- Employee training assignments
- Personal protective equipment to be used by employees for each of the site tasks and operations
- Medical surveillance requirements
- Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment
- Site control measures
- Decontamination procedures
- An emergency response plan, including the necessary PPE and other equipment
- Confined space entry procedures
- A spill containment program

3.17 Explain the applicability of a Site Safety Plan during a spill:

Applies when there has been release/discharge, and Phase III (containment, countermeasures, cleanup and disposal) begins. The Site Safety Plan applies to all responders involved in hazardous waste operations unless employer can demonstrate that operation does not involve employee exposure to safety or health hazards.

3.18 Assist in conducting a shoreline cleanup assessment:

Refer to NOAA Shoreline Assessment Job Aid

3.19 Complete an ICS 201 (Incident Briefing Form):

Provides the Incident (Unified) Command and staff with basic information regarding the incident and the resources currently allocated. It also acts as the permanent record of the initial response. Typically required on all working incidents. Normally started upon incident alert.

3.20 Describe the following types of evidence and give examples:

- Documentation** - Pollution Responder notes, sketches, diagrams, witness statements, photographs, video recording, vessel/facility logs, certificates, plans.

- b. Physical Oil Samples** - Physical evidence: defective equipment or parts, connectors, seals, linkages, etc. Oil samples: from the scene, suspected source, clean water control sample.

3.21 Demonstrate the handling and processing procedures that are unique to each of the following:

- a. Difference between civil and criminal evidence** - Civil evidence results in monetary fine only. Preponderance (majority) of evidence rules. Criminal evidence could result in jail time; higher burden of proof, beyond reasonable doubt, includes handling standards.
- b. Oil Samples** - Oil samples collected by field units are submitted to the Marine Safety Laboratory (MSL) to determine if a relationship exists between an oil spill sample and a suspected source sample.
- c. Witness Statements** - Statements should be signed by the writer and dated. In the case of Coast Guard personnel, the signature of the person writing the statement should be followed by the printed name, rank / rate where applicable, and unit of the person. The date should be the date the statement is prepared. Statements from Charged Parties should also be signed and dated, with printed name, position when relevant, and employer when relevant. A statement submitted by a witness typically has more value than a summary of an interview with a witness. Witness statements are documented on a U.S. Coast Guard Witness/Investigator Form.
- d. Photographs and/or video** - Photographs should not be included in a case file unless they are attached to a sheet of paper and are properly labeled. When labeling a photograph, include a description of the subject of the photograph, date and time taken, place taken, and who took the photograph. Video: When practicable, those parts of any CD or DVD that are considered necessary as evidence in the case file might be printed as still pictures and placed in the case file in lieu of submitting digital media.
- e. Diagrams and charts, Vessel and/or Facility Logs** - It is necessary for the originating Coast Guard unit to collect all evidence relevant to a violation and include it in the case file to provide the Coast Guard Hearing Officer and the Charged Party with a fair picture of what occurred. Such evidence supports the narrative summaries found on the Enforcement Summary and ASR. Evidence includes documents, statements, diagrams, charts and logs that support an alleged violation. It also

includes documents, statements, etc. that were obtained during the boarding, inspection, or investigation that do not support, or tend to refute, an alleged violation.

3.22 Describe Marine Safety Laboratory oil sample analysis process:

Oil sample preparation, testing and storage are conducted in accordance with American Society for Testing and Materials (ASTM) consensus standards. A rigorous laboratory quality assurance program monitors both instrument performance and sample preparation to ensure that data are accurate and reproducible. All samples in each case are initially analyzed to determine the class of petroleum product. Samples can be excluded from further analysis based on results from the initial analysis. Further analyses are performed on samples which are potential matches to the source of the oil. The Supervisor of Analysis interprets the data from all test methods performed and draws conclusions concerning whether certain spilled oil and suspected source samples were derived from the same chemical source. Data interpretation in oil spill source identification is different from typical chemical analyses because the chemical properties of spilled oil are altered when oil is introduced into the environment.

3.23 Assist in preparation of an oil sample for transmittal, and properly label and package it for shipment to the Marine Safety Laboratory:

****Practical Exercise****

Samples are subject to weathering even after they are collected, so all samples should be sent to MSL as soon as possible for optimum results. Samples that cannot be sent to MSL just after collection should be stored in a cool, dark place to minimize any degradation due to sunlight, heat, or microbial activity. Coolers with cold packs may be used for temporary storage. Optimal conditions for storing oil samples at the unit are in an explosion-proof lockable refrigerator maintained at 40–42 °F. Do not freeze the samples.

3.24 List the types of samples necessary to provide the Marine Safety Laboratory with sufficient physical evidence to perform “fingerprint” identification for comparison:

MSL uses the OIS to characterize the unique chemical fingerprints of petroleum oil samples and to compare the samples to each other. An Oil Sample Analysis Report is prepared for each case. This report provides chemical evidence to affix oil pollution responsibility, assess penalties and recover federal pollution funds expended during a spill event. Samples collected by field units are submitted to MSL to determine if a relationship exists between the spilled oil sample(s) and the suspected source sample(s).

3.25 Define confined spaces and the associated hazards. Describe the Coast Guard policy concerning confined space entry:

A confined space is any space which, by design, has a limited opening for entry and exit (one way in and out), unfavorable ventilation which could contain or produce dangerous air contaminants, and is not intended for continuous occupancy. Confined space hazards include Immediately Dangerous to Life and Health (IDLH) atmospheres, oxygen deficient

atmospheres (containing less than 19.5% oxygen), toxic vapors and gases which exceed their PEL (Permissible Exposure Limit), and flammable or combustible atmospheres in which vapors or gases are equal to or greater than 10% LEL (Lower Explosive limit).

Auxiliaries are not allowed to enter confined spaces.

3.26 Describe the occasions and policies for entry onto private property:

The OSC generally has the authority to enter private property without a warrant for the purpose of carrying out response activities and related investigations. The owner's permission shall **ALWAYS** be sought prior to entry. On occasion entry without permission may be necessary if the situation is urgent. It is recommended that the condition of the property be documented prior to entry (photo) and local law enforcement be present. **NOTE:** Once response activities have been completed and the emergency situation no longer exists, it may still be necessary to obtain information to determine culpability or to prove liability. Use common sense; entry onto private property under these circumstances may violate the constitutional guarantee against unreasonable searches and seizures. In this case private property should not be entered without the owner present or the owner's permission until the district commander has been contacted for advice and assistance.

3.27 Interview witnesses and prepare a written statement based on a verbal interview and how it is attached in MISLE:

****Practical Exercise****

Ask witnesses to describe exactly what they saw to the best of their own ability. Do not push your opinion on them. Have them sign when they are finished. Attach document in MISLE under evidence.

3.28 Describe how to record a timeline and capture the actions, conditions, and events in MISLE:

****Practical Exercise****

Coast Guard personnel use MISLE to schedule and record operational activities such as vessel boardings, facility inspections, marine casualty investigations, pollution response actions, law enforcement actions, and search and rescue operations. Coast Guard personnel enter data on response actions in real-time as the incident unfolds. Coast Guard personnel enter most data on boardings, inspections, and investigations into MISLE after completion of the action. MISLE is also used to record and generate official documents such as Certificates of Inspection and Certificates of Documentation for vessels. MISLE uses historical data on vessels, facilities, people, organizations, and waterways to identify risks and target operational activities accordingly. In addition, Coast Guard unit and program managers use MISLE data to evaluate the effectiveness of operations and the use of Coast Guard resources. MISLE is available to authorized Coast Guard personnel only, via the Coast Guard intranet.

3.29 Explain the purpose and use of the following:

- a. **Captain of the Port Order** - An order issued by the District Commander or COTP to a vessel or facility under the authority of the Ports, Waterways, and Safety Act for a specific situation or hazard. Issued to restrict or stop operations, require specific corrective measures to be taken, deny vessel entry into the port, or detain a vessel in port.
- b. **Administrative Order (response document)** - A specific directive from the FOSC requiring detailed actions or corrective measures to be taken by the responsible party to clean up a pollutant or threatened discharge/ release of a pollutant. Very specific; indicates exactly what needs to be done and has a deadline. Can be verbal but must be followed up in writing.

4.0 Complete Incident Investigation Activity

4.1 Review the creation of a Notification, Incident Management, Preliminary Investigation, and an Incident Investigation Activity (IIA) in MISLE:

**** Practical Exercise****

MISLE uses this information to support daily Coast Guard marine safety, security, environmental protection, and law enforcement operations and is analyzed to support planning and resource management. Notifications identify new incidents for action by field units. Notifications are communications to the Coast Guard, from external or internal sources, regarding events that will initiate Coast Guard actions.

Investigations document incident causes and help identify needed changes to regulations and policies. For example, information collected during investigations of vessel groundings and collisions will be analyzed to see if there are common causes, geographic trends and causal factors that can be addressed through waterway improvements or regulation. Waterway improvements would include changes to aids to navigation or dredging of channels. Regulations might require new or improved equipment (such as radar for collision avoidance), training or oversight (inspections or certifications).

Enforcement activities document actions taken against vessels, facilities, persons and organizations for violations of a law, regulation or treaty. Enforcement actions include civil penalties, criminal prosecution and suspension or revocation actions against mariner licenses. The information collected in MISLE is used to build a case file used by prosecutors, hearing officers and judges to render a decision and impose sanctions. Criminal prosecution cases are usually transferred to the Department of Justice for prosecution.

4.2 Prepare an Environmental Response Investigator Statement:

**** Practical Exercise ****

The Coast Guard completes investigations, enforcement documentation and casework to identify Responsible Parties and take appropriate enforcement action for violations of the FWPCA.

4.3 Explain the role of the Investigations Division/Investigating Officer when marine casualties are involved in a pollution response and when discharge/releases occur from commercial vessels, as well as the pollution responder's role in such investigations.

The primary mission of Coast Guard Investigations is to investigate marine casualties to determine their root cause(s) and use the information gathered in that process to prevent further casualties. In addition, the Investigations Division investigates reports of negligence, misconduct, or other violations of federal laws or regulations that occur in conjunction with the operation of commercial vessels. The division also pursues enforcement action to prevent future deficiencies and non-compliance by issuing Letters of Warning and Notices of Violations, initiating Administrative Civil Penalty hearings, initiating suspension and revocation proceedings against Coast Guard issued credentials, and representing the Coast Guard at suspension and revocation hearings.

5.0 Recommend Enforcement Actions

5.1 Describe the elements of the following:

- a. **Civil Penalty Violation** - The Civil Penalty process is used when the issuance of a warning or NOV is not appropriate. Violations of FWPCA and CERCLA could be civil penalties, as could 3+ violations in the past 12 months, or if a spill is over 1,000 gallons. Civil monetary penalty description: \$15,000 max per violation, not to exceed \$40,000 per case. Adjudication is by a Coast Guard Hearing Officer (for a Class I violation).
- b. **‘Failure to Notify’ Violation** - The master, person in charge, owner, charterer, manager, or operator of a vessel involved in an incident must fully report the particulars of the incident without delay to the fullest extent possible. Any person who fails to notify the appropriate agency of the United States Government immediately of a discharge is, upon conviction, fined in accordance with Title 18, U.S. Code, or imprisoned for not more than 5 years, or both.
- c. **Class II Civil Penalty** - Civil monetary penalty, \$15,000 max per day. Not to exceed a total of \$190,000. Adjudicated by an Administrative Law Judge. Requires a formal hearing. Must show Preponderance of Evidence (51%).
- d. **Criminal Violation** - Discretion of the District Commander to press charges. Responsible Party shows negligence or deliberate misconduct. Must be proven beyond a *reasonable doubt*. Adjudication by a Federal District Court Judge.

- e. **Refuse Act Violation** - Any discharging of solid waste into a navigable waterway of the United States. Primarily enforced by the Army Corp of Engineers but jointly enforced by the Coast Guard. The purpose of the Act was to prevent the obstruction of navigation and the interference with waterway development.
- f. **MARPOL Violation** - Violations include discharging any oil into the ocean or oily water separator (15PPM+), discharge of noxious liquids, and failure to up-keep the cargo record book.
- g. **Notice of Violation (NOV or ticket)** - A Notice of Violation is a Civil Penalty. Total of all penalty amounts cannot exceed \$10,000. Given to the Responsible Party if a LOW has been issued within the last 12 months. Use NOV User's Guide to determine penalty amounts.

5.2 Define each of the following penalty procedures and list the circumstances in which each might be applied:

- a. **Letter of Warning** - A Letter of Warning is a formal, written notice of an apparent violation for which no monetary or other sanction is appropriate. In all cases, the warning will be considered part of the relevant safety record for use in future Coast Guard activities. Issued in lieu of a Civil Penalty (NOV). Commercial Entity – 25 gallons or less. Private Entity - 50 gallons or less.
- b. **Notice of Violation** - A Notice of Violation (NOV) is a formal, written notice of an apparent violation for which a predetermined monetary penalty is appropriate. In all cases, the prosecution will be considered part of the relevant safety record for use in future Coast Guard activities. Commercial Entity - 25 gallons+, Private Entity - 50 gallons+, issued for a spill less than/equal to 1,000 gallons.
- c. **Class I Civil Penalty** - The Class I Administrative Civil Penalty process is used when the issuance of a letter of warning or NOV is not appropriate (3+ violations in the past 12 months, 1 LOW + 2 NOV or 3 NOV, or if spill is over 1,000 gallons).
- d. **Class II Civil Penalty** - The Class II Administrative Civil Penalty process is used only for certain violations of the FWPCA and CERCLA. It may be pursued in egregious and willful violations of these statutes where the maximum penalty associated with a Class I Administrative Civil Penalty is deemed insufficient, or in cases where the Coast Guard desires to require the responsible party to create a compliance program. Used when Class I is not enough; more serious violation.
- e. **Judicial Civil Penalty** - The Judicial Civil Penalty process is the presentation of all relevant evidence and facts surrounding a specific offense to Federal District Court Judge for adjudication. A Judicial Civil Penalty may be pursued for a wide variety of violations, but is usually reserved for egregious and willful violations where the maximum penalties associated with an Administrative Civil Penalty is deemed insufficient to meet enforcement goals. Assessed by a Federal District Court Judge in lieu of USCG penalties.

- 5.3 State when the charged party should be the individual versus the organization:** A charged party should be an individual when the individual acts outside the scope of their organizational policies and procedures.
- 5.4 Describe the Purpose of a Letter of Undertaking:** A LOU is a promise given on behalf of an entity capable of making sufficient assets available to meet the maximum penalty, which may be assessed for the violation charged. A LOU is required for civil and criminal penalties and must be received by the COTP prior to the vessel's departure.
- a. When would this be issued?** - A Letter of Undertaking is used to secure funds from the responsible party to pay for cleanup operations.
 - b. What are the requirements for issuing?** - A Letter of Undertaking is used to secure funds from the responsible party to pay for cleanup operations.
 - c. Issuance authority?** - The signer of the LOU must have the authority to bind the entity guaranteeing the LOU. Authority can be given by the signer's official title as a corporate officer of the entity, a letter or fax from the principal (insurer) to the agent, or a power of attorney granted to the signer.
- 5.5 Describe the purpose of a Surety Bond:** - A Surety Bond is evidence of financial responsibility by the Responsible Party to pay for the removal/cleanup operation/efforts. Surety is a written statement from the vessel's insurance company or agent stating that if the maximum penalty amount for the violation is given, the funding is available.
- a. When would this be issued?** - A Surety Bond is used to secure funds from the responsible party when a penalty is assessed.
 - b. What are the requirements for issuing?** - An applicant must file with the Director of the National Pollution Funds Center as evidence of financial responsibility. A guarantor may file the evidence of financial responsibility on behalf of the applicant directly with the Director, NPFC.
 - c. Issuance authority?** - By filing with the Director, NPFC, a Surety Bond Guaranty is to be issued under the provisions of 33 CFR 138 Subpart A.