2008-2010

Delaware River and Bay Oil Spill Advisory Committee Report

December 2010

This report is submitted by the Delaware River and Bay Oil Spill Advisory Committee (DRBOSAC) to the Commandant of the U.S. Coast Guard, the Governors of the States of New Jersey, Pennsylvania, and Delaware, the Committee on Commerce, Science, and Transportation of the U.S. Senate and the Committee on Transportation and Infrastructure of the U.S. House of Representatives as directed by the committee's charter dated October 1, 2007, and the revised charter dated December 2010.

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Acknowledgement

On behalf of the entire Committee, we are very pleased to submit the *Delaware River and Bay Oil Spill Advisory Committee Report, 2010.*

As a Committee we were charged to "provide advice, recommendations, and a ranking of priorities for measures to improve the prevention and response to future oil spills in the Delaware River and Delaware Bay" and to present a report detailing those recommendations and priorities to the Commandant of the U.S. Coast Guard, the Governors of the States of New Jersey, Pennsylvania, and Delaware, the U.S. Senate Committee on Commerce, Science, and Transportation, and the U.S. House of Representatives Committee on Transportation and Infrastructure. This report reflects the conclusions as agreed upon by the Committee members through majority vote.

On behalf of the entire Committee, we are thankful for the opportunity to support this effort. Over the past two years. Committee members have worked long and hard to conduct the extensive review and discussions that made this report possible. Committee members contributed countless hours researching, conferring and debating the issues, meeting tight deadlines, providing insight and education to one another, and unselfishly working to develop a consensus report. Thus, we would like to thank the Committee members who were active in this process for their outstanding professionalism, their knowledgeable and highly productive attitude, and their hard work to advance the state of spill prevention, response, and recovery in the Delaware River and Bay.

Additionally, special thanks goes to those members of the public, the governmental agencies, and the oil spill professionals and community who attended the meetings and contributed to subcommittee education sessions and discussions. Their efforts greatly assisted in the Committee's understanding of various topics.

It is also important to emphasize that this Committee and the report could not have been completed without the support of all U.S. Coast Guard Sector Delaware Bay personnel. CAPT Meredith Austin, CAPT David Scott, LCDR Nakeisha Hills and Mr. Gerald Conrad assisted throughout the entire process.

Thank you for the opportunity to assist in advancing oil spill prevention, response, and recovery in the Delaware River and Bay and for the chance to serve as the Chair and Vice Chair for such a remarkable group.

Sincerely,

CAPT Michael Linton, Chair

Edward T. Doyle, Jr., PhD, Vice Chair

Executive Summary - Delaware River and Bay Oil Spill Advisory Committee Report

The Delaware River is one of the highest volume oil ports in the United States and a critical environmental habitat. Therefore, minimizing disruptions in normal port operations and throughout the Delaware Valley estuary due to oil spills is a priority for the entire region. Since 1974 there have been 27 significant oil spill events on the Delaware River (significance being defined by the amount spilled, level of response, or the notoriety of the event). In ten of those events, more than 100,000 gallons of oil were spilled.

The Committee launched its efforts by developing an oil spill history for the River and Bay area, and members were somewhat surprised to discover how difficult it was to gather consistently accurate information on spills into the River or Bay. This was mostly due to the fact that there is no single depository of such information that is consistently managed and kept up to date. However, the history which members were able to piece together clearly shows that operational, vessel vetting, and vigilance issues, along with weather-related and navigational obstruction issues, have contributed to the occurrence these spills.

Overall, the Committee believes that many port stakeholders can within their scope of responsibility make individual process that will benefit the general spill prevention and response mission. The Committee's findings are detailed in the Recommendations section of this report. Although many of the recommendations will require congressional action, others can be handled by the local Area Committee, the States of Delaware, New Jersey, and Pennsylvania and the Mariners' Advisory Committee.

Congressional action will be needed for two main areas:

1) Legislation to allow the Captain of the Port greater authority for directing vessels in need of a place of refuge, and
2) Legislation to enable the Oil Pollution Liability Trust Fund or another mechanism to provide funding for the Area Committee to enhance its role and responsibilities in the prevention, preparedness, response, and recovery issues outlined in various recommendations.

There was much discussion of funding, and it is accurate to say the Committee would rather not mention money. However, it is a reality that must be addressed. Today, port security and counter terrorism issues command a lot of stakeholder attention, and rightfully so. But these issues also are accompanied by funding mechanisms to implement identified and needed prevention, response, and recovery measures. However, oil spill issues do not have a funding mechanism to help advance the identified preparedness needs, i.e., updating booming strategies, submerged oil research, periodic updates of Environmental Sensitivity Index (ESI) maps, establishing and

maintaining port-specific oil spill web sites, and maintaining a Geographic Information System (GIS) Spill Management Database.

Congressional funding also is needed to support the submerged and floating debris missions recommended for the port, to support Department of the Interior and National Oceanographic Atmospheric Administration (NOAA) updates to ESI mapping, to support reauthorization and maintenance of the Natural Resource Damage Assessment (NRDA) Type A computer models, and to increase the cap on damages that are recoverable after small spills to $1 million to reflect current restoration costs.

Area Committee action will be required for a variety of issues. The Area Committee is a standing Oil Pollution Act (OPA '90) group in Sector Delaware Bay whose primary role is preparedness and planning. The Area Committee is made up of various stakeholders including the States of Delaware, New Jersey, and Pennsylvania.

The DRBOSAC recommends enhancing the role of the Area Committee to encourage new active committee membership and funding of the committee for program development in the following areas:

- Submerged oil research, including both detection and recovery,
- Periodic updates of Environmental Sensitivity Index (ESI) maps,
- Establishing and maintaining national and port-specific oil spill web sites,
- A Geographic Information System (GIS) Spill Management Database,
- Protective and preventative booming strategies,
- Information gathering and identification of restoration needs projects,
- A spill of opportunity testing policy,
- Enhancement and maintenance of the Physical Oceanography Real-Time System (PORTS®),
- Collecting, housing, and maintaining oil spill information, and
- The use of volunteers during an oil spill.

The Area Committee, with proper funding and active leadership, can dramatically improve and/or provide the necessary guidance for improvements in these areas. Moreover, it can fill the gap that historically the industry-funded Delaware Bay and River Cooperative (DBRC) has provided, such as the booming of sensitive areas, revising booming locations, and developing booming strategies. With the recent closing of two local refineries and another's future reported to be in question, the DRBOSAC is uncomfortable that the industry co-op's funding in these areas will continue at an adequate level.

In addition, the Area Committee, with support from the states of Pennsylvania, New Jersey and Delaware, should prioritize the sensitive areas in the Area Contingency Plan and provide guidance for the capabilities and timeliness of response required.

State action should focus on reviewing the effectiveness and suitability of protective (pre-booming) of docked vessels and on strategies around pre-cleaning beaches and shoreline in order to minimize the amount of debris which could become contaminated in a spill area. These actions would reduce responder time, disposal needs, and cost in general.

The U.S. Coast Guard in consultation with the Area Committee, should look at the guidelines used for review of Facilities Response Plans required by 33 CFR Part 154. In addition, USCG Headquarters should strengthen the language of 33 CFR 155.1030 (h) so that the Tank Vessel Response Plans and the geographic appendices address the requirements of the Area Contingency Plans (ACP) for protecting fish and wildlife and sensitive environments.

The Mariners' Advisory Committee for the Bay and River Delaware (MAC) should spearhead discussions with the U.S. Army Corps of Engineers and USCG Sector Delaware Bay regarding reinforcing the responsibilities for reporting materials or equipment lost overboard or found during surveys and should evaluate the information exchange necessary among a much wider population of port users. It appears that the *Athos I* incident was caused by submerged debris which was unknown to several key parties. Routine information exchange among a much larger group of port users/mariners may significantly preclude incidents like this re-occurring. It would seem reasonable that the Mariners' Advisory Committee would want to be at the center of these discussions and to help find a process that will work for all parties involved.

Delaware River and Bay Oil Spill Advisory Committee – Overview

Purpose and Description of Duties

The DRBOSAC's Purpose

The purpose of the Delaware River and Bay Oil Spill Advisory Committee (DRBOSAC), as stated in its charter, is to "provide advice, recommendations, and a ranking of priorities for measures to improve the prevention and response to future oil spills in the Delaware River and Delaware Bay". Within 24 months of their appointment the members of the DRBOSAC are to present a report detailing those recommendations and priorities to the Commandant of the U.S. Coast Guard, the Governors of the States of New Jersey, Pennsylvania, and Delaware, the U.S. Senate Committee on Commerce, Science, and Transportation, and the U.S. House of Representatives Committee on Transportation and Infrastructure. This report will reflect only those conclusions as agreed upon by the Committee members through majority vote, and will not in any way be directed by the Coast Guard.

Overview of Membership

The DRBOSAC originally consisted of 27 voting members who have particular expertise, knowledge, and experience regarding the transportation, equipment, and techniques that are used to ship cargo and navigate vessels in the Delaware River and Delaware Bay, as well as those representing environmental and oil spill response organizations, fishing interests, academia, and the private sector. There are also five non-voting members who represent federal agencies and the state agencies of New Jersey, Pennsylvania, and Delaware that have an interest in oil spill prevention. The members of the DRBOSAC are appointed by the Commandant of the Coast Guard and approved by the Secretary of the U.S. Department of Homeland Security.

If, for any reason, a designated member is either unable to continue service on the Committee, or becomes a non-participant, the Commandant of the Coast Guard will appoint an alternate member to serve for the remainder of the absent member's term.

Membership on the DRBOSAC's subcommittee(s), if established, is open to the public; however, the chair of the subcommittee must be a current member of the DRBOSAC.

Meetings

The DRBOSAC is anticipated to meet in Philadelphia, PA, at least twice throughout the course its 18-month operational period with the first meeting being administrative in nature. The number of meetings held and the establishment of subcommittees are to be determined by the needs of the Committee.

Objectives and Scope

The DRBOSAC shall provide advice, recommendations and a ranking of priorities for measures to improve the prevention of and response to future oil spills in the Delaware River and Delaware Bay.

Method of Operation

The initial meeting of the Delaware River and Bay Oil Spill Advisory Committee took place on December 17, 2008. The meeting agenda included:

- A welcome and opening remarks from the then-Commanding Officer, Sector Delaware Bay, Captain David Scott,
- Introduction and swearing in of Committee members,
- Federal Advisory Committee Act and new member orientation by Mrs. Georgia Abraham, Committee Management Office, Department of Homeland Security,
- Special government employee recognition and certificates, Melanee Libby, USCG Headquarters,
- Chair and Vice-Chair elections,
- An oil spill response presentation,
- Establishment and purpose of subcommittees,
- Closing remarks.

The organizational meeting was lead by LCDR Sampson Stevens, LCDR Nakeisha Hills and Mr. Gerald Conrad, Sector Delaware Bay.

The Committee elected Captain Michael Linton, President of the Pilots Association of the Bay & River Delaware as Chair and Edward T. Doyle, Jr. PhD, Chair of Delaware County Local Emergency Planning Committee as Vice-Chair.

The Committee originally agreed to tentatively meet on a bi-monthly basis. The meeting schedule was adjusted in May 2009 to add an additional Committee meeting for September 2009 to accommodate a field trip to Lewes, DE, to board the Delaware Bay and River Cooperative (DBRC) vessel, *DELRIVER*, for an equipment and capabilities demonstration. All meetings were held at Sector Delaware Bay, the John Heinz Wildlife Refuge or the Marcus Hook, PA, Community Center. The schedule is immediately following.

Meeting Schedule 2008
December 17, 2008

Meeting Schedule 2009
Wednesday, January 21
Wednesday, March 18
Wednesday, May 20
Wednesday, June 17
Wednesday, August 19
Wednesday, September 9
Wednesday, October 21
Wednesday, November 18

Meeting Schedule 2010

Wednesday, January 20
Wednesday, February 17
Wednesday, March 17
Wednesday, April 7
Wednesday, April 28
Thursday, December 16

Typical Committee meetings were two or three hours in length generally beginning at 10:00 am and completing by 1:00 pm. Meeting agendas were posted on the Coast Guard web site Homeport and/or sent to members and non-members by email. Typically, an agenda included:

- Administrative items and updates
- Guest speakers or Informational Presentations
- Subcommittee Reports
- General Items for Discussion
- Public Comments

Meetings were open to the public and the public was given an opportunity during meetings to comment or make a request to make a presentation to the Committee or a subcommittee. In addition, some other public persons were asked to take part in subcommittee meetings because of their request to do so or because of their particular expertise, background, or knowledge that could benefit the subcommittee. These individuals were not part of the voting membership of the Committee or subcommittee and were strictly information resources.

Committee Membership

Vignuli, Frank	voting	Director Operations, Diamond State Port Corporation
Balzano, Joseph	voting	Executive Director, South Jersey Port Corporation
Walsh, James	voting	Director Operations, Philadelphia Regional Port Authority
Iuliucci, Fredrick	voting	General Manager , The Vane Brothers Co.
Gazzola, John, CAPT	voting	Vice-President, General Manager, Moran Towing of PA
Schuck, Gregory	voting	Chester Port Manager, Independent Container Line
Merbach, Kurt	voting	Safety Manager , Valero Refining Co.
Kelly, William	voting	Fire & Emergency Manager, Sunoco NE Refineries
Linton, Michael, CAPT	voting	President, Pilots Association of Bay & River Delaware, DRBOSAC Chair
Cuff, John, CAPT	voting	River Pilot, Pilots Association of Bay & River Delaware

Butler, Boise	voting	President, International Longshoreman's Association, Local 1291
Flimlin, George	voting	Marine Extension Agent, East Coast Grower's Association
Van Rossum, Maya	voting	Executive Director, The Delaware River Keeper Network
Maxwell-Doyle, Martha	voting	Deputy Director, Barnegat Bay National Estuary Program
VanDusen, William	voting	Manager, Merck & Co. (Representing Recreational Fishing Alliance)
Bushek, David, Dr.	voting	Asst. Professor., Rutgers Institute of Marine and Coastal Sciences, Haskin Shellfish Research Lab
Kreeger, Danielle, Dr.	voting	Asst. Professor, Biosciences and Biotechnology, Drexel University
Mosley, James	voting	Director of Public Safety, City of Wilmington, DE
O'Neal, Marilyn	voting	Interim Chair Sussex County, DE. Local Emergency Planning Committee
Clark, Leonard	voting	Deputy County Emergency Management Coordinator, Gloucester County, NJ
Barber, Vince	voting	Sr. Environmental Specialist, Hazardous Substance, Camden County, NJ, Department of Health
Doyle, Edward, Dr.	voting	Chair, Delaware County, PA, Local Emergency Planning Council, DRBOSAC Vice-Chair
Johnson, Eugene	voting	President, Delaware Bay and River Cooperative
Roales, Judith	voting	Retired Journalist (Representing General Public)
Mulvenna, Kathleen	non-voting	Emergency Manager, U.S. Army Corps. of Engineers, Philadelphia
Anderson Sr., Bennett	non-voting	Watershed Assessment Branch, Division of Water Resource, DE Department of Natural Resources and Environmental Control
Bauer, Robert	non-voting	Water Quality Spec. Supervisor, PA Department of Environmental Protection
Levine, Edward	non-voting	Scientific Support Coordinator, NOAA, Office of Response
Van Fossen, Robert	non-voting	Assistant Director Emergency Management, NJ Department of Environmental Protection

Yagecic, John	non-voting	Supervisor, Delaware River Basin Commission, Standard Assessment Section

Subcommittees

At the inaugural meeting Committee members were asked to sign up for a specific subcommittee assignment. Although all Committee members were allowed to attend and participate in multiple subcommittees, initial assignments were needed to ensure a mixture of expertise, interest, and discussion of possible concerns and issues. All Committee members volunteered for a primary subcommittee assignment, and some opted to sign on to other subcommittees because of interest or to monitor other subcommittee work and discussions.

Originally, the Committee established four subcommittees – Prevention, Response, Recovery, and Mitigation. Each subcommittee established a lead person and a mission statement for its work which followed general guidance provided by the Committee:

Prevention Subcommittee
This subcommittee will cover topics relative to planning for and prevention of oil spills to the Delaware River and Bay including but not limited to Port Community preparedness, planning activities, response plan fitness and area of coverage, navigation, OPA 90 requirements, new technologies, governmental/industry commitment, and port management issues along with the encouraging aspects of prevention activities.

Response Subcommittee
This subcommittee will cover topics related to the initial response to any and all oil spills in the Delaware River and Bay including but not limited to response capabilities, equipment inventories, equipment availability and fitness, regional support, volunteer issues and solutions, coverage of Average Most Probable Discharge (AMPD), crude oil typing and tracking, safety, and the positive aspects of response within the Sector along with potential recommendations.

Recovery Subcommittee
This subcommittee will cover topics related to the ability to recover from a spill to the Delaware River and Bay, including but not limited to application of advanced technologies, an inventory of recovery issues, preparation and research relative to recovery planning, recommendations for planning strategies, funding recommendations for recovery planning, plan implementation, and securing needed resources.

Mitigation Subcommittee
This subcommittee will cover topics related to the ability among Delaware River and Bay stakeholders to mitigate or lessen the impact of an oil spill on the environment, the area economy, and the area in general, including but not limited to the safe refuge for a stricken vessel, waterway management, new technologies, state and other governmental agency and responsible party activities, salvage, wildlife rehabilitation, special operations, and booming strategies.

After initial subcommittee meetings it became apparent that the Recovery and Mitigation subcommittees were following similar paths and had interest in similar issues so it was

decided at the March 2009 meeting to merge the subcommittees into one – the Mitigation-Recovery Subcommittee.

Report Timeline

As stated earlier, the Delaware River and Bay Oil Spill Advisory Committee (DRBOSAC) originally was chartered in October 2007; however, it was November 2007 before the Federal Register Notice establishing the DRBOSAC and requesting members was published. Solicitation for members ended in late January 2008 with more than sixty people willing to serve. The Commandant of the Coast Guard completed vetting and appointing 27 voting and six non-voting members in October 2008, and the first meeting was held on December 17, 2008, more than a year into the 18-month timeframe provided in the charter.

Although the window for work was greatly reduced, the committee worked diligently to review and discuss the issues surrounding oil spills in the Delaware River and Bay. To further complicate the Committee's efforts, in October 2009 official work was suspended because the DRBOSAC's charter expired. The new charter had to be reviewed and renewed by the new administration. However, to the credit of all Committee members, the subcommittees continued their work. Although Committee efforts were hampered by long governmental administrative delays, the Committee completed its work as outlined in both the original and subsequent charters.

The Committee conducted its final meeting on Thursday, December 16, 2010, at Sector Delaware Bay. All Committee members were notified of the meeting and 17 voting members were present representing a quorum of the 24 voting members who were still members of the Committee. The final vote was unanimous to accept the final report with minor changes to emphasize funding for oil spill preparation, response, planning and mitigation efforts in the Delaware River and Bay and to outline the reason for the report being completed in December 2010 rather than within the18 months of the original charter.

Committee Charters

As discussed in the previous paragraphs, delays in start up of the Committee and the charge of administrations resulted in two charters for the Delaware River and Bay Oil Spill Advisory Committee. Both the October 2007 and the December 2010 charters are found in Appendix A .

Delaware River and Bay Oil Spill Advisory Committee: Recommendations

Lessons Learned - Oil Spill History (R-1)

Recommendation: Information relative to oil spills should be housed with the Area Committee. This information should be kept current and include lessons learned.

Since 1974 there have been 27 significant oil spill events on the Delaware River (significance being defined by the amount spilled, level of response, or the notoriety of the event). Ten of those exceeded 100,000 gallons of oil spilled. A matrix of these spills in included as an appendix to this report.

The Delaware River is a high volume oil port. However, in attempting to develop an oil spill history for the river and bay area, the Committee was somewhat surprised to discover how difficult it was to gather consistently accurate information on spills to the river or bay. The difficulty was due primarily to the fact that there is no single depository of such information.[1]

The Committee utilized the information gathered to reflect on the varying causes of spills, to establish a point of reference on the occurrence and magnitude of spills, and to determine if there were common causes or contributing factors.

The following list demonstrates the types of information gathered:
January 1975: The *Corinthos*, a 754-foot crude oil tanker was offloading 315,000 barrels of Algerian crude oil at the BP Refinery terminal at Marcus Hook, PA, when it was struck by the *Edgar M. Queeny* which was maneuvering away from the dock at the Monsanto Chemical Plant across the river. An explosion and fire resulted and twenty six persons aboard the *Corinthos* lost their lives. Inspections of the *Queeny* for four years before the incident had shown that the stern engine had a damaged turbine and was only able to drive the ship at 50% of its rated power.

March 1986: The *Intermar Alliance*, a crude oil tanker carrying some 500,000 barrels of Ninian crude, lost steerage while striking the dock at the BP refinery in Marcus Hook. The vessel's #1 port tank sustained a 30-foot-long gash, spilling 189,000 gallons of oil into the river.

November 1989: The Chevron *World Radiance* was transferring oil at the Chevron Hog Island facility when severe weather struck. Shortly after the vessel began transfer operations, the National Weather Service had issued a Severe Thunderstorm Warning for the area. Winds of 40 knots were experienced, and the *World Radiance's* mooring lines failed; the vessel was pushed away from the pier; and 4,200 gallons of oil spilled into the river.

[1] Since the time when the DRBOSAC held their initial meetings, the Coast Guard posted on its HomePort Website an Oil Spill Compendium. The Compendium contains pollution related data and graphics from 1969 to 2008. See http://homeport.uscg.mil> Investigations – Marine Casualty/Pollution Investigations – Oil Spill Compendium 1969 to 2008.

July 1995: 56,000 gallons of West African Rabbi crude oil spilled into the river when the tanker *Jahre Spray* ruptured a transfer hose and manifold due to strong winds during transfer operations at the Coastal Oil Eagle Point terminal on the river at West Deptford, NJ.

November 26, 2004: The *Athos I*, coming into port, struck three submerged objects. As a result 265,000 gallons of heavy crude oil were released into the Delaware River affecting 115 miles of river and 280 miles of shoreline as well as fish, shellfish, and wildlife, including an estimated 16,500 birds. On January 20, 2006, the U.S. Coast Guard released its report on the *Athos I* oil spill. The report titled "Investigation into the Striking of Submerged Objects by the Tank Vessel *Athos I* in the Delaware River on November 26, 2004, with a Major Discharge of Oil" found, among other things:

- *"If Athos I had a double-bottom in place, the marine casualty would probably still have occurred, but it is very probable that the cargo tanks would not have been penetrated, thus avoiding a major oil spill. Evidence indicates the anchor penetrated the bottom of the hull on the Athos I a maximum of 18". The minimum void space in a double bottom as required under OPA 90 for a vessel of this design would have been 6'."*
- *"During the past year, 38 vessels had drafts greater than 35' (Athos I's draft was 36.5'). Investigators then compared the time of arrival with regards to the tidal stage (1 ½ hrs past slack tide with a flood current) for the Athos I to the other vessels and found that all other 38 (sic) vessels had arrived at a later tidal stage."*

Clearly, operational, vessel vetting, and vigilance issues, along with weather-related and navigational obstruction issues, have contributed to the circumstances surrounding spills in the river and bay. The Area Committee and the Maritime Advisory Committee should review and make recommendations relative to transit issues—requirements for when to transit and the circumstance for transit, weather advisories, and mariner notifications. Among the questions that should be addressed are the following:

- How are vessels/mariners advised of potential adverse weather conditions that should cause operations to cease?
- What effect does speed of a passing ship and its suction/surge have on tankers moored alongside docks?
- What are the basic guidelines for vessel vetting?
- Who should lead an outreach effort to restate the rules and requirements for mariners regarding notifying the USCG of navigational hazards?

Place of Refuge (R-2)

Recommendation: Congress should consider legislation that would give the Captain of the Port greater authority for directing vessels in need of a place of refuge. The Sector Delaware Bay Area and Maritime Committees jointly should develop a Place of Refuge Guide for the Sector Delaware Bay Area. Funding for technical assistance should be provided for this effort. The local port authorities and waterfront facilities must be part of this effort, and ideally could identify and maintain a facility as a Place of Refuge in the Port.

A place of refuge is a location to which a vessel needing assistance can be moved temporarily and where actions then can be taken to stabilize the vessel in order to protect human life, sensitive natural and cultural resources, historic properties, national defense, security, economic interests, and critical infrastructure, and to reduce or eliminate a hazard to navigation. For example, a place of refuge could be used during an actual release or threatened release of oil or hazardous material from a tank vessel. It could also be used for any vessel as the result of a threatened or actual terrorist attack.

There is no simple solution to bringing a stricken vessel into port. However, there are tools available from the Commandant of the Coast Guard, the National Response Team, and the International Maritime Organization that can be used by decision makers to deal with safe refuge requests. The Port of Houston/Galveston has developed a comprehensive Harbor of Refuge Plan that could be used as a template for any port.

There are two safe refuge circumstances that the Response Subcommittee considered. The first is when the vessel in need of assistance may be destined for some other port but requests safe refuge within Sector Delaware Bay's Area of Responsibility (AOR). The second circumstance is when a vessel traveling to or from a port on the Delaware River encounters a problem that requires actions to be taken to stabilize the vessel. In these circumstances, the Captain of the Port (COTP) has the authority to order vessels into and out of port or to an anchorage. However, the COTP does not have the authority to order a waterfront facility to accept a stricken vessel. This limits the options for the COTP. Additionally, there is no waterfront facility within the port that is "set aside" and designated as a "place of refuge facility" that will accept a stricken vessel. All available waterfront facilities are conducting business, and a stricken vessel moored to any of the facilities would disrupt that facility's operations. The issue of place of refuge is one that concerns the entire port community (federal, state, and local governments, port administrations, and private industry), not just the COTP.

There are several actions that should be pursued in addressing the place of refuge problem:

- Congress should pass legislation to give the Captain of the Port authority to direct a vessel to a waterfront facility which would work in coordination with state agencies when public safety or resources are threatened. The legislation should include at least the following:

  - Compensation to the facility for use by the vessel,
  - Responder immunity from claims brought by third parties and the vessel for losses allegedly caused by the facility during the vessel's usage,
  - A dedicated source of funding to provide the required compensation, and
  - An administrative process to promptly adjudicated claims for compensation.

- Request funding for a "Places of Refuge Guide for the Sector Delaware Bay Area". This guide should use the "Harbors of Safe Refuge Guide for the Houston-Galveston Area" as a model and should be developed with broad public participation of Delaware Bay area communities as well as all state and federal agencies with responsibilities for public safety and resources. Both the Sector Delaware Bay Area Committee and Maritime Security Committee need to be involved in this effort and will require strong leadership from the COTP.

- Recommend that local port authorities and waterfront facilities work together to identify and maintain a facility -- not located within sensitive habitats -- that is continuously available as a place of refuge facility.

- Pre-identify and establish a core group of personnel who will complete the Places of Refuge Risk Assessment Job Aid within Commandant Instruction 16451.9. This group can be modeled after the Maritime Transportation System Recovery Unit.

Enhance the Role and Responsibilities of the Area Committee and Provide the Committee with Funding for Oil Spill Prevention, Response, and Recovery Programs (R-3)

Recommendation: Consider enhancing the role of the Area Committee and expanding membership in the Area Committee to include all facets of the port community, and provide a funding mechanism through the Oil Pollution Liability Trust Fund to enable the Area Committee to enhance prevention, response, and recovery programs and activities.

Sector Delaware Bay is susceptible to oil spills as outlined in the Committee's spill history research (recommendation R-1). The Sector, however, does enjoy a cooperative environment among local industry including six major refineries, response organizations such as Delaware Bay and River Cooperative (DBRC) and Tri-state Bird Rescue and Research, experienced and professional mariners such as the Pilots Association of the Bay & River Delaware, state environmental agencies from the three states, and watch groups such as the Delaware River Keepers. This provides a positive climate for spill prevention and response.

The Committee wrestled with many of the issues that lead to the various recommendations. But the most difficult is the issue of funding of recommendations and future work to enhance spill prevention, response, and recovery. Funding seems to be the common thread in many issues the Committee reviewed. Too many times the Committee debated points and worked to consensus only to find that funding is the basis of moving forward to resolve the issues. It would be irresponsible to say "Here is the issue and here is the solution; let's move forward," without discussing cost and funding concerns.

The Committee recommends that the Area Committee should work with its membership to identify projects that are needed to enhance oil spill prevention and response. For example, the area Environmental Sensitivity Index (ESI) mapping should be updated. The Area Committee, with proper funding and continued COTP leadership, should designate the updating criteria and upgrading cycle for ESI maps and fund the project accordingly. Another example is booming strategies. Historically, the DBRC, using industry funding, has researched the booming of sensitive areas, reviewed and revised booming locations, and updated booming strategies along the Delaware River and Bay. However, the recent closing of two local refineries – and the future of a third in question -- calls into doubt the availability of funding for these activities in the future.

In the years since September 11, 2001, funding for security issues relative to the Sector and in ports across the nation has increased immensely. Likewise, oil spill prevention, response, and recovery should be funded appropriately. The Committee recommends funding through the National Oil Spill Liability Trust Fund. This trust fund is a mechanism which already exists, which is dedicated, in part, to research and development, and which has been used for oil spill prevention, response, and recovery projects in other areas of the country.

The Committee has found many issues relative to oil spills that could be resolved with adequate funding and leadership. The regional port community as a whole has worked well together to

foster prevention, response, and recovery ideas and methodologies. The Committee also found an attitude of wanting to foster a proactive oil spill response environment among its members. The Committee feels this environment can be accomplished by enhancing the role of the Area Committee, working to encourage new active committee membership, and funding the committee for program development in the areas of submerged oil research, periodic updates of ESI maps for all coastal areas, establishing and maintaining national and port-specific oil spill web sites, developing a Geographic Information System (GIS) for oil spill response including protective and preventative booming schemes, and enhancing and the Physical Oceanography Real-Time System (PORTS®).

Levels of Communication/Communication Operating Procedure (R-4)

Recommendation: Provide for an enhanced communication to mariners relative to navigational hazards and reiterate to mariners their role and responsibility to report material and equipment lost overboard.

Questions were raised during discussions about the level and types of notification to mariners regarding navigational hazards. Discussion involved the various means and the federal agencies mariners would look to for navigational information. The obvious two agencies are the U.S. Coast Guard and the U.S. Army Corps of Engineers (USACE), with the communication of navigational hazards being the responsibility of the USCG. Today, more and more methods of communication are available to facilitate the exchange of information between individuals and organizations. These methods should be explored and communication procedures updated accordingly.

Currently, the U.S. Army Corps of Engineers, Philadelphia District, maintains and updates a website which provides the latest surveys of navigation channels. This is a public access website (http://www.nap.usace.army.mil/channel/index.htm) that allows anyone to view and download the latest channel exams. The District should evaluate the practicality of adding a channel survey schedule to the website to further inform the public of upcoming or proposed surveys. The website should be more user friendly for public use; for example, channel surveys should be named for ease of access.

With regard to communication of navigation hazards to the public, as stated above, ER1130-2-520, NAVIGATION AND DREDGING OPERATIONS AND MAINTENANCE POLICIES, 29 Nov 96, Paragraph 5.c. specifically addresses the public notification responsibility and states "The Coast Guard has authority to disseminate and maintain navigation safety information pertaining to obstructions and is the lead agency responsible for this type of information." The USCG will issue Marine Safety Information Bulletins (MSIB) when a hazardous navigation situation exists, and they will rescind/update that MSIB when conditions have changed. USACE will support the USCG, whenever possible within the constraints of authority and vessel availability, with supporting data to determine the nature and extent of the navigation hazard.

The USCG is the correct federal agency to communicate Marine Safety Information. Having a single federal agency responsible for communicating navigation hazards and restrictions to the public prevents the distribution of incorrect or differing information. The maritime community should be aware that the USCG is the single source for the status of navigation safety and restrictions. The USACE Philadelphia District information is viewed as providing a supplemental source of channel condition data via its website and the latest channel exams.

Another part of this issue concerns the amount of knowledge mariners have regarding their responsibilities to notify the USCG of materials or equipment lost overboard. It would seem, as a result of the *Athos I* incident, where submerged debris was a prime contributor to a major spill, that mariners may not know or understand their responsibility or the consequences of not

reporting materials or equipment lost overboard. It would seem prudent that the Mariners' Advisory Committee consider an outreach program to reiterate to mariners their responsibility to report, the consequences for not reporting, and the potential navigational impacts of unreported debris.

Debris Removal Program (R-5)

Recommendation: All efforts should be made to enhance detection of submerged objects and to strengthen lines of communication to mariners regarding hazards to navigation.

There was much discussion regarding submerged objects, floating debris, and communication of navigational hazards to mariners, especially since the 2004 *Athos I* incident was reported to have been caused by a submerged object in the vicinity of the ship's docking area.

Submerged objects in the channel or in the vicinity of the channel are hazards or potential hazards to navigation conflicting with the potential safe passage of all vessels including crude oil tankers. Through discussion, the Committee recognized that there are three requirements for a successful submerged debris program:

- Those responsible must report lost or sunken objects such as vessel equipment or cargo lost overboard;
- Channels and anchorage areas must be surveyed for submerged objects that pose a hazard to navigation (which is the mission of the U.S. Army Corps of Engineers); and USACE should communicate the information with other maritime stakeholders;
- Commercial dock operations, including marine transfer facilities, must communicate berth conditions, including draft, to vessels.

ER1130-2-520, NAVIGATION AND DREDGING OPERATIONS AND MAINTENANCE POLICIES, 29 Nov 96, specifically addresses the procedures and authorities of the U.S. Coast Guard and the U.S. Army Corps of Engineers (USACE) with regard to submerged obstruction in the navigation channel. Appendix B of that document is a signed Memorandum of Agreement (MOA) between USCG and USACE that defines how hazards to navigation are determined and the action that should take place to deal with them. Paragraph 5 of the MOA explains the required actions, including assessment of the impact to navigation.

The USACE Philadelphia District generally surveys all active navigation channels at least twice annually. Some areas that experience higher than average shoaling rates are surveyed more frequently. Additionally, the District will survey areas upon request of the USCG or port users if there is a suspected issue with regard to navigation safety.

Following the *Athos I* spill, the USACE Philadelphia District did perform a target obstruction survey of the Delaware River which identified hundreds of "hits" on the river bottom; however, none of these was within channel limits. Obstructions outside of the federal navigation channel limits pose a limited threat to safe navigation. To address submerged debris hazards outside the federal navigation channel limits (such as in private berthing areas), the DRBOSAC recommends that Congress fund a competitive grant program for submerged debris identification, prioritization, and removal. Such a program would enhance port community efforts to ensure safe berthing areas.

Although there are numerous submerged objects throughout the Delaware River, the USACE and the USCG currently have no authority or responsibility to remove or report them unless the objects are impacting the federal navigation channels or anchorages or creating a pollution threat. As demonstrated during the *Athos I* spill, however, objects adjacent to or below the plane of the federal navigation channel and anchorages could pose an increased risk during certain navigational or operational conditions. The Mariners' Advisory Committee or the Local Area Committee should be tasked with investigating whether an expanded submerged debris removal mission and capabilities would reduce the risk of spills caused by ships striking submerged debris. The MOA should be reviewed to ensure there is proper procedure for the reporting of potential navigational hazards and that such hazards are documented and charted, that action is taken, and that reports to mariners are accomplished in an efficient and timely manner.

Another issue that should be addressed is the importance of commercial dock operators, including marine transfer facilities, establishing safe berth guidelines and communicating those guidelines to vessels that call on them. In addition, operators should be required to periodically survey their berths as appropriate and communicate findings to vessels in a timely manner to ensure that ships come up the river at the appropriate draft.

Update NOAA Environmental Sensitivity Index Maps (R-6)

Recommendation: Update the 1996 edition of the Delaware Bay Environmental Sensitivity Index (ESI) maps and provide funding for this update and periodic updates of all coastal regions in the future.

The current edition of the Delaware Bay ESI Maps was produced in 1996. It is out of date and new environmental data and information should be incorporated. Data supporting the 1996 edition predated advanced Geographic Information System (GIS) capabilities now utilized by the natural resource agencies at the state and federal level, by non-governmental organizations, and academia.

The ESI maps are used by responders during the time of an oil spill incident to identify and assign protection and mitigation priorities. Watershed-based local industries likewise utilize Environmental Sensitivity Index (ESI) maps to identify required resource protection priorities and strategies during planning, drills, and real incident response. ESI maps are used as the basis for identifying sensitive areas for inclusion in the Area Contingency Plan (ACP) and as a further basis for completing the Sensitive Area Sheets contained within the ACP.

Since their creation, ESI maps have evolved and the version produced for the Delaware Bay no longer reflects the state of the art. Additionally, the current version does not contain up-to-date capabilities such as digital geo-referenced aerial photography produced by NOAA.

In view of the outdated nature of the existing edition of the ESI maps, it is imperative to update the maps to the current level of environmental natural resource data and information in order to adequately protect the natural resources of the Delaware River and Bay and the Atlantic Ocean Area of Responsibility for the USCG Sector Delaware Bay. With the development of a GIS Spill Management Database, the ESI mapping database should become an integral component of the ACP.

There should also be a national requirement that all ESI maps be updated on a regular and ongoing basis. The DRBOSAC recommends that updates be produced not more than every ten years, to ensure the accuracy of the maps and their ability to provide maximum response assistance and value. Congress should provide funding to NOAA to carry out the updating and to fund states and other federal agency participation.

Development and Maintenance of Area Protection and Countermeasure Plans (R-7)

Recommendation: The Sector Delaware Bay Area Committee should assume control of the existing protective booming plans and develop additional countermeasure plans for the entire Sector area. With the development of a Geographic Information System Spill Management Database, Protection Strategies and Countermeasure Plans should become an integral component of the Area Contingency Plan. Dedicated funding for the development of plans, testing of plans, and maintenance of plans must be provided. This same type of planning and testing should be provided nationally for all area plans.

Starting in the mid-1970s, the Delaware Bay and River Cooperative (DBRC) began developing protective booming plans for openings to wetlands along the Delaware River in the Philadelphia area where DBRC member refineries are located. This effort continued through 1990 when 16 plans had been developed and equipment to implement the plans had been procured and stored at member facilities. During this time frame the protective booming plans were tested and refined and used during spill responses. In 1992, DBRC contracted to have booming plans developed for all openings into wetlands of the Delaware River and Bay from the Betsy Ross Bridge in northern Philadelphia to the mouth of the bay. In 1993, DBRC contracted the preparation of an appendix to DBRC's response plan that contained all known environmental data (Environmental Sensitivity Index Maps, member company-specific information, and any other available information) and the protective booming plans into a single document which all member companies could reference to satisfy the OPA 90 regulatory requirements. Copies were provided to the states of Delaware, New Jersey, and Pennsylvania, the USCG Marine Safety Office Philadelphia, and the Environmental Protection Agency. The annex was four inches thick, printed in color, and weighed ten pounds. It could not be incorporated into the Area Contingency Plan (ACP) because of the cost to reproduce -- $350 per copy!

In 2000, DBRC contracted the conversion of the paper annex to electronic format in PDF documents, and copies were given to all who had the paper copies and to nonmembers of DBRC who requested them. Between 2000 and 2006, DBRC worked with New Jersey and Pennsylvania to develop plans for Delaware River openings into wetlands from the Betsy Ross Bridge to Trenton, NJ, which is the upper end of navigable waters. DBRC also worked with New Jersey to transform paper plans for ocean inlets into electronic format. In 2006, when the ACP was converted to electronic format, the protective booming plans were included.

DBRC continues to maintain the master plans and reviews the plans after every deployment. Major changes to the plans also were made based on lessons learned after the *Athos I* spill. The booming plans are now in a Geographic Information System (GIS) database, which DBRC has provided to the Coast Guard, the states, and member companies.

While DBRC has historically developed, maintained, and exercised the protective booming plans, it is a voluntary activity. The recent closing of two refineries in the Delaware Valley indicates that the industry may be going through significant changes, and DBRC may not be able

to fund such efforts in the future. The Area Committee should assume control of protective booming plans using the DBRC-provided GIS software. If a GIS system is developed for the Sector (recommendation R-10), the booming plans should become part of that system and should be supported and maintained by contracted resources.

The protective booming plans for openings to wetlands along the Delaware River and Bay are an important component of the oil spill response plan, but there is also a need for other countermeasure plans for resources at risk in the river, bay and ocean. The Area Committee should address this need. The Ecological Risk Assessment of lower Delaware Bay performed in 2006 as part of a consensus workshop sponsored by the Sector Delaware Bay Area Committee was the type of systematic approach that needs to be used throughout the area. The report of this workshop can be found at www.ecosystem-management.net/c/7/project-reports/. Such work will require a long-term effort.

Funding from the Oil Spill Liability Trust Fund should be dedicated to accomplish these long-term efforts to develop countermeasures as well as to maintain and exercise all protective plans.

New Recovery and Treatment Technology (R-8)

Recommendation: Funding should be allocated for additional research into new treatment technologies such as chemical agents for dispersants, surface washing, bioremediation, surface collecting, and miscellaneous oil spill control agents in fresh water as final clean up techniques for future oil spills within the Delaware River. The Area Committee should develop a section for chemical agents in the Area Contingency Plan.

During oil spill cleanup, mechanical techniques are used to remove most of the oil at a shoreline. However, such techniques leave behind small quantities of residual oil. This remaining oil still may be biologically available and may continue to cause damage to the environment, so it needs to be removed, and bioremediation may be the appropriate tool.

The use of various chemical agents can be an effective cleanup option. However, the chemical agents currently on the National Contingency Plan (NCP) Product Schedule (40CFR § 300.900 Subpart J—Use of Dispersants and Other Chemicals) have not undergone testing that provides sufficient information on their efficacy in fresh water and varying temperatures.

Under 40 CFR § 300.910 (a) (Authorization of use) *"…the Area Committees shall address, as part of their planning activities, the desirability of using appropriate dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents listed on the NCP Product Schedule. ACPs shall, as appropriate, include applicable preauthorization plans and address the specific contexts in which such products should and should not be used. In meeting the provisions of this paragraph, preauthorization plans may address factors such as the potential sources and types of oil that might be spilled, the existence and location of environmentally sensitive resources that might be impacted by spilled oil, available product and storage locations, available equipment and adequately trained operators, and the available means to monitor product application and effectiveness."*

Based on these requirements, the Area Committee should:

- Research and catalogue the types of petroleum products that transit through the Delaware Bay and River, and
- Develop additional testing protocol for the Swirling Flask effectiveness test methods (described in appendix C to CFR § 300) to require using the types of oil that might be spilled in the Area, fresh water, and varying water temperatures.

After completion of the cataloging, the following tasks should be completed:

- Notification of the chemical manufactures on the NCP Product Schedule about the preauthorization plans and additional testing protocol for the Swirling Flask effectiveness test methods,
- Evaluation of the various petroleum products to determine which products are amenable to bioremediation,

- Determination of the different types of shorelines present throughout Delaware Bay and River and evaluation of which shoreline types would be amenable to bioremediation,
- Evaluation of the shorelines amenable to bioremediation and determination of what nutrients or biological conditions are needed to increase the natural attenuation rate of the petroleum products through bioremediation,
- Establishment of protocol for testing various chemicals during a spill of opportunity.

Without this research it is unknown which biologically-available petroleum products could be further removed after the completion of traditional mechanical removal techniques, thereby further reducing the overall impact to the environment.

Modernize and Update the Natural Resource Damage Assessment Type A Model Used for Small Spills (R-9)

Recommendations: Congress should reauthorize and provide funding to the Department of the Interior and NOAA for updating the Natural Resource Damage Assessment Type A computer models to reflect advances in computer modeling, in the effects of contaminants on the eventual return of natural and social resources to their pre-spill baseline conditions, and in current restoration procedures. Congress also should increase the damage cap from $100,000 to $1 million to realistically reflect today's restoration costs for small, but high value, habitats.

The Natural Resource Damage Assessment (NRDA) is the process by which Trustees of the resource management agencies document injuries and losses and determine damages when oil or hazardous material spills harm natural resources. Certain categories of parties responsible for a release or discharge, known as "responsible parties" (RPs), are liable for natural resource damages if the release or discharge results in injury to natural resources. Natural resources include land, fish, wildlife, plants, air, and water which the Trustees manage on behalf of the public.

Trustees must use the recovered damages to fund restoration, rehabilitation, or replacement of injured natural resources, or acquisition of equivalent natural resources. These actions, often referred to collectively as "restoration," are principally designed to return injured resources to baseline (i.e., the primary condition that would have existed if the release or discharge had not occurred). Compensatory restoration also can compensate for the public's interim loss of injured resources or services during the time period from the onset of injury until baseline is restored.

The NRDA Type A computer model procedure was designed for minor spills in coastal or marine areas and incorporates the Natural Resource Damage Assessment Model for Coastal and Marine Environments (NRDAM/CME). Users supply limited data, such as basic physical environmental conditions and the amount, location, and duration of the spill; then the NRDAM/CME model computes the physical fate of the spilled substance and estimates acute lethal effects (injury). The model then estimates and sums the cost (damage) of restoring to baseline pre-spill conditions and the value of certain lost interim public uses and services, such as hunting, fishing, bird watching, and beach visitation.

The existing Type A NRDA/CME model was last updated very early in 2000 and runs on the Windows 95 operating platform which is now completely out of date and not available to run this Type A model. The only alternative is the Type B model which entails assessing and calculating injury and damages in a labor-intensive and time-consuming process. This generally requires hiring specialized contractors and using massive amounts of resource agencies' staff time in compiling the required restoration plan and in its implementation. For small spills, this process is an unnecessary burden on both Trustee agencies and Responsible Parties.

Also, because Type A procedures are intended for minor spills, the regulations currently place a $100,000 cap on their use if Trustees intend to obtain a rebuttable presumption. In addition to the outdated operating platform, this $100,000 cap on restoration costs also is outdated. Under today's standards, that amount would not restore even one acre of high value wetlands. The cap should be increased to at least $1 million while still maintaining the rebuttable presumption option.

The practical value of this Type A program is that it is aimed at small spills and provides a low cost, fair, and scientifically defensible evaluation of resource injury, damages, and restoration costs, thus saving both the responsible party and Trustees time and money in coming to agreement on final restoration specifics. However, because of the loss of Type A computing capabilities, the result across the nation generally has been that small spills go unresolved, to the detriment of the public interest and the impacted environment and ecology. An updated program would enable an efficient resolution to small spills and finality to the Trustees' responsibility in those small spills.

Geographic Information System Spill Management Database (R-10)

Recommendations: Procure a spill management database using the Environmental Response Management Application jointly developed by NOAA and the University of New Hampshire as the framework. This system would be suitable for oil spill activities and Maritime Security activities. Activities include planning, exercises, and response to real events both natural and human induced. Funding for the initial development and for ongoing maintenance must be provided. A continuing source of funding could be the Oil Spill Liability Trust Fund.

Increasingly, more spill related data and tools are digital in nature. Tying data to a geographical map-based format is becoming commonplace and the three states in Sector Delaware Bay employ the same software platform. Recently the Sector has begun to transition to Geographic Information System (GIS) capability as well. What is lacking at this point is a centralized GIS spill management database platform. This GIS platform is needed to bring all spill related data into one centralized location, allowing responders access to the latest real-time data in a quick, user-friendly manner. A web-based portal offers many advantages as a tool to bring real-time data to responders. Real-time weather, tides, and current databases, to name a few, are available 24/7. Maps of natural resources also are maintained to varying degrees on the web. Many of these portals can be viewed in a Google Earth format making it easy to visualize in a typical GIS layering manner. One example is the National Wetlands Inventory maps of the whole United States which are available to the public with free access on the U.S. Fish and Wildlife Service website at www.fws.gov/wetlands/. Many spill management teams also have their own proprietary version of GIS-based spill management systems.

NOAA is ready to release a PDA version of the electronic Shoreline Cleanup Assessment Team (eSCAT) documentation that is digital except for the sketch function, which is still in paper/hard copy format. SCAT data captured digitally in the field can be transmitted into a digital access database at the command post for use by planning, operations, and natural resource damage assessment units. This digital data can be exported into a functional spill response GIS platform to establish and analyze situational awareness and spill progress and to target trouble areas in need of additional support.

The states within Sector Delaware Bay have GIS databases of their natural resources. Many of the federal agencies also have similar digital databases. The Delaware Bay and River Cooperative (DBRC) likewise has its version of a digital database that forms the core of a portion of the Sector Area Contingency Plan and the DBRC's own response management program. A centralized GIS database that can pull various existing disparate data into a real-time access portal to supply spill related decision making information is critical for a successful spill response.

There are a number of approaches to addressing this centralized GIS spill database platform issue. One approach is to use the Environmental Response Management Application (ERMA)

jointly developed by NOAA and the UNH. ERMA is a data platform capable of interfacing diverse spatial data sets into an internet-based mapping format in order to enhance decision making for hazard responses (such as oil spills) and restoration. ERMA is a web-based GIS application that combines real-time web databases and uses Google Earth as the basis of its GIS platform. This system has been successfully implemented and used in Southern New England and Puerto Rico[2]. Using this framework would save considerable development and implementation costs.

[2] Since this recommendation was originally written, ERMA was also successfully used in the Gulf of Mexico for the DEEPWATER HORIZON incident response.

Facility and Vessel Oil Spill Response Plans (R-11)

Recommendation: In consultation with the Area Committee, USCG Sector Delaware Bay should review the guidelines used for review of Facilities Response Plans required by 33 CFR Part 154. Sector Delaware Bay Area Committee should prioritize the sensitive areas in the Area Contingency Plan and provide guidance to the plan review staff as to the capabilities and timeliness of response required for sensitive areas. USCG Headquarters should strengthen the language of 33 CFR 155.1030 (h) so that Tank Vessel Response Plans address the requirements of the Area Contingency Plan for protecting fish and wildlife and sensitive environments. The local Captain of the Port should review the tank vessel geographic appendices for compliance with the local Area Contingency Plan.

33 CFR Parts 154 and 155 require facilities and certain vessels to prepare Oil Spill Response Plans. The regulations have very detailed requirements on how the plans are to be prepared and what they must contain. 154.1035 (b) (4) requires facilities to plan for protecting fish and wildlife and sensitive environments identified in the Area Contingency Plan (ACP). For tank vessels, 155.1030 (h) requires that information contained in the response plan be consistent with the most recent ACP. However, it does not require planning for wildlife and sensitive environments. 155.1045(i) requires geographic-specific appendices for each Captain of the Port zone but only requires listing of Oil Spill Response Organizations (OSROs) that are under contract for the Area.

As part of the investigation of these requirements, the Sector Delaware Bay Facility Plan Review staff was asked to explain the process used during review of facility plans in the Sector. The Sector was utilizing guidelines put out in the 1993 time frame before the Area Contingency Plans were developed. The plans for the facilities were not being reviewed to see if the requirements of 154.1035 (b) (4) were being met. The plans for vessels are reviewed at USCG Headquarters and the Sector has no role in that review. In fact, the local ACPs are not used in that review. The required geographic appendices merely list the response organizations under contract and do not take into consideration the local requirements for protecting sensitive areas and the contractors' ability to protect the areas as required by the ACP.

It appears that Sector Delaware Bay has now revised its guidelines for review of facility plans. Subsequent to the Sector presentation, at least one facility within the Sector was required during an inspection to have the information showing how the requirements of 154.1035 (b) (4) were being met. The Sector Delaware Bay Area Committee should review the guidelines used by the Facility Plan Review staff and provide guidance to plan reviewers as to what should be required in the specific areas above and below a facility's location on the river or bay and what should be reflected in the facility's response plan.

The Area Committee should establish a procedure for the evaluation of the Environmentally Sensitive Areas identified in the ACP for Sector Delaware Bay and develop a ranking system to protect fish and wildlife and sensitive environments. The ranking system should take into

consideration seasonal variations and weather conditions. The ranking should establish maximum response times for the deployment of the required booming strategies and commencement of recovery and mitigation activities. In accordance with 33CFR154 Subpart F Section 154.1045, *"The resources and response methods identified in a facility response plan must be consistent with the required resources and response methods to be used in fish and wildlife and sensitive environments, contained in the appropriate ACP. Facility owners or operators shall ensure that their response plans are in accordance with the ACP in effect 6 months prior to initial plan submission or the annual plan review required under §154.1065(a). Facility owners or operators are not required to, but may at their option, conform to an ACP which is less than 6 months old at the time of plan submission."* The Area Committee should update the ACP upon the completion of the ranking system and required response times and should provide guidance to the USCG facility plan reviewers. Facility Response Plan holders should be notified of the ACP revisions and Sector Delaware Bay should revise its guidelines for review of facility plans to ensure that the necessary revisions have been incorporated.

The majority of the large spills in the Sector Area involve tank vessels as shown in the Sector Delaware Bay Significant Spill Events document in the appendix of this report. The Sector and the Area Committee have no control over tank vessels and their capabilities to meet the requirements of the Sector Delaware Bay Area Contingency Plan. The Coast Guard needs to strengthen the language in 33CFR Part 155 to require that the geographic appendices for each Captain of the Port zone transited show how the vessel response plans will satisfy the ACP for the zone. The geographic appendix for a vessel plan should be forwarded to the Captain of the Port for the geographic area for review.

Submerged Oil (R-12)

Recommendation: Fund USCG research and development efforts for detecting, tracking, and recovering submerged oil. Use the Oil Spill Liability Trust Fund to fund the research and development effort as was done in the past for other oil spill research and development. When the detecting, tracking, and recovery technology is developed, the Area Committee should determine the quantities of detecting and recovery equipment required in a Sector depending on the volumes and types of heavy oil transported in the Sector.

Submerged oil is oil that sinks below the water surface. It may float submerged in the water column anywhere from just below the surface to just above the bottom. Submerged oil also may sit upon the bottom or even become imbedded in bottom sediments. The Delaware River and Bay has a history of submerged oil spills going back at least to the *Presidente Rivera* spill in July 1989 in which the spilled #6 bunker oil lost its buoyancy shortly after being discharged in the Delaware River near Claymont, DE. It was theorized that the normally just-barely-buoyant oil picked up sediment to the point that it sank in the brackish water. As the submerged oil moved down river into the bay and entered denser saltwater, some of the oil started to regain its buoyancy and resurfaced. Likewise some of the denser oil continued submerged down the bay and out into the ocean, and some of it was later found resurfaced as far away as the Carolinas, where chemical tests identified it as *Presidente Rivera* oil.

Once oil becomes submerged it can no longer be contained and recovered by conventional methods. Likewise, booming is no longer effective to protect industrial and public drinking water intakes and other sensitive areas. This became an issue at the Salem, NJ, nuclear power plant cooling water intakes during the *Athos I* spill, resulting in a shutdown of the nuclear power plant.

There are two submerged oil issues that must be addressed. First is the detection and tracking of the submerged oil in the water column (speed, direction and depth) or its location on or just above the bottom. Detection techniques must be able to differentiate oil on or near the bottom from the bottom sediments themselves and any benthic community inhabitants, such as sea grasses, algae, coral or other colonial assemblages. Second is the challenge of recovering the submerged oil. Methods must be developed that will recover the oil with minimal adverse impact upon the benthic community. Even in clear water, as was the case in the 1994 *Morris J. Berman* spill in Puerto Rico, recovery of submerged oil is costly and an environmental challenge.

There are a number of research studies directed at the submerged and heavy oil problem. Existing off-the-shelf as well as emerging technologies are being evaluated. The intent of USCG R&D is to develop detection and recovery technologies so that industry then can be required to provide these response capabilities where heavy oils are transported or stored.

Protective (Pre-booming) (R-13)

Recommendation: Booming docked vessels that are engaged in product transfer or loading/off loading activities should be a basic requirement in order to enhance spill response and containment of spilled material.

Booming as a protective strategy has been a constant in spill preparedness and spill response. Booming is a basic industry strategy to minimize and contain spilled material. Booming, the placement of protective or containment barriers in strategic areas, is one of the first response measures taken to help prevent the spread of a spill and to collect as much material as possible. Booming strategies are often outlined and discussed in Area Contingency Plans, Facility Response Plans, and Spill Prevention and Countermeasures Plans. In Sector Delaware Bay, response after a spill relies heavily on the booming strategies that have been developed. But protective (pre-booming), in the form of deploying boom around a vessel that is transferring, loading, or offloading its cargo, could further enhance the ability to contain and minimize the spread of materials should a spill occur. At present, only the state of New Jersey transfer of hazardous liquids regulations (58:10-23.11f2) requires protective booming or containment of docked vessels with cargoes. The regulation basically requires that *"no owner or operator of a refinery, storage, transfer terminal, or pipeline facility, or a vessel while in the waters of the State, shall transfer, or authorize or allow to be transferred any hazardous liquid between any such facility and a vessel, or among two or more vessels, unless, as prescribed by the department, either a boom or other containment device is in place as hereinafter provided, or the containment device is available, along with trained personnel, at the site of transfer operations on a standby basis for immediate deployment in the event of a discharge, spill or release during the transfer."*

Protective (pre-booming) of all docked vessels engaged in the transfer/loading or offload of product should be a consistent requirement among Delaware, Pennsylvania, and New Jersey. This requirement should cover oil cargoes including crude oil and materials with a flash point below 100. Specifications for booming requirements can be developed by the individual states but every attempt should be made for consistency to avoid misunderstanding of the requirements and to achieve consistent application of booming protocols throughout the estuary.

The State of Washington, for example, requires pre-booming of vessels transferring over water. There are two classes of transfer based on rates of transfer and the type of facility. Requirements include:

- Pre-booming a transfer, which means completely surrounding the vessel(s) and/or facility dock area directly involved in the oil transfer operation, or
- The use of alternate measures, which could include access to boom long enough to surround the vessel(s) and dock area involved in the transfer.

Although pre-booming of a docked vessel was not an issue in the *Athos I* spill or response, assuming the *Athos I* had successfully docked and was pre-boomed, the containment of product would have occurred; therefore, dramatically reducing the impact of the spill.

Physical Oceanography Real-Time System Enhancement (R-14)
Recommendation: Fund the upgrade, continued operation, and maintenance of the Physical Oceanography Real-Time System.

The Physical Oceanography Real-Time System (PORTS®) is a decision support tool that improves the safety and efficiency of maritime commerce and coastal resource management through the integration of real-time environmental observations, forecasts, and other geospatial information. PORTS® measures and disseminates observations and predictions of water levels, currents, salinity, and meteorological parameters, such as winds, atmospheric pressure, and air and water temperatures, which mariners need to know in order to navigate safely. The objectives of the PORTS® program are to promote navigation safety, improve the efficiency of U.S. ports and harbors, and ensure the protection of coastal marine resources.

The real-time tide and current data provided through PORTS® represent one component of NOAA's National Ocean Service (NOS) integrated program to promote safe navigation. PORTS® data, when combined with up-to-date nautical charts and precise positioning information, can provide the mariner with a clearer picture of the potential dangers that may threaten navigation safety. NOS fulfills its navigation safety mission in close concert with other federal agencies, such as the U.S. Coast Guard and the U.S. Army Corps of Engineers.

The prevention of maritime accidents is the most cost-effective measure that can be taken to protect fragile coastal ecosystems. In 2004 alone, NOS's Office of Response and Restoration responded to more than 120 events, including the release of 270,000 gallons of crude oil into the Delaware River near Philadelphia, and the spill of more than 400,000 gallons of bunker oil in Alaska. One major oil spill such as the 1989 *Exxon Valdez* accident can cost billions of dollars and destroy sensitive marine habitats critical to coastal ecosystems. PORTS® provides information to make navigation safer, thus reducing the likelihood of a maritime accident. The system also provides information to mitigate damages from a spill, should one occur. Additionally, PORTS® provides real-time data input to trajectory modeling, helping to enhance the predictive capabilities that can improve response decision making and outcomes.

PORTS® has the potential to prevent shipping accidents and subsequent environmental damage and save millions of dollars in response, restoration, and damage claims. PORTS® is accessible to maritime users in a variety of user-friendly formats, including telephone voice response and the internet. PORTS® also provides forecasts via numerical circulation models. Telephone voice access to accurate real-time water level information allows United States port authorities and maritime shippers to make sound decisions regarding loading of tonnage based on available bottom clearance, maximizing loads, and limiting passage times without compromising safety.

Continuous funding of the operation and maintenance of PORTS® is not part of NOAA's budget and relies on funding from various state and local agencies. These funding sources are not guaranteed. In uncertain economic times like the present, they may be reduced or eliminated. Therefore, Congress should authorize and fully fund federal maintenance of the PORTS® system.

Also, the PORTS® system should be upgraded to include new and emerging technologies. One specific example is the CODAR system for ocean current and wave monitoring. A transmitter sends out a radio frequency that scatters off the ocean surface and back to a receiver antenna. Using this information and the principles of the Doppler shift, this system is able to calculate the speed and direction of the surface current. This capability, when applied to spill response, would greatly enhance the effectiveness and efficiency of strategies for controlling surface oil and recovering it.

Use of Volunteers during Oil Spill Emergencies (R-15)

Recommendation: Modify the Sector Delaware Bay Area Contingency Plan to coordinate with and benefit from Affiliated Volunteers and Convergent Volunteers cooperating with the Unified Command during an oil spill response.

At the national, state, and local level there has been much discussion on the use and management of volunteers during a major oil spill incident. There are two distinct volunteer types:

- Affiliated Volunteers (AVs), who are those associated with a government agency (federal, state, local and/or tribal) or non-governmental organization (NGO) and who have been trained for a specific role. (i.e., Tri-State Bird Rescue and Research Organization, Oil Wildlife Care Network [OWCN], and the Coast Guard Auxiliary); and
- Convergent Volunteers (CVs), who are those with no connection to a government agency or NGO (e.g., those who walk in to the Incident Command Post to volunteer and those with no response training, background, or previous experience who undertake activities on their own).

While the Area Contingency Plan (ACP) Sections 4300, 4310, 4320, 4330, 4340 and 4350 have established the framework for volunteers and volunteer coordination, the Committee believes that the issue of convergent volunteers should be clarified to enhance their use, to ensure the safety of these volunteers, and to provide Unified Command with a set of guidelines for using volunteers.

To date, the issue of a massive influx of volunteers at a spill has not been a major problem in Sector Delaware Bay. Though volunteers do make themselves available, it has not been an issue that has adversely impacted a response. This is due mainly to the small number of volunteers, the areas impacted, and the agencies and organizations that have been associated with volunteers.

Among the issues to be resolved (and beyond the scope of the DARBOSAC) are coordination of the practices of the individual states—Delaware, New Jersey, and Pennsylvania—regarding their general requirements for volunteer use, training requirements (such as Community Emergency Response Team (CERT) training), and potential liability issues. While working with the Area Committee, each state should decide the best approach for its particular situation.

The Committee recommends that Affiliated Volunteer Groups establish a task list and associated training for convergent volunteers. CVs should follow the guidelines for training and task assignment established by the Affiliated Volunteer Group to which they are assigned. In addition, CVs should not be assigned to tasks that could be considered hazardous and that would require extensive Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) or other specialty-type training. AVs and CVs can perform a variety of important functions such as checking creeks and shallow areas for oil, observing boom and sorbents locations for issues, meeting with the public to explain why an area has been deemed off limits, and assisting with supplies and transportation.

As outlined in the publication "Training Marine Oil Spill Response Workers Under OSHA's Hazardous Waste Operations and Emergency Response Standard" (OSHA Booklet 3172, 2001), all personnel should be "trained to the highest level of responsibility you may assign them." This guidance should hold true for all personnel including volunteers.

The Sector Delaware Bay Area Committee should review the Volunteer Section of the ACP and consider including the following:

- Minimum training should be established for all AVs that would anticipate working on an oil spill under the direction of the UC in accordance with the National Response Framework, National Incident Management System (NIMS) and the Incident Command System (ICS). For AVs, this training should include, at a minimum, IS-100, "Introduction to Incident Command System", IS-700 "Introduction to NIMS", and ISC 800 "Introduction to National Response Framework". IS-100 would be the minimum training requirement for all CVs and individual AVs.

- Within the Incident Command structure a position should be established to coordinate volunteers, or an existing position within the planning or operations sections should be given duties as the Volunteer Group Coordinator (VGC). The role of the VGC should include establishing a volunteer organizational structure as needed, developing the integration of AVs into the structure and directing CVs to appropriate AV groups; and ensuring effective communication and interface between the AV group leaders, Incident Command, and the operations being conducted.

- A list of jobs/activities that AVs and CVs can perform should be developed and AVs should be assigned to develop a job safety analysis (JSA) for each. The JSA should include a description of the job/activity, a detailed list of tasks to be performed in a particular activity, potential hazards for each task outlined, identification of required personal protective equipment and protective measures, and establishment of training requirements.

The issues of utilizing volunteers and volunteer coordination should be addressed in every region and included in all ACPs in a way that best identifies and integrates specific local resources, opportunities, and differences that may exist. Volunteer issues should be resolved prior to a spill. These are not issues that are best handled during the agitated state of a response.

The following language is presented for consideration as an addition to the Position Checklist in the ACP or the USCG Incident Management Handbook (IMH):

> ***Volunteer Group Coordinator (VGC)***
> *The Volunteer Group Coordinator's function is to establish a volunteer organization structure and recommend measures for assuring appropriate Affiliate Volunteer Groups are engaged. The VGC will provide direction for developing the integration of AVs into the structure and directing convergent volunteers to appropriate AV groups. The VGC*

will ensure that effective communication and interface is established between the AV group leaders, Incident Command, and the operations being conducted.

The major responsibilities include:

a) Obtain a briefing from the Planning Section Chief,Ensure all Affiliate Volunteer (AV) groups are briefed on response needs and the Safety Plan,
b) Prepare an Organizational Assignment List (ICS-203) and Organization Chart (ICS-207) for the volunteer organizations,
c) Establish a meeting schedule with the AVs,
d) Maintain a list of the current status and location of all AV group resources,
e) Review each AV group's Safety Plan, including personal protective equipment needs and requirements,
f) Review task lists prepared by AV groups for their own members and CVs and approve the associated training, safety procedures, and required protective equipment for each task,
g) Assure that applicable state requirements for volunteer registration be maintained for state- or federal-organized and managed volunteers,
h) Determine the need for dedicated AV group volunteers,
i) Brief the Planning Chief on current status of the volunteer organization,
j) Provide advice on volunteer usage to the Planning Chief,
k) Participate, as required, in the tactical meeting and other meetings.

Pre-Cleaning Beaches and Shorelines (R-16)

Recommendation: In order to maximize spill response resources, increase efficiency of the clean up, and minimize disposal cost, the Sector Delaware Bay Area Contingency Plan should be modified to identify sites where pre-cleaning of beaches and/or shorelines prior to oil impact is an option. The Area Contingency Plan also should identify available resources that can perform the function and identify possible disposal options.

During an oil spill, such as the *Athos I*, there are typically thousands of tons of contaminated debris that has to be recovered, transported, and disposed. These tasks require that trained responders spend countless hours dressed in the appropriate Personal Protective Equipment (PPE) because the debris, such as wood, branches, trees, trash, etc., must be handled and disposed of as contaminated material. Typically, this operation is very expensive, time consuming, and wasteful since disposal sites are typically already overburdened . In addition, it removes from the shoreline the natural wrack which is important to the ecosystem.

In order to maximize responders' time and save the cost of PPE and disposal, "clean" debris that is expected, due to tide and wind projections, to be in the path of spilled oil should be identified, removed and disposed of before it can be contaminated by the oil. Due to their importance for the natural ecosystem, natural debris, such as logs, twigs, algae mats etc., should be relocated on site out of the path of expected oiling so as not to remove these elements from the environment. Garbage and other man-made waste should be disposed of properly. Disposal options will be greater since much of this uncontaminated debris can go to local landfills or other re-use needs within the area.

Debris removal can be accomplished by groups of volunteers or paid contractors who would not need specialized training under that Hazardous Waste Operations and Emergency Response Standard. Ideally, groups should be organized ahead of a spill.

Debris Removal Program (R-17)

Recommendation: Consideration Should Be Given to a Floating Debris Removal Mission for Sector Delaware Bay

Floating debris, though it may not cause an imminent danger to larger vessels, has the potential to place smaller vessels at risk. In addition, the accumulation of this debris has required extensive clean-up efforts after a spill has occurred. Large, significant, and potentially damaging debris is regularly observed in the Delaware River especially after storms and flood events. This debris has the potential to impact navigation and poses a pollution risk.

The EP 1165-2-1, DIGEST OF WATER RESOURCES POLICIES AND AUTHORITIES, 30 Jul 99, Paragraph 12-15 states "Action by the Corps in removing drift or debris from navigable waterways is generally limited to the removal and disposal from the authorized project limits and immediate adjacent waterway areas in the interest of general navigation." This reference further clarifies that harbor debris missions are specifically authorized by Congress only in designated harbors. Philadelphia and the Delaware River currently are not listed by Congress as an authorized debris mission harbor. The U.S. Army Corps of Engineers, Philadelphia District, currently does not have floating debris collection equipment in contrast to New York and Baltimore districts which have authorized debris collection missions and have equipment, staffing, and funding to support debris collection activities.

In order for Philadelphia District to perform a debris collection mission, capital investment in equipment and facilities, increased staffing, logistical planning, and possibly real estate acquisitions would be required. A general assumption, without performing an in depth study to quantify the amount of floating debris in the Delaware River, would estimate a capital investment cost to prepare for a debris mission as:

- One debris collection vessel (New York has three debris collection vessels; Baltimore and Norfolk each have one vessel) -- depending on vessel specifications, $10 million to $15 million.
- Land-based equipment to handle debris retrieved from the river, such as a crane, dump trucks, loaders, etc. -- $500,000 to $1million.
- Facilities for the mission, such as a debris offloading pier -- $3 million to $5 million.

Using these estimates and assumptions, the capital cost to stand up a floating debris collection mission could be in the range of $14 million to $21 million.

Additional cost to routinely carryout the mission would include an increase in staff to operate a debris collection vessel with a minimum crew of five -- operator, engineer, crane operator, and two deckhands -- and staff to manage the land-based disposal operation with possibly three or four field personnel and supervision.

The debris collection mission also would require an additional annual Operations and Maintenance funding allocation in order to support the labor, equipment and facility costs. The annual funding required to perform this mission likely would run several million dollars.

Identify, Obtain, and Catalogue Completed and Ongoing Scientific Research on the Delaware Estuary. Provide Public Access to these Data and Utilize these Data to Ensure the Protection of Environmentally Sensitive Areas throughout the Delaware Estuary. (R-18)

Recommendation: Provide dedicated funding to an appropriate agency or organization, such as the Congressionally-authorized Delaware Estuary Program, to catalogue and share existing data on oil-associated environmental effects, including effects of spills, and on the ecological status of the Delaware Estuary; to identify information gaps; and to work with all Delaware Estuary program partners to support oil spill-related scientific analysis and research to fill vital information needs. Develop a mechanism for ensuring that all present and future research is catalogued and made publicly available.

An inclusive and open process involving federal, state, and local agencies and academia should be used, and efforts should include:

- An inventory of all existing data associated with the Delaware Estuary, its health, habitats, impacts, and needs;
- A gap analysis to ensure a thorough understanding of all research needed to understand and address concerns about the Delaware Estuary and the individual and cumulative effects and impacts of oil spills;
- A strategy and dedicated funding for filling data gaps, including possible baseline monitoring for oils in the system;
- An open process by which all existing and new data are made available in a readily-accessible format; and
- Ensuring that this work is revisited on five-year cycles.

There are a variety of strategies for accomplishing these tasks, including white papers, symposia, work groups, and grants.

Identification and Prioritization of Restoration Needs and Mitigation Projects (R-19)

Recommendation: Provide dedicated funding to an appropriate agency or organization, such as the Congressionally-authorized Delaware Estuary Program to identify and prioritize restoration needs for mitigating the harm of oil spills large and small and to identify existing and/or emerging restoration projects that can be implemented.

In the event of a spill on the Delaware River there is always a need for mitigation, the use of beneficial environmental projects to restore health to the ecosystems that have been harmed There is a need to identify projects that are ready for implementation that would serve as suitable mitigation of the ecological harms resulting from pollution incidents and oil spills. These environmental projects can then be utilized to address the injured resources and ecological harm through processes such as the Natural Resources Damage Assessment (NRDA) program.

There are initiatives ongoing in the Delaware River community that are already identifying beneficial environmental activities and projects that could serve as effective mitigation opportunities for all areas and types of injury. However, these prioritization efforts and the projects identified are largely unfunded.

The Committee recommends that Congress:

- Provide dedicated funding through the Delaware Estuary Program to support the Regional Restoration Initiative to identify, catalogue, and prioritize needed restoration activities and projects in Sector Delaware Bay and to ensure that science-based tools are provided to NRDA and to restoration decision makers.

- Provide a competitive grants program through the Delaware Estuary Program to support initiatives and entities to fill project gaps by cultivating new project development as well as cataloguing restoration efforts currently underway or being planned in the region.

- Provide a competitive grants program that supports needed restoration activities and projects within the Delaware Estuary that do not meet the constraints of the NRDA program (spill restoration of direct damages by a responsible party).

Media/Public Relations (R-20)

Recommendation: The Coast Guard should increase public education about and access to information about oil spills before, during, and after spills by developing an official, comprehensive Delaware River and Bay oil spill information web site to which the public and all stakeholders have access. Information on the web site should be updated on an ongoing basis.

The Coast Guard should be more proactive, on an on-going, non-emergency basis, in providing the media and stakeholders (industry, other agencies, and interested public) with a wider range of information about oil spills and oil spill response. Aggressive dissemination of pre-spill educational material—in addition to incident news reporting—could increase the accuracy of information in the marketplace and foster understanding of spill-related issues. It also could help assure public acceptance of response activities and cooperation with response personnel during an incident.

One way to achieve such dissemination would be to institute an official, comprehensive oil spill web site that is extremely user friendly, easy to find and access, and easy to use. The site should use layman's language and be regularly maintained. A core site to be used nationwide could be built by the Public Information Assistance Team. That core would include basic information that is common to all Sectors such as: definitions, explanation of laws and duties, roles of different agencies, oil types and how they differ during a spill, links to various studies, etc. Each Sector then could build on that core by adding its Area Contingency Plan, area spill history and damage assessments, sensitive area maps and explanations of booming strategies, local volunteer involvement and ways to help or become trained to help, and a calendar for meetings, etc.

In short, the site should contain everything interested parties might need or want to know and everything a spill response team wants to tell them. It should make generous use of links, including links to Twitter, Facebook, and other social media. If well done, the site should become THE place everyone knows to go for official, accurate spill-related information, whether before, during, or after a spill.

During a spill, the site could be used to disseminate information to the public specific to the ongoing response. It could be used to pass information about the extent and other effects of the spill. For example, the location of protective booming sites and how boaters should react when approaching such sites could be posted.

Such a web site would be valuable in improving the flow of information, in fostering understanding, and in increasing the accuracy of information in the marketplace. Given the status of the media today, this web site would be a more dependable way of getting information out in a more complete and timely manner. It also could encourage aggressive information sharing by all stakeholders. However, this web site would not replace regular press meetings during times of emergency.

Delaware River and Bay Oil Spill Advisory Committee: Other Considerations

The Committee and subcommittees discussed a variety of topics throughout their deliberations. However, some topics did not result in formal recommendations because they may not have been completely researched or developed or because they were not considered to meet the standard for a recommendation. These topics included the following:

Spill of Opportunity Testing Policy

For Consideration: At the local or regional level, a policy should be in place to foster the advancement of scientific research concerning the consequences to the environment from response techniques and countermeasures. This policy should encourage the experimental use of various countermeasures and include guidance for such use in areas that are set aside to be used as control sites.

During an oil spill it is difficult to organize and plan research projects that can have meaningful and defendable results. However, a policy at the local area or regional level could help foster the implementation of such research. Currently, there is no formal guidance available to help direct research. As there are presently no research opportunities to test oil countermeasures in the environment, the only opportunities for such research are during an actual oil spill. Thus, being prepared with a prioritized list of the types of research that could be performed and the knowledge that this is important to the response community will allow the Environmental Unit to address such research during a spill. The opportunity to learn from spill responses could be a major positive outcome that leads to improved spill response and minimizes environmental damage in subsequent events.

Scientific research during an actual oil spill needs to be pre-planned in order to improve spill responses, increase efficiency, minimize damage, and enhance recovery of the environment.. The Area Committee or the Regional Response Team should prepare a policy with regards to scientific research opportunities during an actual oil spill response.

Job Aids for use by Responders Dealing with Oiled Wildlife, Plants and Fish

For Consideration: The Sector Delaware Bay Area Committee should establish a wildlife, plants of interest, and fish database such that, during any spill, information can be provided immediately that will enable responders to protect wildlife, endangered plants, and fish and to take appropriate action if these natural resources are oiled.

During oil spills there are various plans for initiating the notification of bird rescue organizations. However, procedures for aiding responders with the identification, reporting and handling of oiled birds and other common wildlife are not addressed in any detail. Wildlife are

sometimes reported as oiled when they are not in fact oiled but their natural coloring makes it appear to the uneducated observer that they are oiled. The probability of improperly handling already-distressed wildlife increases if the proper information is not provided to people working in the field who will be the first to encounter wildlife. Likewise, responders doing shoreline cleanup will be working in environments where protection of sensitive plants is possible if they have information that makes identification of plants of concern possible.

There are no formal job aids available to provide information to responders in a timely and succinct manner. Various resources are available for compiling the necessary information but no common site or document is available. It would benefit the response effort to have such information readily available in a format that would allow job aides to be generated quickly depending on the specifics of a given spill and location.

The Sector Delaware Bay Area Committee should collect data for all local wildlife, plants of interest, and fish in the area in a format that easily can be accessed and provided to responders in the field. This information even could be housed on the suggested oil spill web site (recommendation R-20). This material should include documentation, reporting, and preservation procedures as well as cautionary information regarding oiled and deceased wildlife, plant life, and aquatic species. General information could be developed on a national basis with important local/seasonal information provided on an Area basis. The establishment of a geographic information (GIS) spill management database (recommendation R-10) would greatly facilitate this effort.

Economic Recovery

Economic recovery also was discussed, but the subcommittees had difficulty coming to a final decision on the issue. The Committee sensed there should be a methodology to better assess and understand the economic impact of an oil spill. However, within the time frame available, the Committee was not able to work out the data elements that should be included or to figure how to collect the data and who would be responsible for developing the methodology.

Committee and Subcommittee Meetings – Overview

The initial meeting of the Delaware River and Bay Oil Spill Advisory Committee (DARBOSAC) was opened with administrative topics by LCDR Nakeisha Hills and opening remarks by CAPT David Scott who welcomed everyone and outlined the mission of the Committee.

An election of officers was held and the following presentations were made to the Committee:

Mrs. Georgia Abraham, who is responsible for organizing Federal Advisory Committees at the U.S. Department of Homeland Security, gave a general presentation on the Federal Advisory Committee Act and the responsibilities and functions of the Committee.

MST3 Weldon James presented Oil Spill 101 which covered oil movement, movement with the current, containment techniques, exclusion and diversion technique, types of skimmers (portable shallow water skimmers, oleophilic skimmers ,Weir skimmers and Vessel Operating Skimming Systems), types of absorbents (natural organics, natural inorganics, and synthetics), clean-up techniques, and the use of in-situ burns, biological agents, gelling agents, and dispersants.

Gerald Conrad, Director, Contingency Planning, U.S. Coast Guard Sector Delaware Bay, gave an overview of the *Athos I* incident, including state requirements for vessel booming, tank vessels arrival drafts (*Athos I* arrived into the channel with a depth of 36.5 feet draft), and the two week time frame to decide on a port of refuge.

Gerald Conrad from U.S. Coast Guard Sector Delaware Bay also gave a presentation on the *Athos I* after action report, which included highlights of multilingual safety briefs, safety incentive programs, and a renewed commitment to developing relationships through participation in area committees and oil spill exercises with local and federal agencies, utilizing local environmental experts to expedite the oil response efforts, state representation in the Unified Command, having predetermine lead agencies for response incorporated into Area Contingency Plans, ongoing effort of the Captain of the Port to identify facilities that will accept damaged vessels, and an intake early warning system that is now included in the Area Contingency Plan.

General Committee meetings early on were utilized as information and educational sessions. The information portion of the meeting was to update the Committee on process issues and the topic each subcommittee was discussing or researching. The educational portion of the sessions was to help inform Committee members on the status of oil spill preparation and response in the Delaware River and Bay and other topics needing a Committee overview.

As an example, the January 21, 2009, meeting featured a presentation entitled Oil Spill 102, which was an Overview of Oil Spill Prevention, Planning, and Response in Sector Delaware Bay by Eugene Johnson, then President, Delaware Bay and River Cooperative (DBRC). The presentation discussed the current status of Oil Spill Prevention, Planning and Response and the roles and responsibilities of DBRC and others.

In addition, Ed Doyle, vice chair of the Committee, provided an Overview of Prevention and Planning which discussed the Area Contingency Plan (ACP) and Facility and Vessel Response Plans. Other topics discussed during that meeting included: planning under the ACP; the Port Community; wetlands; examples of specific booming strategies at Big Timber-Oldmans Creek and Oldmans to Pea Patch Island, Darby Creek; collection booming; and sensitive areas such as Tinicum Island.

The Committee also entertained outside comments and presentation such as that requested by Alfred J. Kuffler of Montgomery McCracken Walker & Rhoads LLP on the topic of safe refuge and a presentation from Kurt Hansen, USCG R&D, on submerged oil.

A typical subcommittee meeting would involve specific areas of interest. The following are examples of how the subcommittee's worked:

Early on the **Prevention Subcommittee** used its meeting to discuss the following areas:

- Research and review previous incidents that resulted in oil spills in the Delaware River and Bay. What caused them, what lessons were learned, what regulations and/or recommendations followed the investigations, how were these enacted and have they worked?
- Investigate debris removal programs that are reportedly in effect in Baltimore and New York harbors. Large, significant and potentially damaging debris regularly is observed in the Delaware River, especially after storms and floods. This debris has the definite potential to impact navigation and poses a pollution risk. Determine whether to recommend that a similar program be funded locally.
- Determine the effective levels of communication down to the hands-on seafarers on vessels using the waterways. Are recommendations, suggestions, and requirements from sources such as the DARBOSAC effectively reaching the people using the river and bay? Conversely, is there an effective conduit for their comments and concerns to be heard by committees such as the DARBOSAC?
- Determine how commercial fisherman play into the overall use of the river and their potential to be a threat to tankers and other vessels that could result in an oil spill (offshore lightering example quoted).
- Investigate the relationship between speed of vessels transiting the river and the surge/suction effect they have on tankers moored alongside docks. Research recent incidents and offer suggestions as to how to mitigate.
- Research the difference in booming strategies in use in Pennsylvania and New Jersey. Determine effectiveness and suitability and make recommendations as to which way to go.
- Suggestion: Investigate USCG's review of Facility Response Plans and how they are integrated with the Area Contingency Plan. Determine if the plans can effectively deliver meaningful and effective responses in terms of both equipment and personnel.

The **Response Subcommittee** at one meeting conducted an overview of OPA ’90 regulations, reviewed how Sunoco provides emergency response to incidents which may occur at the refinery, and reviewed the use of volunteers during an oil spill. In addition, members listed topics for further discussion, such as:

- Spill of opportunity policy for testing response products
- Place of refuge
- Wildlife rehabilitation job aids
- Additional protection strategies and mapping
- Spring bird and horseshoe crab migration issues

The subcommittee also set assignments for collecting further information or starting to develop information for possible draft recommendations for the Committee on topics such as:

- Definition of Response
- Volunteers
- Pre-Cleaning Beaches/Shoreline
- Submerged Oil
- Media/Public Relations
- Safe Refuge
- Wildlife Rehabilitation
- Enhancement of the Physical Oceanography Real-Time System (PORTS®)

The **Mitigation/Recovery Subcommittee** worked to compile information on previous spills and "lessons learned"; members requested information on the "human dimension of spill response" and a presentation on the National Resources and Damage Assessment (NRDA) process.

In addition, members discussed economic concerns in terms of industry economics and business interruption, social and recreational economics, returning a riverbank to pre-incident conditions, opening the river to commerce, and the possible conflict between economic and environmental interests. They discussed what information may be lacking on endangered species and how information could be updated. They also discussed the role of environmental sensitivity maps (ESI), the fact that the maps are not current and discussed a possible recommendation regarding maintenance and sustainability of ESI and the funding and resources necessary to update maps.

The subcommittee’s mission statement was to identify mitigation and recovery recommendations that will minimize or eliminate extended environmental and economic harms that negatively impact the Delaware River and Bay environment, community, and business region in the aftermath of an oil spill.

Differences

As expected, all of the subcommittee discussions took time for participants to understand each topic or issue, to decide the relevance of each topic and to shape a recommendation to be brought before the full Committee. As also would be expected, throughout the various discussions some issues required a more substantial educational process before members could fully appreciate the

concerns, while other issues required more time for discussion and debate in an effort to reach consensus. For example, the use of volunteers during an oil spill and upgrading the Natural Resource Damage Assessment (NRDA) process were both robust discussions.

On the volunteer issue, ultimately two proposals were offered to the full Committee. The proposal that was not adopted recommended that all volunteer activities must strictly conform to the National Framework. Overall, the Committee found this too restrictive for the idea it wanted to promote and adopted the recommendation as written in R-15.

Proposing alternatives or modifications to the NRDA process to address small spills -- spills that individually might not meet established guidelines or thresholds but collectively might add up to a significant quantity -- proved equally challenging. Although the subcommittee came to agreement on a recommendation as written in R-9, the consensus required lengthy discussion.

Report Preparation

Each subcommittee prepared its own recommendations for inclusion in the Committee's final report. All recommendations then were brought to the full Committee where they were discussed thoroughly and each was individually subjected to a vote. This report was then compiled with help from many people and was made available to Committee members for review as a whole document. The report was unanimously approved by the Committee at its final meeting on December 16, 2010.

Appendix A – Delaware River and Bay Oil Spill Advisory Committee Charters

Original Charter (October 2007)

UNITED STATES DEPRTMENT OF HOMELAND SECUTITY
UNITED STATES COAST GUARD
DELAWARE RIVER AND BAY OIL SPILL ADVISORY COMMITTEE

Committee's Official Designation: (Title)
Delaware River and Bay Oil Spill Advisory Committee.

1. Authority:
As provided for in section 607 of the Coast Guard and Maritime Transportation Act of 2006, Public Law 109-241, this charter effects the establishment of the Delaware River and Bay Oil Spill Advisory Committee (DRBOSAC). This Committee is established in accordance with and shall operate under the provisions of the Federal Advisory Committee Act (FACA), 5 U.S.C. App.

2. Objectives and Scope of Activities:
The DRBOSAC shall provide advice, recommendations and a ranking of priorities for measures to improve the prevention of and response to future oil spills in the Delaware River and Delaware Bay. Not later than 18 months after the appointment of member the Committee, it shall provide a report to the Commandant of the Coast Guard, the Governors of the States of New Jersey, Pennsylvania, and Delaware, the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives, detailing those recommendations and priorities.

3. Description of Duties:
The duties of the DRBOSAC are solely advisory in nature.

4. Officials to Whom the Committee Reports:
The DRBOSAC shall report to the Commandant of the Coast Guard through Commander, Sector Delaware Bay; Commander, Fifth Coast Guard District and Commander, Atlantic Area.

5. Agency Responsible for Providing Support:
The Coast Guard shall provide support to the DRBOSAC.

6. Estimated Annual Operating Costs and Staff Years:
The estimated operating cost of the DRBOSAC is $770,000, which includes 1.5 staff years of support and includes the rental costs of the facilities, travel, and accommodations for the Committee members based on per diem rates and contractor support to facilitate meetings and produce the final report.

7. Designated Federal Officer:
A full-time or permanent part-time employee of the Coast Guard shall be appointed the

DRBOSAC Designated Federal Officer (DFO). The DFO or his/her designee shall approve or call the DRBOSAC meetings, approve meeting agendas, attend all Committee and subcommittee meetings, adjourn any meeting when he/she determines adjournment to be in the public interest, and chair meetings when directed to do so by the Assistant Commandant of Response, Office of Incident Management Preparedness (CG-3RPP)

8. Estimated Number and Frequency of Meetings:

The DRBOSAC shall hold its first meeting not later than 60 days after the date on which the Commandant completes the appointment of members of the Committee. Thereafter, additional meetings will be held at the call of the Chairperson with the approval of the Designated Federal Officer. Committee meetings shall be open to the public unless a determination is made by the appropriate DHS official in accordance with DHS policy and directives that the meeting should be closed in accordance with subsection (c) of 552b of title 5, United States Code and announced in the Federal Register at least 30 days in advance.

9. Duration and Termination:

As authorized by section 607 of Public Law 109-241, the DRBOSAC shall terminate 18 months after the date on which the Commandant completes the appointment of the members of the Committee.

10. Chairperson and Vice-Chairperson:

At its first meeting, the Committee shall elect by majority vote one of the members of the Committee to serve as Chairperson and one of the members as Vice-Chairperson. The Vice-Chairperson shall act as Chairperson in the absence of or incapacity of the elected Chairperson or in the event of a vacancy in that office.

11. Member Composition:

The DRBOSAC shall consist of 27 voting members who are appointed by and serve at the pleasure of the Commandant of the Coast Guard and who have particular expertise, knowledge, and experience regarding the transportation, equipment, and techniques that are used to ship cargo and to navigate vessels in the Delaware River and Delaware Bay, as follows:

(A) Three members who are employed by port authorities that oversee operations on the Delaware River or have been selected to represent these port authorities, of whom
  (i) one member shall be an employee or representative of the Port of Wilmington;
  (ii) one member shall be an employee or representative of the South Jersey Port Corporation; and
  (iii) one member shall be an employee or representative of the Philadelphia Regional Port Authority.

(B) Two members who represent organizations that operate tugs or barges that utilize the port facilities on the Delaware River and Delaware Bay.

(C) Two members who represent shipping companies that transport cargo by vessel from ports on the Delaware River and Delaware Bay of whom at least one may not be a representative of a shipping company that transports oil or petroleum products.

(D) Two members who represent operators of oil refineries to the Delaware River and Delaware Bay.

(E) Two members who represent state-licensed pilots who work on the Delaware River and Delaware Bay.
(F) One member who represents labor organizations whose members load and unload cargo at ports on the Delaware River and Delaware Bay.
(G) One member who represents local fishing interests or an aquaculture Organization that depends on fisheries and resources of the Delaware River or Delaware Bay.
(H) Three members who represent environmental organizations active with respect to the Delaware River and Delaware Bay, including a watershed advocacy group and a wildlife conservation advocacy group.
(I) One member who represents an organization affiliated with recreational fishing interests in the vicinity of the Delaware River and Delaware Bay.
(J) Two members who are scientists or researchers associated with an academic institution and who have professional credentials in fields of research relevant to oil spill safety, oil spill response, or wildlife and ecological recovery.
(K) Two members who are municipal or county officials from Delaware.
(L) Two members who are municipal or county officials for New Jersey.
(M) Two members who are municipal or county officials from Pennsylvania.
(N) One member who represents an oil spill response organization located on the lower Delaware River and Delaware Bay.
(O) One member who represents the general public.

The DRBOSAC may also consist of an appropriate number (as determined by the Commandant of the Coast Guard) of non voting members who represent Federal agencies and agencies of the states of New Jersey, Pennsylvania, and Delaware with an interest in oil spill prevention in the Delaware River and Delaware Bay.

The members outlined in (A) can be either Special Government Employees or representatives. Members who are merely employed by port authorities shall be designated as SGEs and members that represent these port authorities shall be designated as representative members.

The members in paragraphs (B), (C), (D), (E), (F), (G), (H), (I), (K), (L), (M), (N) are representative members and not Special Government Employees as defined in section 202(a) of Title 18, United States Code.

The members in paragraphs (J) and (O) serve as a Special Government Employees as defined in section 202(a) of Title 18, United States Code.

The terms of office for members initially appointed to the Committee shall expire 18 months from the date of their appointment.

12. Subcommittees:

The DRBOSAC Chairperson may establish subcommittees for any purpose consistent with this charter subject to the approval of the DFO. Such subcommittees may not working dependently of the chartered Committee an authority to make decisions on behalf of the DRBOSAC and may not report directly to the Federal government or any other entity.

The Chair may appoint subcommittee members from either the Committee of the public. The subcommittee chair shall be a Committee member. The subcommittee shall be required to take minutes which shall contain a record of all persons present, a complete and accurate description of matters discussed and conclusions reached.

September 25, 2007
Agency Approval Date
October 1, 2007
GSA Consultation Date
October 1, 2007
Date Filed with Congress

Revised Charter (December 2010)

Authority:

Section 607 of the Coast Guard and Maritime Transportation Act of 2006, Public Law 109-241, as amended

Purpose:

The DRBOSAC provides advice, recommendations, and a ranking of priorities for measures to improve the prevention of and response to future oil spills in the Delaware River and Bay. Not later than December 31, 2010, it shall provide a report to the Commandant of the Coast Guard, the Governors of the States of New Jersey, Pennsylvania, and Delaware, the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives, detailing those recommendations and priorities.

When this committee was authorized in 2006, the deadline for providing the report required in the above paragraph was 18 months after appointment of the committee's members, April 30, 2010. However, the committee did not complete its work by that date and, because the committee's authority terminated in April, has been unable to meet.

Charter Amendments:

Section 10. Duration, has been amended to reflect the new termination date of not later than December 31, 2010.

Additional amendments have been made to conform to the uniform charter format established for all DHS advisory committees.

Charter filing date:
Remains April 6, 2010.

UNITED STATES DEPARTMENT OF HOMELAND SECURITY

UNITED STATES COAST GUARD

DELAWARE RIVER AND BAY OIL SPILL ADVISORY COMMITTEE

1. Committee's Official Designation:
Delaware River and Bay Oil Spill Advisory Committee

2. Authority:
As provided for in section 607 of the Coast Guard and Maritime Transportation Act of 2006, Public Law 109-241 (as amended), this charter establishes the Delaware River and Bay Oil Spill Advisory Committee (DRBOSAC). This committee is established in accordance with, and operates under, the provisions of the Federal Advisory Committee Act (FACA) (Title 5, United States Code, Appendix).

3. Objectives and Scope of Activities:
The DRBOSAC provides advice, recommendations, and a ranking of priorities for measures to improve the prevention of and response to future oil spills in the Delaware River and Bay. Not later than December 31, 2010, it shall provide a report to the Commandant of the Coast Guard, the Governors of the States of New Jersey, Pennsylvania, and Delaware, the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives, detailing those recommendations and priorities.

4. Description of Duties:
The duties of the DRBOSAC are solely advisory in nature.

5. Officials to Whom the Committee Reports:
The DRBOSAC provides advice and recommendations to the Secretary through the Commandant of the Coast Guard, Commander, Sector Delaware Bay, Commander, Fifth Coast Guard District and Commander, Atlantic Area.

6. Agency Responsible for Providing Necessary Support: The Department of Homeland Security shall be responsible for providing financial and administrative support to the committee. Within DHS, Sector Delaware Bay, United States Coast Guard will provide this support.

7. Estimated Annual Operating Costs and Staff Years:
The estimated operating cost of the DRBOSAC is $90,000.00, which includes 0.75 staff years of support.

8. Designated Federal Officer:
A full-time employee of the Coast Guard is appointed by the Director of Response Policy (CG-53) as the DRBOSAC Designated Federal Officer (DFO). The DFO or the alternate DFO approves or calls DRBOSAC meetings, approves meeting agendas, attends all committee and subcommittee meetings, adjourns any meeting when the DFO determines adjournment to be in

the public interest, and chairs meetings when directed to do so by the Director of Response Policy.

9. Estimated Number and Frequency of Meetings:
Meetings of the DRBOSAC may be held with the approval of the DFO; it is expected the committee will meet twice a year. Members may be reimbursed for travel and per diem expenses, and all travel for DRBOSAC business must be approved in advance by the DFO. Committee meetings are open to the public unless a determination is made by the appropriate DHS official, in accordance with DHS policy and directives, that the meeting should be closed in accordance with Title 5, United States Code, subsection (c) of section 552b.

10. Duration:
The DROBOSAC shall terminate 30 days after it transmits its report, pursuant to Section 3 of this charter, but no later than December 31, 2010, whichever is earlier.

11. Member Composition:
The DRBOSAC shall consist of 27 voting members who are appointed by and serve at the pleasure of the Commandant of the Coast Guard, and who have particular expertise, knowledge, and experience regarding the transportation, equipment, and techniques that are used to ship cargo and to navigate vessels in the Delaware River and Bay, as follows:

(A) Three members who are employed by port authorities that oversee operations on the Delaware River or have been selected to represent these port authorities, of whom--
  (i) one member shall be an employee or representative of the Port of Wilmington;
  (ii) one member shall be an employee or representative of the South Jersey Port Corporation; and
  (iii) one member shall be an employee or representative of the Philadelphia Regional Port Authority.

(B) Two members who represent organizations that operate tugs or barges that utilize the port facilities on the Delaware River and Delaware Bay.

(C) Two members who represent shipping companies that transport cargo by vessel from ports on the Delaware River and Delaware Bay, of whom at least one may not be a representative of a shipping company that transports oil or petroleum products.

(D) Two members who represent operators of oil refineries to the Delaware River and Delaware Bay.

(E) Two members who represent State-licensed pilots who work on the Delaware River and Delaware Bay.

(F) One member who represents labor organizations whose members load and unload cargo at ports on the Delaware River and Delaware Bay.

(G) One member who represents local commercial fishing interests or an aquaculture organization, the members of which organization depend on fisheries and resources of the Delaware River or Delaware Bay.

(H) Three members who represent environmental organizations active with respect to the Delaware River and Delaware Bay, including a watershed advocacy group and a wildlife conservation advocacy group.
(I) One member who represents an organization affiliated with recreational fishing interests in the vicinity of the Delaware River and Delaware Bay.
(J) Two members who are scientists or researchers associated with an academic institution and who have professional credentials in fields of research relevant to oil spill safety, oil spill response, or wildlife and ecological recovery.
(K) Two members who are municipal or county officials from Delaware.
(L) Two members who are municipal or county officials for New Jersey.
(M) Two members who are municipal or county officials from Pennsylvania.
(N) One member who represents an oil spill response organization located on the lower Delaware River and Delaware Bay.
(O) One member who represents the general public.

The DRBOSAC may also consist of an appropriate number (as determined by the Commandant of the Coast Guard) of non-voting members who represent Federal agencies and agencies of the States of New Jersey, Pennsylvania, and Delaware with an interest in oil spill prevention in the Delaware River and Delaware Bay.

The members outlined in (A) can be either Special Government Employees or representatives. Members who are merely employed by port authorities shall be designated as SGEs and members that represent these port authorities shall be designated as representative members. The members in paragraphs (B), (C), (D), (E), (F), (G), (H), (I), (K), (L), (M) and (N) are representative members and not Special Government Employees as defined in section 202(a) of Title 18, United States Code.

The members in paragraphs (J) and (O) serve as a Special Government Employees as defined in section 202(a) of Title 18, United States Code.

The terms of office for members initially appointed to the committee shall expire upon termination of the committee or December 31, 2010, whichever occurs first. A member appointed to fill an unexpired term serves the remainder of the term.

12. Officers

The Committee elects by majority vote one member of the committee to serve as Chair and one member as Vice-Chair. The Vice-Chair will act as Chair in the absence of or incapacity of the Chair or in the event of a vacancy in the office of the Chair. The term of office for the Chair and Vice-Chair shall expire upon termination of the committee or December 31, 2010, whichever occurs first.

13. Subcommittees:

The DFO may establish subcommittees for any purpose consistent with this charter. Such subcommittees may not work independently of the chartered committee and must present their work to the DRBOSAC for full deliberation and discussion. Subcommittees have no authority to

make decisions on behalf of the DRBOSAC and may not report directly to the Federal government or any other entity. The subcommittee chair shall be a DRBOSAC member.

14. Recordkeeping:

The records of the DRBOSAC, formally and informally established subcommittees, or other subgroups of the committee, are handled in accordance with General Records Schedule 26, Item 2 or other approved agency records disposition schedule. These records are available for public inspection and copying, in accordance with the Freedom of Information Act (Title 5, United States Code, section 552).

15. Filing Date:

April 6, 2010
Department Approval Date
March 2, 2010
CMS Consultation Date
April 6, 2010
Date Filed with Congress

Appendix B – Significant* Oil Spill Events in Delaware River and Bay

Responsible Party	Date	Amount Spilled	Product Spilled
M/T *Elias* – ARCO, Ft. Mifflin Dock	9 April 1974	12,000 bbl of a 217,000 bbl cargo	***Bachaquero crude oil explosion, fire, spill
T/V *Corinthos* – Marcus Hook	31 Jan 1975	266,000 barrels	Fire and crude oil spill while docked at BP *Edgar M. Queeny* collided with *Corinthos*
T/V *Grand Eagle*	29 Sept 1985	435,000 gallons	Crude oil - **g**rounded MH Bar
Coastal Eagle Point	5 Dec 1985	22,000 gallons 80 tons	Benzene
Standard Chlorine	3 Jan 1986	569,000 gallons	PDCB/benzene
T/V *Intermar Alliance*	21 Mar 1986	189,000 gallons	Nigerian/Ninian Crude loss of steerage
T/V *Viking Osprey*	8 Sept 1986	295,000 gallons	Bottom scrap Marcus Hook Bar –Claymont Shoal
M/V *Jahre Spray*	7 Oct 1988	Trailing sheen - 6 miles	Nigerian crude oil
T/V *Presidente Rivera* –South of Marcus Hook	24 June 1989	435,000 gallons	#6 heavy oil – industrial grade – grounding Claymont Shoal
****T/V *Exxon Valdez***	24 March 1989	10.8 million gallons	North Slope crude oil
Barge *Worlds Radiance* – Hogg Island Terminal	21 Nov 1989	4200 gallons	Storm - Barge broke from dock while off loading – crude oil
T/V *Faith I & Ocean Barge 190*	19 Aug 1990	168,000 gallons	Gasoline - collision
M/V *Santa Clara* 30 miles off Cape May	3 Jan 1992		Arsenic Trioxide –containers weather
M/V *Kentucky*	22 July 1994	13,000 gallons	Crude oil – suspected grounding Marcus Hook bar-Claymont Shoal
M/V *Jahre Spray* Eagle Point Refinery	22 July 1995	56,000 gallons	West African Rabbi crude –transfer hose broke during storm
T/V *Anitra* Big Stone Anchorage	9 May 1996	42,000 gallons	Nemba and Cabinda light crude oils. Leak below water line.
Bouchard *Barge 155* Bombay Hook Anchorage	24 Oct 1996	2,000 gallons	#6 fuel from Anchor compartment while waiting out storm

T/V *Niki* - Delaware City	1996	1,500 gallons	
M/V *Mystras* - Big Stone Anchorage	18 Sep 1997	200 bbls (8,400 gallons)	Brent crude oil
Bouchard *Barge #115*- Motiva	27 Oct 1999	6,300 gallons	Vacuum gas oil - overfill
Conectiv/IRPP	Dec 1999	750,000 gallons	subsurface diesel spill
Tug John Terecamo Near Ft. Mifflin	15 June 2001	2,000 gallons	Hit by propeller of Tanker –grounded to avoid sinking. Diesel fuel
Motiva Acid Spill Delaware City	17 July 2001-	Land based spill- 10,000 gallons to water	Spent sulfuric acid and water mixture – fire/explosion
T/V *Athos I* – Vicinity of CITGO docks, Paulsboro. NJ	26 Nov 2004	265,000 gallons	Crude oil – heavy Hit submerged objects
M/V *Bermuda Islander*	26 April 2006	Original mystery spill- ? gals	Oil trailing six miles
IPC Spill- Christina River, Wilmington	15 July 2006	2,100 gal	Waste oil – land based tank/line leak
T/V *Tigani* CITGO Dock	7 Oct 2007	1,600 gallons	#6 Bunker C oil – cracked scupper line that passed through a bunker tank – leaking while docked
Sunken Tugs - Schuylkill River	29 July 2008	1,200 gallons?	fuel oil/waste oil spill

*"Significant" is a relative term that is used in the title to mean amount spilled, level of response or the notoriety of the event.
**Exxon Valdez listed for comparison

***The petroleum industry generally classifies crude oil by the geographic location it is produced in (e.g. West Texas Intermediate, Brent), its API (American Petroleum Institute) gravity (an oil industry measure of density), and by its sulfur content. Crude oil may be considered *light* if it has low density or *heavy* if it has high density; and it may be referred to as sweet if it contains relatively little sulfur or *sour* if it contains substantial amounts of sulfur.

Brent and Ninian crude come from the North Sea area. Nemba and Cabinda light crude oils are produced in Angola. Nigerian crude oil could be Bonny Light, Agbami (light, sweet), Escravos or Pennington. Bachaquero crude oil is from Venezuela.