

## **RESPONSE Module 6**

**Slide 1** Before we get totally immersed in oil spill response, a few comments on why you want to avoid it. The consensus is that only 14-17% of spilled oil is actually recovered while still on the water. That means that over 80% of it is either absorbed by the environment or hits the beaches and other nearshore habitats. These recovery statistics are obviously for reported spills that are actually cleaned up....not the smaller ones that are rarely reported where 100% of the fuel or oil weakens the environment. So, whether it is a large catastrophic spill or the repetitive smaller spills associated with boat and marina operations, preventing them is by far the least expensive and safest choice. And, it is a choice. Not recognizing these spill risks and not establishing effective spill prevention programs as outlined in previous module can be considered negligent and certainly poor management.

**Slide 2** Being prepared for a spill by having trained and certified staff along with suitable response and personal protection equipment and a plan is a critical form of prevention. If the spread of fuel or oil can be rapidly contained and removed, the marina and adjacent waters and shorelines are protected and further environmental damage is prevented. Just like all best management practices, establishing an in-house spill response capability requires the equipment and training and also continuous management of these response resources. Remember our introductory statement: Protection equals Prevention...and a quick response can prevent extensive environmental and financial damage.

**Slide 3** Working at a marina, these may be the types and sizes of spills that you might have to confront. This doesn't include the vast majority of smaller spills that only warrant the use of a few absorbent pads or lengths of absorbent boom. Regardless of size, all spills need to be SCRAPed....secure the source of the spill, contain the spilled oil, remove the oil from the water and protect adjacent boats and other marine resources. Remember, the most important thing is Safety! The welfare of boaters, marina staff, the public and response personnel are absolutely paramount. Often the media will misinterpret spill response delays attributed to unsafe weather or sea conditions, restricted visibility or inhalation or explosive risks as just being lax and unresponsive. It truly doesn't matter what they think. Oil spill response by its very nature is risky. Responders are on or near the water that is contaminated with toxic oil that may be releasing noxious and explosive fumes. That mix already places responders in jeopardy, so all operational decisions must be made cautiously to minimize these and other safety risks...no exceptions!

**Slide 4** SCRAP...this easy to remember acronym covers the four basic steps to any oil spill response:

- Secure the source of the oil. This might mean simply closing a valve or stopping a pump. If qualified, you may have to take more aggressive actions like transferring oil into another tank or container or plugging a leak or repairing a ruptured hose. The goal is to stop or at least restrict the flow of oil into the water. If you don't secure the source of the oil, you eliminate the "S" from your response and are literally left with CRAP as oil continues to be discharged, poisoning the environment.

- Contain the oil so that it doesn't spread throughout the marina or into sensitive habitats or other areas. This not only protects these areas from oil contamination but also keeps the oil pooled in one location for easier removal.

- Recover or Remove the oil from the water. With the proper personal protective equipment, PPE, and training workers can use absorbents and more sophisticated mechanical skimmers to remove the oil;

- and Protect other marine resources and other cultural and economic interests. This can be accomplished using the same oil spill containment boom to deflect or restrict the entry of oil adjacent waters and onto shorelines.

**Slide 5** Preparing your marina and staff for meeting the demands of a spill response takes many of the same steps we discussed in eliminating the Operational Failure leg of the Spill Triangle. Planning and Training are essential to a safe and effective spill response. Selecting the proper spill response and safety equipment is critical to a timely and effective containment and clean up and also provides that measure of safety to protect the health of your response staff. Equipment without training is a formula that can only result in failure and unnecessary risk. Because of the the technical requirements of boom deployment and the use of absorbents and mechanical skimmers, the only training that is satisfactory is "hands-on" training bolstered by after training critiques. Response drill are necessary. Invite outside responders from local fire and HAZMAT departments and Coast Guard unit to participate. Provide responders with diagrams of port and marina layouts that indicate any hazards along with access routes and permissible dock load capacities. Keep these current during any construction projects. Determine maximum response times based on periods of high road congestion or other conditions that could delay delivery of response resources. Also, if you don't know there is a spill, how can you respond? A communications system that notifies spill response staff along with the U.S. Coast Guard and other state and local response agencies will help get the equipment and personnel on scene as soon as possible and also remove unnecessary staff, boaters and the public from any danger. Communications

can be as simple as a recall phone tree that is kept current to provide valid phone numbers and responder availability.

If you maintain spill response equipment at the facility, a planning decision must be made regarding who should have access to this equipment locker to maximize its availability during an oil spill, while providing the necessary monitoring and control to ensure it remains intact. Scheduled inventories must be included to verify quantities and condition of equipment to avoid finding an empty response locker when the emergency strikes. Here again is an example of a BMP that requires oversight and management to be effective.

**Slide 6** If preparedness strategies work, then an actual oil spill response should be timely, safe and executed with precision. These are the benefits of recognizing that a spill may occur rather than remaining in denial and doing nothing. To carry out SCRAP, responders must be able to exercise the skills learned during drills in a coordinated response that minimizes risk and applies response resources under demanding and often dangerous conditions. That is why there should be no “weak links” in this team approach. All personnel must know their responsibilities, have sufficient training and capabilities and be aware of how their contributions may impact the success of planned response operations and the safety of others.

Later in this module we will discuss the possible roles marina staff can and cannot assume during a larger spill. One essential ingredient that is critical to effective and safe spill response is “local knowledge.” Both boaters and marina staff can offer tactical information regarding tidal influences, peculiar currents, water depth and other potential hazards to spill response management personnel.

Secure and reliable communications are essential for coordinating even smaller spills. VHF radios or even cell phones can contribute to keeping all response staff informed of the steps being taken to carry out SCRAP and provide advisories and warnings related the movement of oil slicks, sudden sea or weather anomalies or other risks. Here again, radio frequencies must be available and designated and equipment provided that can function in these potentially contaminated areas.

Training must also provide responders with the skills needed to recognize risks, monitor health hazards and symptoms, deploy oil boom in both a containment and defensive posture and to use Personal Protection Equipment, PPE, safely along with decontamination procedures. Also, all response personnel regardless of duties must have certified HAZWOPER training. More on that later.

**Slide 7** A Response Locker could provide at least a rapid temporary means of keeping oil out of sensitive areas or cleaning up small damaging spills. It must also provide PPE and there has to be an assurance that responding personal have required training and skills. Needs to be maintained and monitored.

**Slide 8** Leave gasoline spills to the experts.

Often the best response is to notify marina staff, call emergency response numbers and assist in clearing the area of people and sources of ignition.

Don't contain gasoline or other flammable liquid spills. Only use booms to keep these spills from intruding under docks or entering other areas.

**Slide 9** Professional responders are aware of the dangers and risks associated with the SCRAP oil spill responsibilities. All response personnel must be HAZWOPER trained, regardless of the skills or knowledge they possess. It is the law. Permitting volunteers to enter the proximity of an oil spill to do cleanup work is probably illegal and fraught with the risks of personal injury and potential lawsuits. While the news media and the public may be skeptical, turning away questionably trained spill clean-up volunteers is prudent. Experience has shown that allowing volunteers to participate in even small cleanup operations places them in harm's way. All clean up personnel should be properly trained with verification of the required HAZWOPER certification level and insured through state Labor & Industries protections and be duly compensated. While a fall or other sudden onsite injury from a volunteer may cause you immediate distress, the risk of being notified through class action suits about longer term illnesses years later should also be of concern. This list provides some of the issues marina staff should consider before allowing anyone to help out at a spill.

**Slide 10** HAZWOPER, Hazardous Waste Operations and Emergency Response, rules establish federal OSHA safeguards and training standards for employees involved in various levels of response activities involving the assessment, control, containment and cleanup of discharges of hazardous materials.

While there are no comprehensive HAZWOPER rules in British Columbia governing the use of staff and volunteers for oil spill cleanup, the Workers Compensation Board, Worksafe BC, does apply to individual spill response activities and the Canadian Shipping Act provides specific requirements for spill response contractor operations.

**Slide 11** Hazardous Waste Operations and Emergency Response

29 CFR 1910.120 and WAC 296-62-3046

Petroleum products do meet the definition of a hazardous material under OSHA's HAZWOPER standard through their inclusion in the U.S. DOT hazardous materials list. Therefore, oil spill clean-up workers and emergency responders are covered by HAZWOPER and must be trained. State laws usually either mirror these OSHA standards or make them more stringent.

An employee who has not received training nor been issued a certificate shall be prohibited from engaging in response and clean-up operations.

Employers who can show by documentation that an employee's work is equivalent to that required training shall not be required to provide the initial HAZWOPER training. This must be documented by employer.

**Slide 12** As you can see from this list of HAZWOPER requirements, little response clean up work can be done without obtaining 24-hour certification training. However, if an employee is near a valve that is releasing oil, and is aware of the risks and remains safe, he or she can close that valve. It is the employer's responsibility to ensure that all marina staff has sufficient HAZWOPER training and is re-certified annually through an 8-hour refresher course.

**Slide 13** The minimum 8-hour awareness HAZWOPER training permits little involvement in initial spill response SCRAP measure. This HAZWOPER level does allow for certified personnel to engage in on shore oil removal as long as it is supervised and does not subject workers to inhalation risks. These are the responders you see in oil covered boots and slickers.

**Slide 14** A safe and effective spill response must be carried out by works with sufficient training well beyond HAZWOPER certification. As expressed earlier, hands on training with practice under various sea and weather conditions is essential. Not only must responders have the individual skills to handle boom and other response and PPE gear, they must also use these drills to develop teamwork skills. An oil spill response is rarely the effort of a single responder.

**Slide 15** While this isn't a boom deployment course, it is worth discussing a few of the capabilities and limitations of using oil containment boom during a spill. Booms are basically a floating curtain that under certain conditions can help contain or prevent an oil slick from spreading onto sensitive areas. It is important to remember that these booms can also be used to keep oil out or deflect a slick away from important environmental, economic and cultural resources. The use of booms is usually limited by sea and wind conditions and

are best deployed where currents or water flow is limited to only a few knots. If considering procuring a boom, consider the operating parameters relative to the conditions experienced in the waters around your facility. Also, the ability to store, maintain, deploy, and retrieve and clean the boom must be weighed. Containment type booms are usually constructed of a durable polymer or fabric covered flotation system with a rubber containment skirt. They can also be made of absorbent materials to collect the surface oil sheens before they spread throughout the marina. These oil absorbing type booms are meant for use in protected waters and a disposal plan must developed to eventually handle the oil laden boom when it floats low in the water or starts to deteriorates. Most booms are attacked by the sun's UV rays which can accelerate this deterioration especially if booms are left out on the water.

**Slide 16 This illustrates the need for training and practice to effectively deploy and maintain boom so that it performs effectively.**

**Boom can be used to collect, contain and deflect surface oil. Boom deployment strategies and proper training and drills will ensure the greatest level of protection**

**Slide 17** While boom of this size would be beneficial for open water spills, the cost, storage and rapid deployment would be beyond the capabilities of most private businesses.

Cooperative and pooling arrangements could be considered to make adequate protective equipment and manpower available if a spill occurs.

**Slide 18** All response and safety equipment should be treated as if your life or livelihood depends on it....it just may. This again illustrates the essential need for astute management of spill response equipment. This equipment needs to be stored and maintained and periodically replaced. Leaving these types of oil boom exposed to the weather and other abuses can render them worthless in a short time. Purchasing the equipment is only part of investing in effective spill prevention, preparedness and response.

**Slide 19** ICS, or the Incident Command System, is a management system that can be applied to all types of local, state, federal and even international events or response incidents. It is a means of coordinating functions and activities necessary for the successful completion of a task of in our case, an oil spill response. You are just going to be introduced to the ICS concept to illustrate that a formal organization already exists for effective spill response. ICS was initially developed by firefighters who recognized the needs for greater coordination and control over response resources, particularly in multi-jurisdictional, multi-agency and wide spread incidents. It should be viewed as a tool for the command, control and coordination of a

response that ensures a reliable communications and pre-designated organizational structure. In particular, ICS provided a remedy for:

Nonstandard terminology among responding agencies

An inability to rapidly expand or contract the size of committed resources relative to the needs of the response

Nonstandard and nonintegrated communications

Lack of consolidated actions plans

Lack of designated facilities

Check with your fire department or other local rescue organizations. Chances are they subscribe to ICS and are fully trained.

Where do you fit in? This depends on the type and availability of resources you can provide. Your port facility could possibly be designated as an Incident Command Post if outfitted with appropriate communications or some of your boats and skiffs could be put into service. Where marina staff really can contribute is with local knowledge. As we mentioned in an earlier slide, providing information on currents and tidal conditions affecting the impacted area can certainly make the response both more effective and safer. To learn more about ICS link to the Federal Emergency Management Agency, FEMA, Emergency Management Institute website:  
<http://training.fema.gov/EMIWeb/IS/is100.asp>.

**Slide 20** Handling oiled boom or a fire monitor isn't where you can be most helpful. You can provide valuable support to the Incident Command System, ICS, by offering information and advice:

- potential risks
- response equipment
- local waters
- facilities
- logistical support
- staging area

**Slide 21** Many coastal states and provinces have established Geographic Response Plans, GRPs, to provide immediate protection for valuable environmental and cultural resources. Upon notification of a spill, oil spill response contractors will be directed to initiate a predetermined sequence of installing protective booms. The location of these protective booms are usually based on a collaborative effort that identifies the most important marine resources. The priority order of setting these booms will shift according to the determined trajectory of the oil sheen and by seasonal nesting or reproductive cycles of various inhabitants.

While there have been recent efforts to include economic resources in this protective scheme, most of the emphasis remains with the protections of environmental and cultural resources. That means that you may have to make arrangements to fend off that oil slick heading toward your marina.

Having sufficient oil boom and the training and equipment to deploy it across the entry to your marina could save you a sizable amount of money and permit your facility to remain in operation throughout the spill incident. It would be prudent to check with your state environmental agency to confirm if there are GRPs established for your area and then determine if they may afford you protection or even deflect oil slicks toward your marina!

**Slide 22** While GRPs may not be established to protect you, you can certainly benefit from learning how these protective strategies work. Again, working with state environmental agencies or an oil spill contractor can provide the information needed to ensure that you and your marina staff have the proper equipment and training to safely deploy oil booms under varying conditions relative to the location of the spill, the type of oil, trajectory of the slick and the sea and weather conditions.

**Slide 23** While marina staff can be expected to respond to small fuel and oil spills around marina docks and perhaps handle larger containment boom to keep an oil slick out of the marina, marinas should probably rely on contractor services for larger clean up operations. Professional responders training constantly and aside from oil removal skills, have a greater awareness of the risks these spills pose. Some of the following illustrations will show just how demanding and exhausting oil spill clean ups can be. Remember, marina staff can stay involved in the ICS response by providing local knowledge and possible other logistical support.

**Slide 24** Once the oil hits the beaches it is sheer manpower that gets the job done. By the looks of their protective clothing, this must be a before spill clean up photo.

**Slide 25** In addition to deploying protective oil boom, the encroachment of an oil slick might warrant some shoreline preparations. If your facility has open shoreline areas or even boat ramps, clearing the areas of debris will make cleaning up and disposing of oil much easier and less costly. Laying down a string of oil absorbent “pom-poms” in the tidal zone can help trap the oil and even scrub it off of the substrate with the wave and tidal actions. A little preparedness can go a long way toward protecting your resources and to minimizing the impact of a spill. What to do with the mess??

**Slide 26** Procuring an oil containment or pom-pom boom, absorbent pads and other spill response equipment and having your staff HAZWOPER certified and trained in deploying and using this equipment takes a Plan. Hopefully neither you or other marina staff will never be confronted with a spill of the magnitude illustrated, but you may very well have to face the prospect of

disposing of oil and oily debris. So, in addition to spill response equipment and training, oil spill disposal must also be included in your plan. Check with your local oil recycler to determine whether they can collect and dispose of larger quantities of oil and particularly oiled debris, absorbents and sediments. Having this disposal resource in your oil spill plan will not only assure that the oil is removed from the water, but also that it will not be left in piles within the marina and on adjacent shorelines,.

**Slide 27** This photo shows what you will be left with after the cleanup. Here again, does the marina have the equipment, staff and time to clean oiled response equipment and dispose of the oil residues safely and legally? The last thing you want to do is create another oil sheen. Absorbent booms and pads can be collected and picked up by the contractor identified in the marina spill plan. Oiled containment boom and skimmer can probably shipped off to a clean up contractor or provisions can be made for a on site cleaning pf this equipment. These arrangements must also be clearly noted in the spill management plan.

Another important consideration is the preparation for the next spill. Once absorbents have been used, they need to be replaced immediately. Oiled equipment must also be cleaned and put back into service as soon as possible. After all, oil spills don't necessarily happen on your schedule.

**Slide 28 Do you know what to do in the event of a:**

- **Fire?**
- **Oil or Toxic Spill?**
- **Medical Emergency?**
- **Robbery?**
- **Accident?**
- **Bomb Threat?**
- **Gas Leak?**
- **Hostile Tenant?**
- **Power Outage?**
- **Earthquake?**

**Slide 29 FOUR STEP PROCESS:**

- **GENERATE BASIC INFORMATION  
“THE WHAT-IF”**
- **COMPILE SET OF PROCEDURES  
“THE WHAT-TO-DO”**
- **ACQUAINT ALL EMPLOYEES WITH CONTENTS**
- **REVIEW & EVALUATE ANNUALLY**

Slide 30 **Brainstorm with staff and local responders:**

<b>Sewage Back-up</b>	<b>Politician Arrives</b>
<b>Wild Animal</b>	<b>Tenant Accident</b>
<b>Tenant Accident</b>	<b>Lost Harbour Master</b>
<b>Snow Loading</b>	<b>Security Alert</b>
<b>Boat Fire</b>	<b>Other Incidents</b>
<b>Boat Sinking</b>	
<b>Mrs. Flanders’ 4th Grade Class</b>	
<b>Poisoning</b>	
<b>Vandals</b>	
<b>Bomb Threat</b>	
<b>News Reporter Shows Up</b>	

Slide 31 **Compile Procedures:**

**Immediate staff actions:**

- Gather Information**
- Evacuate Area**
- Notify management**
- Make response contacts**
- Report potential pollution**
- Secure Area**

**Continuing staff actions:**

- Provide support to responders**
- Notify medical facilities**
- Activate spill response plan**
- Deal with media**
- Maintain security**

**Use Color-Coded Tabs to indicate urgency of incident**

Slide 32 - **Discuss intent and contents**

- of Panic Book with all employees**
- Don’t forget temporary and part-time staff**
- Go over each incident**

- Discuss employee responsibilities
- Provide sufficient copies of Panic binder throughout marina
- Slide 33 Provide annual reviews of book contents
  - Add new scenarios
  - Update contact numbers
- Hold tabletop and live drills annually
  - Request response agencies to participate
- Keep Panic Books current
- Account for new or deleted staff positions
- Include additions or changes to facilities...yours and adjacent ones