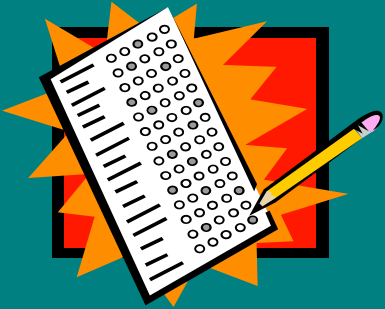


US EPA ARCHIVE DOCUMENT

# Government-Initiated Unannounced Exercises (GIUE) under the Facility Response Plan (FRP) rule



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# Presentation Objectives

- At the end of this course, students should have a better understanding of:
  - FRP-related inspections and exercises;
  - Drill and exercise requirements under the FRP regulation (§112.21) and PREP guidelines;
  - Purpose of the GIUE and how it relates to NCP, ACP, and other preparedness activities conducted by industry, U.S. EPA, and U.S. Coast Guard;
  - Steps in planning and performing a GIUE;
  - GIUE evaluation criteria and implications; and
  - Common problems observed during performance of a GIUE.

# Presentation Overview

## I. Introduction

Why exercise? Authority for Conducting Drills  
Facility Response Plan Regulation & Preparedness  
Framework

## II. FRP Training and Exercise Requirements

## III. Implementing a GIUE

## IV. Evaluating GIUE Performance

# Why Exercise?

The effectiveness of spill response impacts the resulting environmental damage and cleanup cost.

- 2007 GAO Report on Oil Spill Costs:
  - “The longer it takes to assemble and conduct the spill response, the more likely it is that the oil will move with changing tides and currents and affect a greater area, which can increase costs.”
  - “The level of experience of those involved in the incident command is critical to the effectiveness of spill response, and they can greatly affect spill costs.”



# Authority for Conducting Drills/Exercises

- Oil Pollution Act of 1990
  - 311(j)(7): Tests of Facility Removal Capability
  - 311(j)(6)(A): Equipment Inspections
- National Contingency Plan (NCP)
  - Area Contingency Plan (ACP)
  - Facility Response Plan (FRP) regulation requires facility response drills/exercises
    - Program must follow **National Preparedness for Response Exercise Program (PREP)** (or alternative format approved by the Regional Administrator) [112.21(c)]
- National Response Framework

# Authority for Conducting Drills/Exercises

- National Preparedness for Response Exercise Program (PREP)
  - Requires unannounced exercise by EPA, U.S. Coast Guard (USCG), Minerals Management Services (MMS), and Pipeline and Hazardous Materials Safety Administration (PHMSA (listed as RSPA))

# Authority for Conducting Drills/Exercises

- EPA Regulated Facilities (40 CFR part 112)
  - Non-Transportation-Related Onshore Facilities and Certain Offshore Facilities
- USCG Regulated Facilities (33 CFR parts 154 and 155)
  - Vessels and Marine-Transportation-Related Facilities
- RSPA (a.k.a. PHMSA) Regulated Facilities (49 CFR part 194)
  - Pipelines
- MMS Regulated Facilities (30 CFR part 254)
  - Offshore Facilities (i.e., located seaward of the coast line)
- Complexes-Subject to Two or More Agencies
  - Agencies must coordinate efforts to avoid repeating exercises



# Oil Pollution Act of 1990 and Clean Water Act

- Section 311(j)(5) of CWA, amended by OPA 1990
- A Facility Response Plan shall:
  - (i) be consistent with the requirements of the National Contingency Plan and Area Contingency Plans;
  - (ii) identify the qualified individual having full authority to implement removal actions, and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment pursuant to clause (iii);

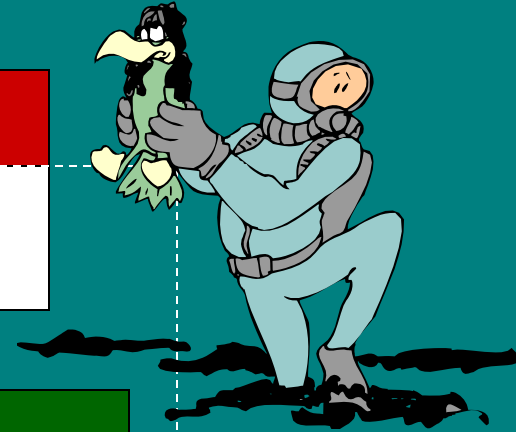
# Oil Pollution Act of 1990 and Clean Water Act (continued)

- (iii) identify, and ensure by contract or other means approved by the President the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge;
- (iv) describe the training, equipment testing, periodic unannounced drills, and response actions of persons on the vessel or at the facility, to be carried out under the plan to ensure the safety of the vessel or facility and to mitigate or prevent the discharge, or the substantial threat of a discharge;
- (v) be updated periodically; and
- (vi) be resubmitted for approval of each significant change.

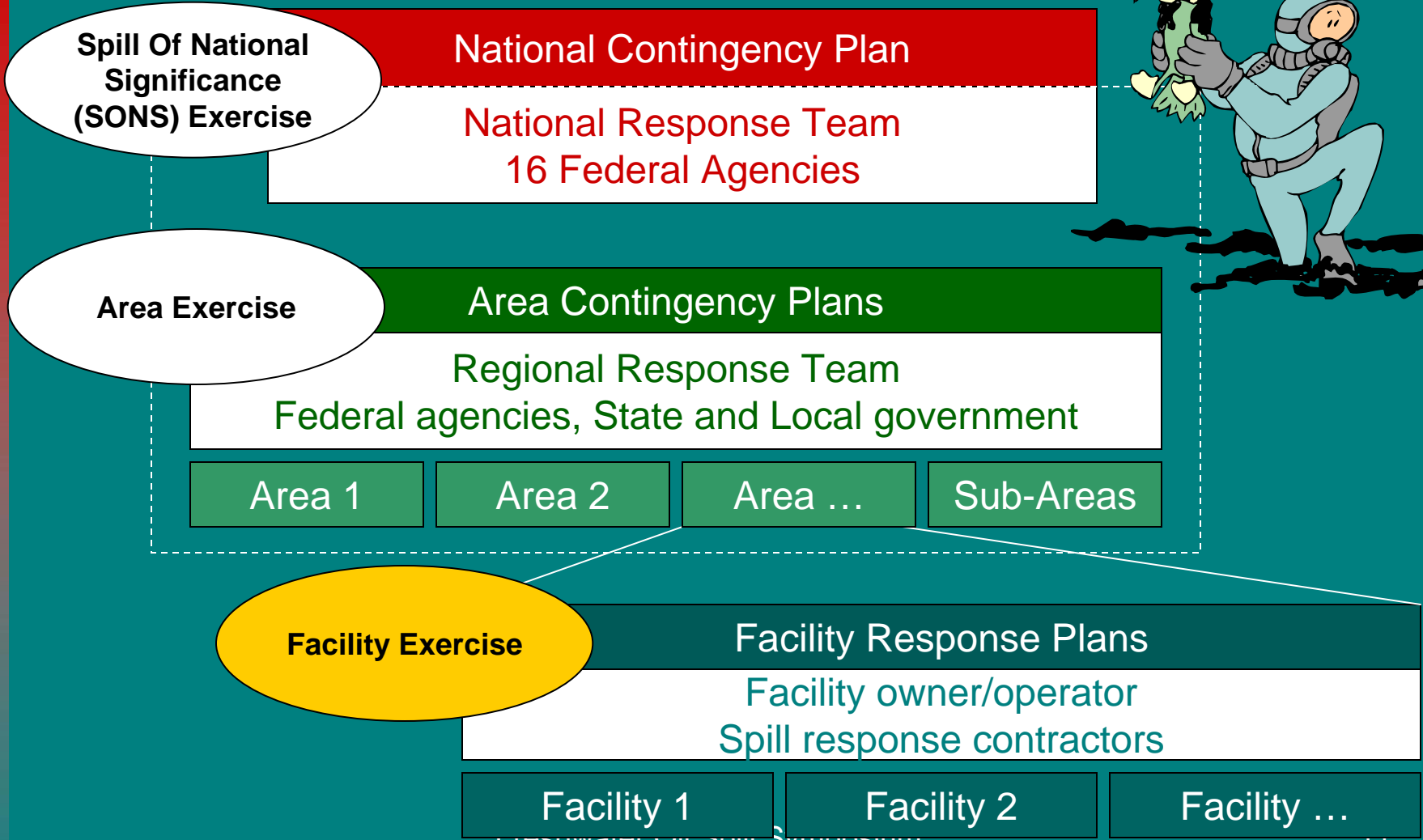
# EPA's FRP Regulation

- 40 CFR part 112, Sections 112.20 and 112.21, Appendices C - F
- §112.20 - Requirements to prepare plans to respond to worst-case discharge of oil
  - Substantial harm criteria include:
    - 42,000 gallons or more in oil storage capacity and transfers oil over water to/from vessel
    - 1 million gallons or greater in oil storage capacity, and
      - Inadequate secondary containment; or
      - Could impact fish and wildlife or sensitive environment; or
      - Could shut down a public drinking water intake; or
      - Reportable discharge of 10,000 gallons or more in last 5 years
    - Other factors as determined by Regional Administrator
  - EPA must approve the plans for significant and substantial harm facilities.

# Spill Contingency Planning Framework



National  
Regional  
Local / Facility



# FRP-related Inspection Activities

- QI Interview
  - Evaluate overall knowledge of the person(s) identified as QI or key personnel in the Plan and who would be charged with directing/performing response actions.
- Field inspection
  - Verify the implementation of the preparedness measures described in the FRP.
- Government-Initiated Unannounced Exercise
  - Verify that facility is able to activate its plan and respond to a simulated discharge incident.



# QI Interview

- Verify that QI understands responsibilities and is the person responsible for implementing the facility's FRP.
- Discussion topics, regarding the handling of a worst-case discharge:
  - Discharge discovery and assessment
  - Notifications and mitigation measures
  - Temporary storage of recovered product and contaminated materials
  - Treatment and disposal of contaminated materials
  - Roles and responsibilities of response team and other facility or contractor employees
  - Incident command and control
  - Training, exercise, and evaluation

# Field Inspection

- Hazard evaluation and vulnerability analysis
  - Are assumptions reasonable given facility conditions? Review discharge history, areas where discharges could occur, anticipated spill pathway (e.g., storm drains)
  - Are there vulnerable sites not considered in the plan (e.g., water intakes, residential or recreational areas, wetlands)?
- Worst-case discharge scenario and planned response actions
  - Are assumptions regarding volume and failure mode reasonable? Confirm tankage and secondary containment
  - Have there been changes in the facility characteristics not reflected in the current version of the Plan?

# Field Inspection *(continued)*

- Spill response equipment
  - Type and amount available at the facility? Adequate quantities? Readily accessible? In working condition?
  - Contract with Oil Spill Removal Organization? Is it current?
- Discharge detection equipment and procedures
  - Review logs and records of equipment inspection, assess employee knowledge of required procedures
- Security measures
  - Implementation of emergency cut-offs, fencing, locking of valves, and lighting, as required under the SPCC rule.



# Facility Drills and Exercises

- Use the **National Preparedness and Response Exercise Program (PREP)** guidelines or equivalent
  - Combination of internal and external exercises
  - Range of exercises covering all aspects of the FRP over a 3-year cycle
  - Satisfies all OPA-mandated Federal Oil Pollution Response Exercise Requirements
  - All alternative programs must be approved by the Regional Administrator prior to implementation
- Facility receives credit for Area or Facility-specific exercises for actual response to a spill if:
  - ✔ Plan was utilized for response
  - ✔ PREP objectives were met
  - ✔ The response was properly evaluated, documented, and self-certified

# Presentation Overview

I. Introduction

**II. FRP Training and Exercise Requirements**

FRP content relevant to exercise and drill

Spill response planning levels and scenarios

III. Implementing a GIUE

IV. Evaluating GIUE Performance

# FRP Training and Exercise Requirements

- §112.21 - Requirements for training and program of drills/exercises
  - Training (§112.21(b))
    - Train personnel involved in oil spill response activities
    - Recommendation that training program be based on USCG's Training Elements for Oil Spill Response
    - Alternative program is acceptable, subject to approval by the Regional Administrator
  - Facility Response Drills/Exercises (§112.21(c))
    - Develop a program of drills/exercises, including evaluation procedures
    - Program that follows National Preparedness for Response Exercise Program (PREP) will satisfy the requirement
    - Alternative program is acceptable, subject to approval by the Regional Administrator

# FRP Training and Exercise Requirements (continued)

- Purpose of Exercise: Demonstrate timely, properly conducted response that follows the FRP with adequate equipment for a small discharge.
- Exercise Type:
  - Internal Exercise: Initiated by facility owner/operator
  - External Exercise: Government-initiated (e.g., GIUE)

# Relevant FRP Content

1. Emergency Response Action Plan (ERAP)
2. Facility Information
3. Information about Emergency Response
4. Hazard Evaluation
- 5. *Response Planning Levels***
6. Discharge Detection Systems
7. Plan Implementation
- 8. *Self-Inspection, Drills/Exercises, and Response Training***
9. Diagrams
10. Security Systems
11. Response Plan Cover Sheet



# Self-Inspection, Drills/Exercises, and Response Training

- Use the **National Preparedness and Response Exercise Program (PREP)** guidelines or equivalent
  - Combination of internal and external exercises
  - Range of exercises covering all aspects of the FRP over a 3-year cycle
  - Satisfies all OPA-mandated Federal Oil Pollution Response Exercise Requirements
  - All alternative programs must be approved by the Regional Administrator prior to implementation
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  - ✔ Plan was utilized for response
  - ✔ PREP objectives were met
  - ✔ The response was properly evaluated, documented, and self-certified

# PREP Exercise Components

Element	Frequency*	Initiating Authority	Notes
QI Notification Exercises	Quarterly	Facility owner or operator	
Emergency Procedures Exercises	Quarterly	Facility owner or operator	<i>Optional: can be used by facilities as an unannounced exercise.</i>
Spill Management Team Tabletop Exercise	Annually	Facility owner or operator	At least one exercise every 3 years must involve a worst-case discharge scenario.
Equipment Deployment Exercises	Semiannually	Facility owner or operator	If OSRO-owned equipment is identified in the Plan, the OSRO equipment must also be deployed and operated. OSRO must provide documentation to facility owner or operator.
<b>Government-Initiated Unannounced Exercises</b>	<b>Triennially</b>	<b>EPA, RSPA, USCG</b>	<b>If successfully completed, the facility can only be subject to a GIUE once every 3 years.</b>

\* At least one exercise per year must be unannounced.

# FRP Spill Response Planning Levels



Planning scenario	Oil volume
Small	2,100 gallons or less
Medium	Greater than 2,100 gallons but less than or equal to 36,000 gallons or 10 percent of largest tank at facility, whichever is less
Worst Case	Calculated based on type of facility, number of containers, whether secondary containment is adequate, and capacity of largest aboveground storage tank (AST). Often the capacity of the largest AST.



# Scenario Description

- For each scenario, address factors that affect response efforts, including:
  - Spill volume
  - Material discharged
  - Location of discharged material
  - Direction of spill pathway
  - Proximity to wells, waterways, drinking water intakes, fish and wildlife, and sensitive environments
  - Weather or aquatic conditions
  - Likelihood that the discharge will travel offsite
  - Probability of a chain reaction of failures
  - Available remediation equipment
  - Circumstances and contributing factors (e.g. loading/unloading, facility maintenance, facility piping, pumping stations and pumps, bulk storage containers, vehicle refueling, age and condition of facility and components)

# Response Capability: General

- Demonstrate availability of response personnel and equipment necessary to respond within the specified times
- Resources may be ensured by “contract or other approved means”
  - Written contractual agreement with Oil Spill Removal Organization (OSRO)
  - Written certification by the owner or operator that the necessary personnel and equipment are available to respond to a discharge within appropriate response times
  - Active membership in local or Regional cooperative
  - Other arrangement approved by the RA upon request by the owner or operator
- Spill Response Planning Tiers are specified in Appendix E to 40 CFR part 112

# Response Capability: Small Discharge

Appendix E, Section 3.3:

**The response resources shall, *as appropriate*, include:**

Equipment	Capacity	Timeline	Citation
Containment Boom*	<b>1,000 feet</b> <i>or</i> Twice the length of the largest vessel that regularly conducts oil transfers to or from the facility (whichever is greater)	<u>Means of deploying within 1 hour</u> of the discovery of an oil discharge	Appendix E, Section 3.3.1
Oil Recovery Devices	Effective daily recovery capacity equal to the <b>amount of oil discharged in a small discharge</b> or greater	<u>Available at the facility within 2 hours</u> of the discovery of an oil discharge	Appendix E, Section 3.3.2
Oil Storage Capacity	Daily storage capacity equivalent to <b>twice the effective daily recovery capacity</b> , unless the owner/operator can show that a lower capacity is adequate	Available at the facility	Appendix E, Section 12.2

\* Other means of containment may be appropriate for inland facility (see next slide)

# Containment Boom Alternatives

- “As Appropriate”
- For example:
  - Alternative strategy may be more appropriate for inland facilities, where spill pathway could be a dry drainage pathway or tributary
  - Alternatives include:
    - Underflow dams
    - Temporary containment dams (soil, etc.)
    - Inflatable diaphragms



# Addressing alternative methods

- Open creek
- Difficult access
- Debris and vegetation uncontrolled
- Requires different type of boom Access and deployment ability
- Appropriate equipment for the environment and access point



## Alternative Methods

- City re-routing the drainage of creek
- Effluent discharge upgrade by the facility
- Spill gate at discharge point
- Access to deployment area improved



# Presentation Overview

- I. Introduction
- II. FRP Training and Exercise Requirements
- III. Implementing a GIUE**
  - Preparing for GIUE
  - During the GIUE
- IV. Evaluating GIUE Performance

# Preparing for a GIUE

- Outreach to potential candidate FRP facilities
  - General awareness outreach
    - Letters, mailings
    - Information sessions, seminars, webcasts
    - Emails
    - Attend conferences, trade shows
  - No advance notification of potential for a GIUE
- PREP limits the number of GIUEs to 10 percent of FRP plan holders per Region per year.
  - Coordinate with other regulating agencies regarding complex facilities that may participate in upcoming Area Exercises (e.g., PREP schedule).
- Selection of target facility
  - EPA already has a list of FRP plan holders
    - Significant and substantial harm facilities
    - Substantial harm facilities
  - Candidate facilities:
    - New facilities that have never been drilled/exercised
    - Facilities that have failed an earlier drill/exercise
    - Facilities that have not performed a drill/exercise in the last 3 years

# Planning a GIUE

- Identify and invite GIUE observers/evaluators
  - Other EPA inspectors
  - State environmental agency representative
  - USCG, or other regulatory agencies, if facility is a “complex”
    - USCG FRP Rule (33 CFR 154) – Applies to deepwater ports and marine transportation-related on-shore facilities that are capable of transferring to/from vessel with 250 barrels (10,500 gallons) or more of oil storage capacity
    - DOT (49 CFR 130) – Applies to transportation of oil by motor vehicles and rolling stock
    - RSPA (49 CFR 194) – Applies to onshore oil pipelines
    - MMS (30 CFR 254) – Applies to offshore facilities (located seaward of the coast line)
  - Superfund Technical Assistance and Response Team (START) contractor or other regional contractor support
- EPA remains the lead evaluator if it initiated the exercise
- Develop drill/exercise scenario
  - Review plan and identify circumstances of small discharge
  - Review map, location of sensitive environments, drinking water intakes, areas to be protected
  - Review Emergency Response Action Plan (ERAP), pre-designated deployment locations, pre-deployed equipment
  - Determine timing of exercise (review tidal charts to assess current direction)
  - Be prepared for shift changes at the facility





# Spill Scenario

- Typically taken from the Plan
- Use “small discharge” of 2,100 gallons or less
  - Discharge incident may involve a larger total volume on-site, of which 2,100 gallons escapes to water.
- Specify
  - Tank
  - Type of product
  - Volume discharged and volume in water
  - Weather conditions, if assuming different from conditions at time of the exercise
- Identify
  - Impacted areas based on NOAA maps
  - Chain reactions information
  - Flow pattern based on site topography
  - Ingress and egress to the facility for evacuation and response

# Safety Considerations

- Follow facility safety procedures
  - Visitor sign in procedures
  - Mandatory safety video on process hazards and facility evacuation plan
  - Proper attire (footwear, helmet, safety glasses, personal flotation device, NOMEX clothing if required by the facility, etc.)
  - Inspector should bring own safety equipment
- Crucial that drill/exercise be conducted in a safe manner
  - EPA representative can terminate drill at any time
  - Hazardous conditions may include severe adverse weather or emergency situation at the facility or neighboring area
    - Should be addressed in FRP
  - If you determine that the drill/exercise is causing hazardous conditions, you should call a time out and confer with the facility owner/operator



# GIUE Coordination

## GIUE Scheduling/Costs

- Exercise is meant to be unannounced
  - Exercise must proceed even if the QI happens to be on vacation (an alternate QI is often identified in the plan)
  - *However*, exercise may be cancelled if existing conditions present a safety concern
- Facility is responsible for costs of performing the drill/exercise, including:
  - Internal costs of facility employees and equipment involved in the response
  - External costs associated with contractor-supplied equipment and resources (OSRO)

## Initiate the GIUE

- Inform the QI that you are at the facility to conduct an unannounced exercise
- Provide GIUE Drill Letter, if used
  - Certain regions send letters in advance to all regional facilities, some do not provide letters
- Go over exercise guidelines with QI
- Start the exercise clock
  - Discharge has just been discovered
  - Oil has already reached water
- Overall exercise duration is **up to 4 hours**



# During the GIUE

- Evaluate **command post** and **response activities**
- Intervene only for issues of health or safety
  - Examples: personal flotation devices, imminent harm to personnel or third party
- Only QI should modify scenario exercised when site conditions are inconsistent with scenario described in the plan
  - Example: new construction which changes path of a waterway
  - QI should identify a probable scenario and exercise that specific scenario
  - Qualified Individual (QI)
    - Is the QI responsible for implementing the facility's FRP?
    - Does the QI understand responsibilities?
- Command Post
  - Incident control
    - Are proper notifications conducted in a timely fashion?
      - Notification to NRC, state, facility management, etc. as outlined in the FRP and ERAP
    - Has the spill response team and/or OSRO been activated?
      - When was response team/OSRO activated? When did they arrive? Can they deploy equipment?
    - Are communications with response personnel and other facility personnel effective?
    - Are the ERAP and/or FRP being used?

# Incident Control



FRP#:0200596

Abbotts chemical, Inc.

04/17/01

QI briefing emergency brigade.



# Boom Deployment

- **Boom Deployment**

- *Sufficient* containment boom and means for deploying it *within one hour* of discovery of the spill.
- **1,000 feet** of boom or twice the length of vessels loading/unloading at the facility.
- Must be **containment boom**, not made of absorbent materials.
- At inland facilities, boom may be deployed in dry ditches.

- **Boom Elements**

- Above-water freeboard
- Flotation device
- Below-water “skirt”
- Longitudinal support

- **Selection Considerations**

- River flow rate, current, and tidal information to determine if appropriate boom can hold the pressure and not fail
- Length of deployment/goal of booming operation
  - Contain, deflect, protect
- Anchoring method
- Boat safety operations and capabilities



# Boom Deployment (continued)

- Commercial boom types
  - Fence boom
  - Curtain boom
  - External tension member boom (uncommon)
- A sorbent boom is not a containment boom
  - Can be used for final polishing, to remove small trace of oil or sheen, or as backup to containment boom
- Boom Functions
  - Protect (shorelines, creeks, wetlands, water intakes, etc.)
  - Deflect (move oil to collection point)
  - Contain (hold oil within collection location)
- Booming Strategies
  - Containment booming (*contain*)
  - Exclusionary booming (*protect*)
  - Diversionary booming (*deflect*)
  - Shore seal booming (*protect*)
- Other Strategies
  - Berms, underflow dams (*contain*)



# Containment Booming

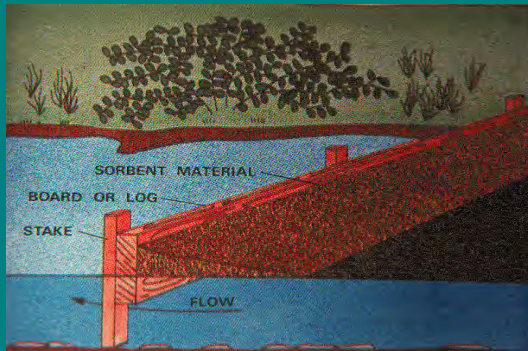


## Exclusionary Booming



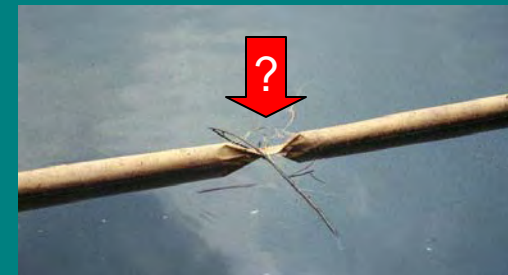
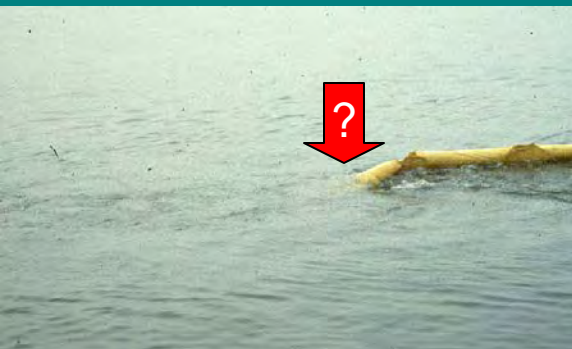
# Inland “Small Stream” Containment

- Containment dams
- Underflow dams
- Inflatable diaphragms
- Spill gates



# Boom Deployment Problems

- Can facility personnel and/or OSRO deploy the boom?
  - Do they have the required equipment?
  - Do they have access to boom deployment sites and anchor points?
- Is the boom properly deployed?
  - Proper anchoring, proper flotation, proper tension
  - No twists or gaps
- Is the boom properly rated for the stream flow rate?
- Is the boom maintained in a way to allow for rapid deployment?
- Does the facility have the appropriate hardware needed to link boom sections and stake the boom?





# Oil Recovery Devices

- GIUE performance evaluation criteria:
  - Oil recovery devices available **within 2 hours** of discovery of the spill
  - Must have **effective daily recovery capability** equal to amount of oil released in a small discharge (i.e., 2,100 gallons)
  - Deployed and **ready to start** oil recovery
  - Actual pumping of water is not required

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Suction



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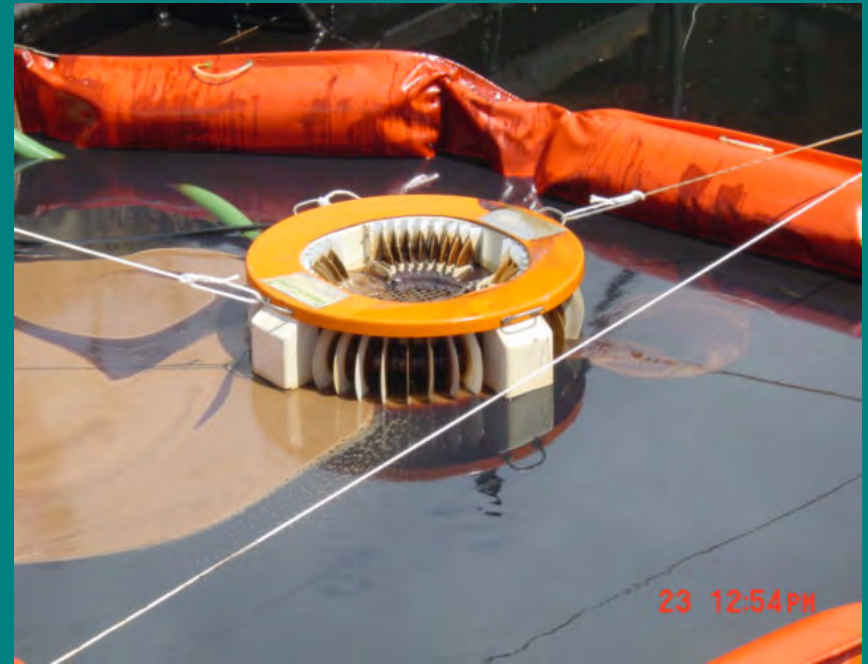
# Oil Recovery Devices: Skimmers (continued)

- Rope mop



- Low to medium viscosity oil
- Good in debris and ice conditions
- Shallow water

- Disc



- Medium viscosity oils
- Higher oil/water ratio
- Calm and shallow waters

# Oil Recovery Devices: Skimmers (continued)

- Drum



- Medium viscosity oils
- Good debris handling capability
- Calm and shallow waters

- Belt Type Skimmer (e.g., Chain Brush)



- Medium to heavy oils
- Excellent debris handling
- Fast deployment



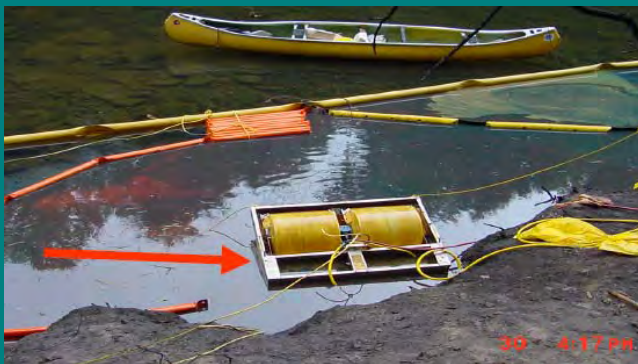
# Oil Recovery Devices: Others

- Vacuum Truck



- Provisions for Storage of Recovered Oil
- GIUE performance evaluation criteria:
  - Oil storage capacity for recovered oily material equivalent to **twice the effective daily recovery capacity** required on-scene, or 4,200 gallons per day

- Skimmer



# Other Response Actions

- Preventing further contamination



# Presentation Overview

- I. Introduction
- II. FRP Training and Exercise Requirements
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- IV. Evaluating GIUE Performance**





# Evaluating GIUE Performance

- PREP Evaluation Factors:
  - ✓ Conducting proper **notifications**
  - ✓ Arrival of **containment boom** as specified in the FRP within one hour of detection of the discharge and subsequent successful deployment (“boom in the water”);
  - ✓ Arrival of **oil recovery devices** as specified in the approved response plan within two hours of detection of the discharge and the subsequent successful operation/simulated recovery;
  - ✓ Demonstrating the availability of adequate **storage capacity** for recovered oil; and
  - ✓ **Properly conducting the exercise** considering the size of a small discharge including skill and competency of responders and material readiness of response equipment.

# Evaluating GIUE Performance

- “Measure of an effective unannounced GIUE is the overall ability of the responders identified in the FRP to rapidly and effectively control a small discharge with particular attention to those actions that afford the best chances to control a spill and minimize its impact in the first few hours of the incident.” - PREP Guidelines, August 2002.

# Evaluating GIUE Performance

(continued)

- “EPA personnel will evaluate whether the response equipment specified in the Plan arrives at the specified times... Whether the containment boom and recovery devices arrive precisely at the specified times is less relevant than the overall conduct of the exercise and the successful achievement of the exercise’s objectives described in PREP” - PREP Guidelines, August 2002.

# Evaluating GIUE Performance

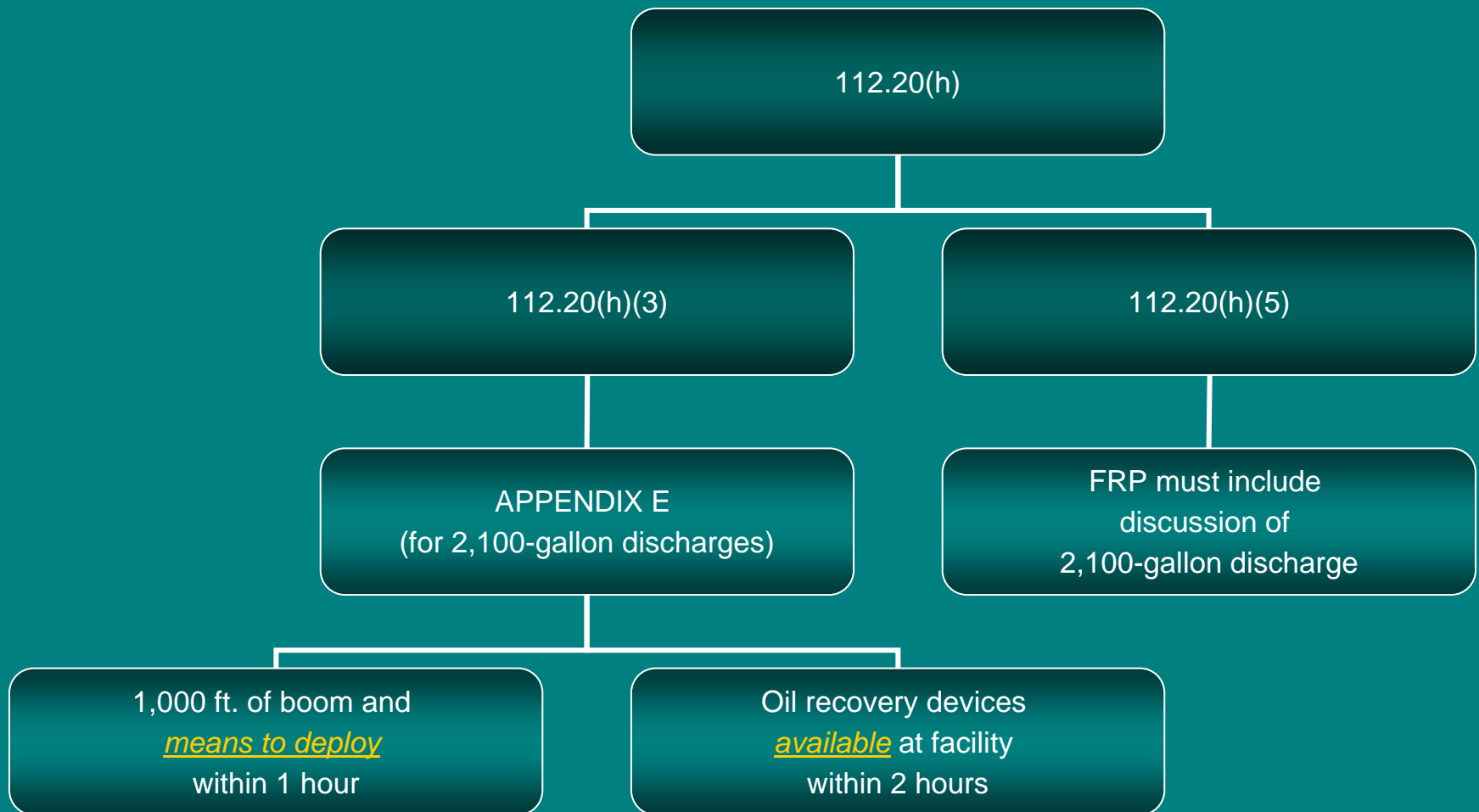
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- Debrief with QI/facility personnel and OSROs.
- Consequences of pass/fail
  - A facility that successfully completes a GIUE cannot be subject to another GIUE for 3 years
  - Failure of a GIUE may require the planholder to participate in additional unannounced exercises, revise the existing response plan, or both.
  - In the event of GIUE failure, the Region may choose to perform further inspection of the facility.
  - In certain instances, EPA may revoke approval of FRP on the basis of GIUE performance until changes are made.
  - Based on failure of a GIUE, the FRP coordinator may recommend to upgrade the facility to a significant and substantial harm facility.
- Follow-up
  - Verify implementation of recommended improvements.

# GIUE Failures

- Reminder:
  - Goal is to observe how a facility implements their FRP; we are evaluating their performance against their FRP.
- Examples of GIUE failure field observations:
  - ✘ Contractor identified in the Plan did not arrive at the facility during the duration of the exercise.
  - ✘ Facility personnel or OSRO were unable to deploy a containment boom due to access issues, inappropriate equipment, lack of training with equipment.
  - ✘ Copy of the FRP was not available at the facility, so personnel could not implement the Plan.
  - ✘ Facility lacked communications equipment identified in the FRP
  - ✘ Site selected for boat and boom placement was not consistent with the FRP.
  - ✘ The Plan contained incorrect telephone numbers for spill notifications (state agency, NRC, local responders). Facility was unable to notify appropriate entities.

# Relationship between Drill Performance Deficiencies and FRP Preparation



# Violation of §112.21

- Requires that facilities prepare and implement a facility **response training program** and a **drill exercise program**
- Evidence for violation?
  - Poor performance during response drill
  - Lack of inspection, training, and equipment deployment logs

# Drill Performance and FRP

- Poor drill performance is further evidence that facility:
  - Failed to adequately address all the elements described in Appendix F
  - Failed to develop a Facility Response Training Program
  - Failed to develop a Facility Response Drill/Exercise Program
  - Failed to provide the required response resources for a small discharge (40 CFR 112 Appendix E)



# Questions?

