Inspections and Government-Initiated Unannounced Exercises (GIUEs) under EPA's FRP Rule

EPA FRP Short Course, Module 3
WITT O'BRIENS Compliance Workshop
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Module Agenda

I. **Module introduction**
   - FRP Inspections, including QI interviews
   - Why exercise?
   - Authority for conducting unannounced exercises
   - FRP regulation & preparedness framework

II. FRP training and exercise requirements

III. Implementing a GIUE

IV. Evaluating GIUE performance

V. FY2020 GIUE national-level performance and pandemic implications

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

DOCUMENTS REVIEWED AT TIME OF INSPECTION

- OSRO / Cleanup contractors' CURRENT contracts.
- Contractor's equipment deployment exercise logs.
- Training / drills exercises logs including:
  - QI Notification exercise
  - Spill Management Tabletop exercise
  - Facility equipment deployment exercise
  - Unannounced exercise
  - Facility Personnel Response training
  - Discharge Prevention Meeting Logs
- Tank and Secondary Containment Inspection Records.
- Facility Response Equipment Inspection & Testing Records.

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?

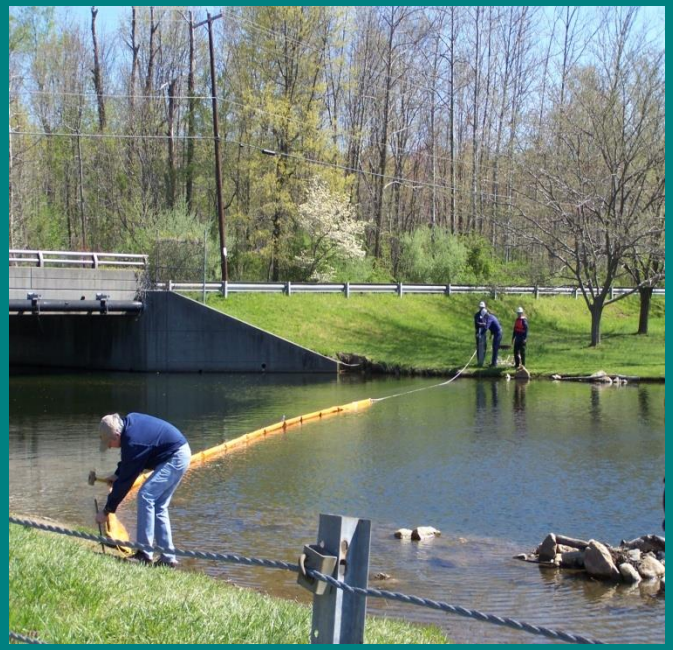
Field Inspection *(continued)*

- 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.

Why Exercise?

The effectiveness of spill response directly relates to environmental damage and cleanup cost

- 2007 Government Accountability Office (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 (OPA 90)
  - §311(j)(6)(A): Equipment inspections
  - §311(j)(7): Tests of facility removal capability
- NCP
  - ACP
  - FRP regulation requires facility response drills/exercises

    Program must follow **PREP** (or alternative format approved by the Regional Administrator) *[§112.21(c)]*
- National response framework

Spill Contingency Planning Framework

National

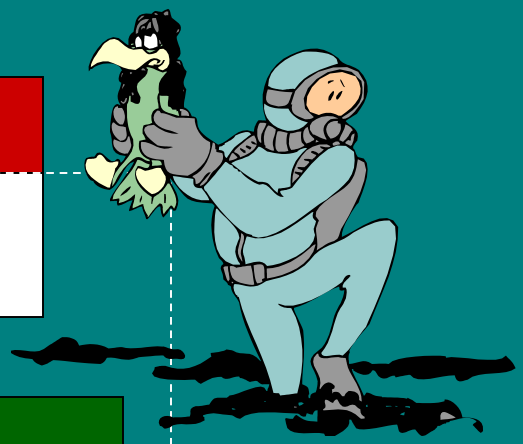
Regional

Local / Facility

Spill Of National Significance (SONS) Exercise

National Contingency Plan

National Response Team
16 Federal Agencies



Area Exercise

Area Contingency Plans

Regional Response Team
Federal agencies, State and Local government

Area 1 | Area 2 | Area … | Sub-Areas

Facility Exercise

Facility Response Plans

Facility owner/operator
Spill response contractors

Facility 1 | Facility 2 | Facility …

Module Agenda

I. Module 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

V. FY2020 GIUE national-level performance and pandemic implications

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

FRP Training and Exercise Requirements *(continued)*

– Facility response drills/exercises *[§112.21(c)]*
  - Develop a program of drills/exercises, including evaluation procedures
  - Program that follows 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 (now called plan holder 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, & response training***
9. Diagrams
10. Security systems
11. Response plan cover sheet

PREP Exercise Components - *Recap*

Element	Frequency*	Initiating Authority	Notes
QI Notification Exercises	Quarterly	Facility owner or operator	At least one notification per years must be made off-hours
Emergency Procedures Exercises	Quarterly	Facility owner or operator	*Optional: can be used by facilities as an unannounced exercise*
Incident 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 (annual, if OSRO dependent)	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
Government-Initiated Unannounced Exercises (GIUE)	**Triennially**	**EPA, PHMSA, USCG, BSEE**	**If successfully completed, the facility can only be subject to a GIUE once every 3 years**

* At least one exercise per year must be unannounced

FRP Spill Response Planning Levels

Planning scenario	Oil volume
Small	2,100 gallons or less – *GIUE test level*
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 – *Recap*

- 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

Scenario Description *(recap continued)*

- Weather or aquatic conditions
- Likelihood that the discharge will travel off site
- *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: Small Discharge

Appendix E, Section 3.3:

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

Equipment	Capacity	Timeline	Citation
Containment Boom*	**1,000 feet** *or* Twice the length of the largest vessel that regularly conducts oil transfers to or from the facility (whichever is greater)	Means of deploying within **1 hour** of the discovery of an oil discharge	Appendix E, Section 3.3.1
Oil Recovery Devices	Effective daily recovery capacity equal to or greater than the **amount of oil discharged in a small discharge**	Available at the facility within **2 hours** of the discovery of an oil discharge	Appendix E, Section 3.3.2
Oil Storage Capacity	Daily storage capacity equivalent to **twice the effective daily recovery capacity**, 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
  - More on this topic later…

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III. Implementing a GIUE

- Preparing for GIUE
- During the GIUE

IV. Evaluating GIUE performance

V. FY2020 GIUE national-level performance and pandemic implications

Preparing for a GIUE

- Outreach to potential candidate FRP facilities
  - General awareness outreach
    - Letters, mailings
    - Information sessions, seminars, webcasts
    - E-mails
    - Attend conferences, trade shows
  - No advance notification of potential for a GIUE

Preparing for a GIUE *(continued)*

- Selection of target facility
  - EPA already has a list of FRP planholders
    - 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 and evaluators
- If facility is covered by other federal partners as well, invite:
  - USCG - Marine transportation-related (MTR) facilities
  - DOT – PHMSA – Breakout facilities

Planning a GIUE

- Identify and invite GIUE observers/evaluators (continued)
  - Other EPA inspectors
  - State environmental agency representative
  - Superfund Technical Assistance and Response Team (START) contractor or other regional contractor support
- EPA remains the lead evaluator if they initiated the exercise

Planning a GIUE (continued)

- Develop drill/exercise scenario – *EPA activities*
  - 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 reaches navigable water**
- Specify
  - Tank
  - Type of product
  - Volume discharged and volume in water
  - Weather conditions, if assuming different from conditions at time of the exercise

Spill Scenario (continued)

Identify:

- Impacted areas based on National Oceanic and Atmospheric Administration (NOAA) maps
- Chain reactions information
- Flow pattern based on site topography
- Ingress and egress to the facility for evacuation and response

Safety Considerations

EPA will 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

Safety Considerations (continued)

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 an emergency 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

EPA Equipment List

- Two-way radios or cell phones
- Hard hat, safety boots, safety glasses
- Agency credentials
- Camera/video recorder
- Binoculars
- Checklist/logbook
- Copies of relevant sections of FRP, GIUE drill letter with description of scenario to be exercised
- Some facilities (such as refineries) require NOMEX (flame-resistant clothing) be worn

GIUE Scheduling/Costs

- Exercise is meant to be <u>unannounced</u>
  - Exercise must proceed even if the Qualified Individual (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

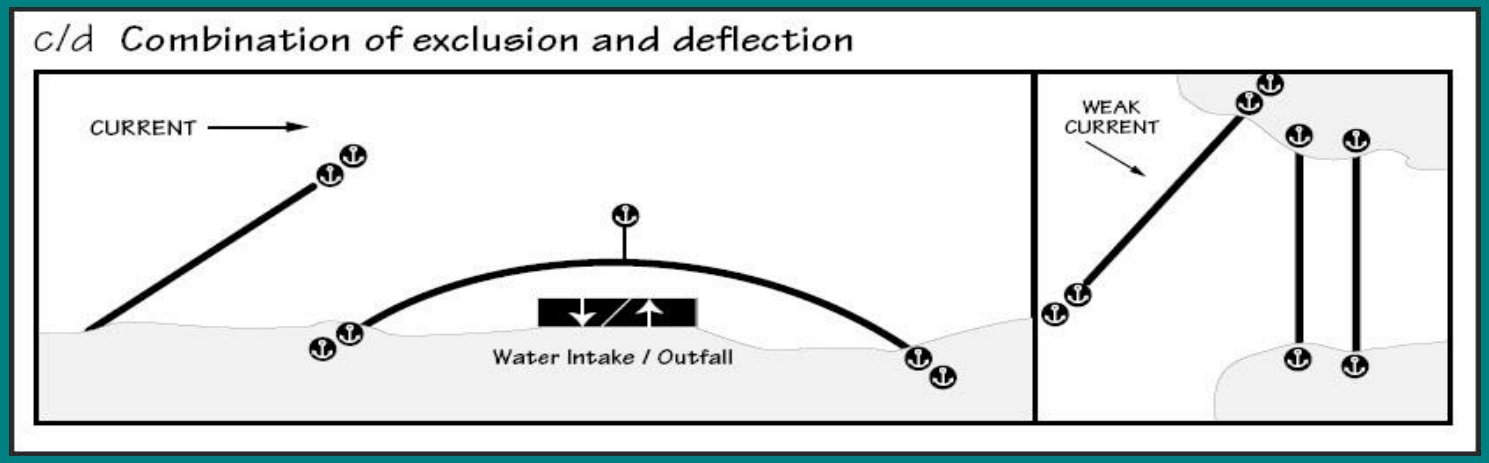
During the GIUE *(continued)*

- 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?
  - QI
    - Is the QI responsible for implementing the facility's FRP?
    - Does the QI understand responsibilities?

Incident Control

Plan Implementation – Mitigation Measures

- Make sure to check the ACP to be consistent with protection strategies – *prior to GIUE*.
- Make sure to identify these strategies in the plan and implement during a GIUE.
- Tactical plan sheets may be helpful tools to use doing a GIUE.



Boom Deployment Expectations

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

Oil Recovery Devices Expectations

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

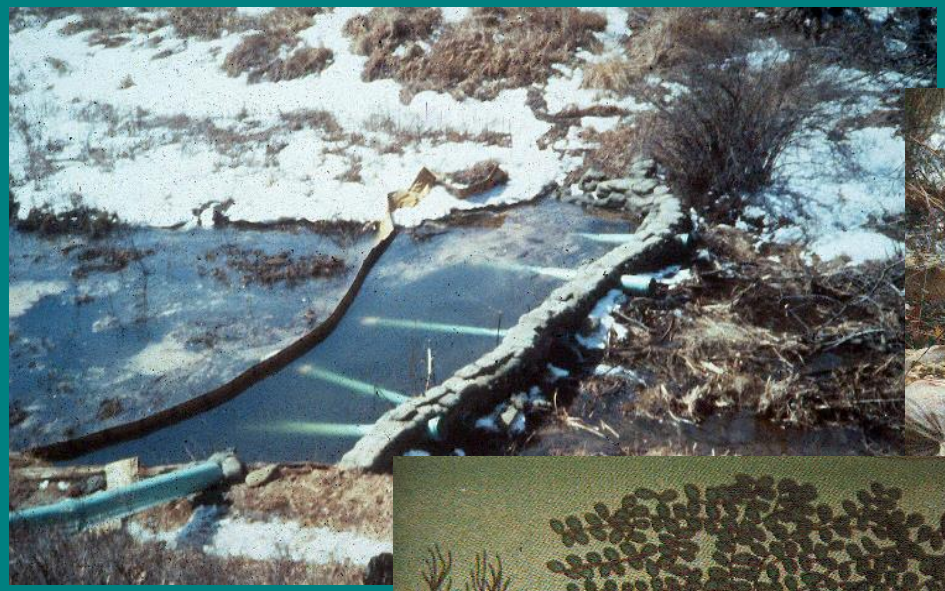
Oil Recovery Devices: Others

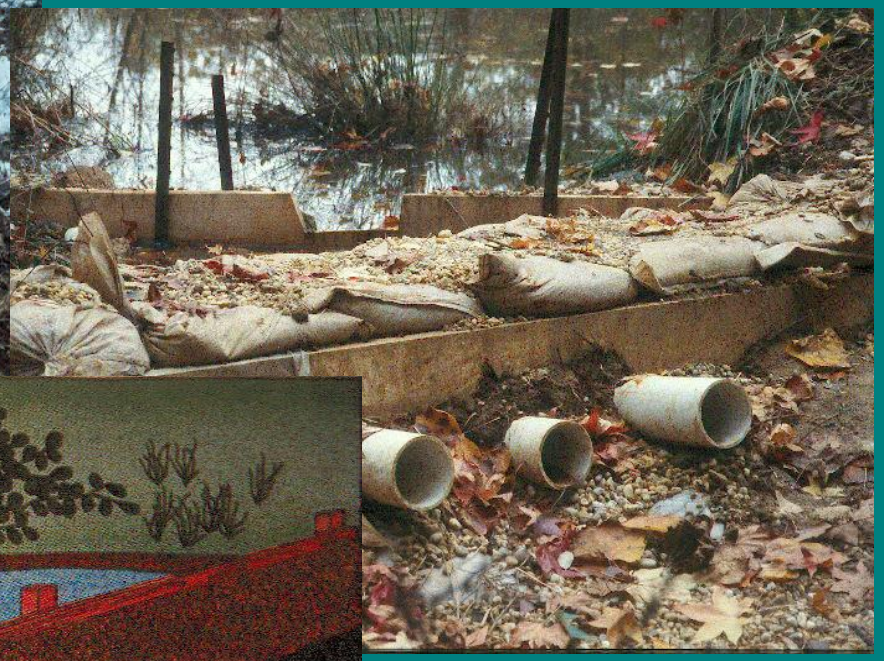
Vacuum Truck

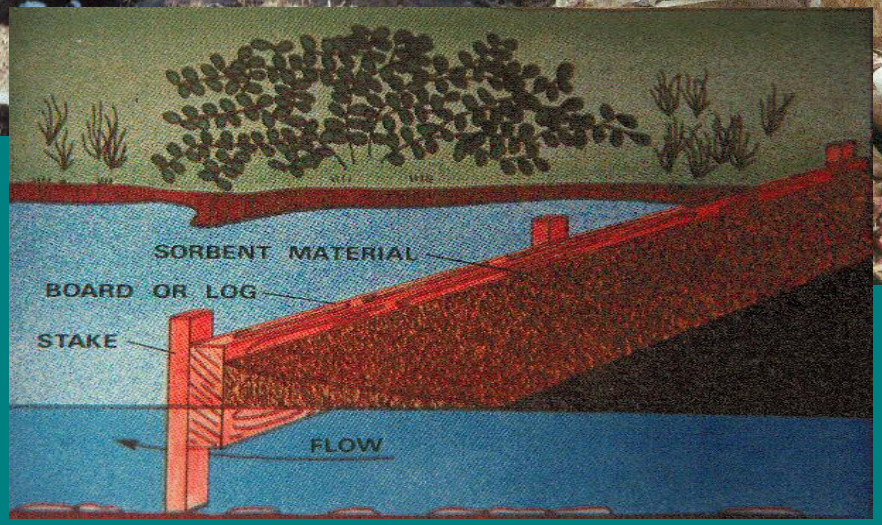
Inland “Small Stream” Containment - *Alternatives*

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

Berms, Underflow Dams







Spill Gates

Inland “Small Stream” Containment - *Alternatives*

- How does EPA evaluate these alternatives?
- Use “containment boom” equivalency approach to assess appropriateness of the alternative.
- Use the GIUE to evaluate effectiveness, *demonstrate ability to implement*.
- Containment boom may still be necessary for other response actions downstream.

2016 PREP Guidelines
Alternatives to Booming Systems

2.3.7.2.3 Non-Transportation-Related Facilities Regulated by the EPA (GIUE section in PREP)

Performance metrics to think about during the GIUE (should be outlined in the FRP:

- Arrival of containment boom and/or alternative systems as specified in the FRP within one hour of detection of the discharge and subsequent successful deployment.
- For alternative systems using temporary dams or underflow dams, simulated installation of these systems according to the FRP is expected to be performed for a successful GIUE.
- For plans using both containment boom and alternative systems, successful boom deployment and simulated installation of the alternative systems is expected for a successful GIUE.

Inland “Small Stream” Containment Metrics

- Containment dams *(simulated installation)*
- Underflow dams *(simulated installation)*
- Inflatable diaphragms *(this can be deployed during a GIUE)*
- Spill gates *(may be possible to close during a GIUE)*

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

Other Response Actions

Preventing further contamination

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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
  - Properly conducting the exercise considering the size of a small discharge including skill and competency of responders and material readiness of response equipment

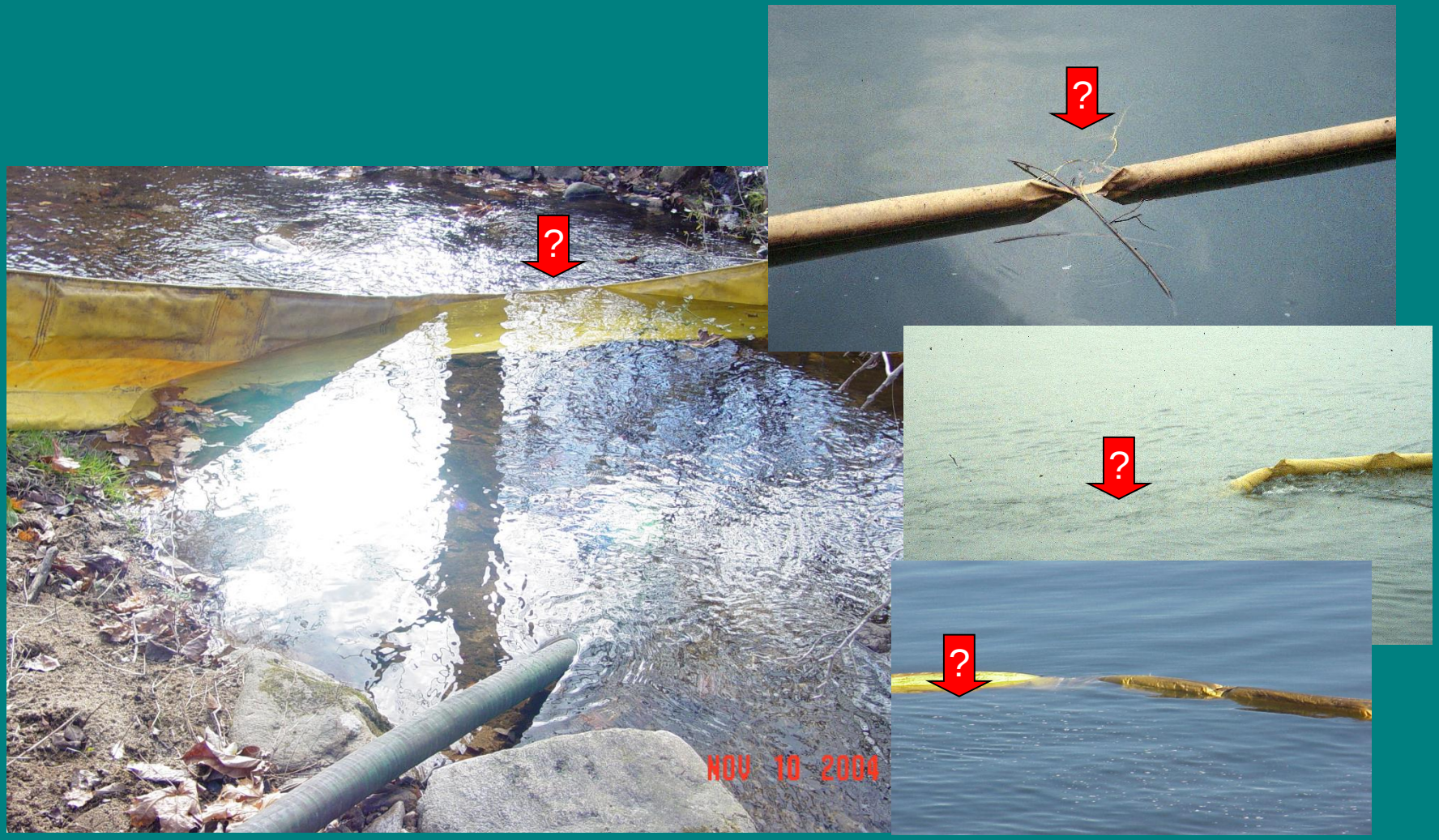
Evaluating GIUE Performance
(continued)

- Debrief with QI/facility personnel and OSROs
- Consequences of successful/unsuccessful completion of an exercise:
  - A facility that successfully completes a GIUE will not be subject to another GIUE for 3 years, per PREP Guidelines
  - An unsuccessful GIUE may require the planholder to participate in additional unannounced exercises, revise the existing response plan, or both
  - In the event of an unsuccessful GIUE, the region may choose to perform further inspection of the facility
    - In certain instances, EPA may revoke approval of FRP based on GIUE performance until changes are made
    - The FRP coordinator may initiate actions to upgrade the facility to a significant and substantial harm facility
- Follow-up
  - Verify implementation of recommended improvements

Boom Deployment Problems – *National Perspective*

- 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?

Boom Deployment Problems *(continued)*



Follow-up from Regions after an Inspection or GIUE

- Immediately following an inspection or exercise, EPA will leave a “Notice of Inspection” form.
- If there are field deficiencies, EPA will follow-up with a letter, typically within 30 days.
- Plan amendment may be required as a result of field deficiencies.
- Successful completion of a GIUE is typically documented in a letter as well.

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FY 2020 GIUE Performance

- In FY2020, EPA completed 42 GIUEs, mostly completed prior to the pandemic, but we've been able to complete 9 GIUEs after re-opening in some Regions.
- GIUE performance: 34 of the 42 GIUEs (or 81%) were successful. Over the last 5 years, GIUE successful rate is about 81%.

Pandemic-related Compliance Monitoring

- During the pandemic, EPA has added a virtual GIUE compliance monitoring activity (OfCM) to our toolbox
- R5 has currently conducted 19 of these virtual GIUE activities. All facilities were found in compliance. Basic format of the OfCM-GIUE includes:
  - E-mail informing the facility that they may be subject to an OfCM-GIUE.
  - The OfCM-GIUE checklist.
  - A TEAMS e-mail invite is sent to all parties involved the day of the OfCM-GIUE.
  - Facility records review.
  - OfCM Deficiency Letter or OfCM In-Compliance Letter.

Pandemic-related Outreach to Planholders

- During the pandemic, EPA is encouraging planholders to consider holding virtual discussion-based tabletop exercises (TTX's) and introduce a virtual COOP component to plan for an oil spill response whereby their OSRO's may have limited personnel availability to respond to an oil spill from their facility.
- On equipment deployment exercises, planholders are encouraged to document why they cannot perform the scheduled equipment deployment exercises (EDE's). These EDE's may be rescheduled for later in the year, noting that the revised PREP guidelines include a revised definition of "annual" on p. 1-2.

Next up: *Regional Perspective from Chris Perry, EPA Region 6*