COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
U.S. HOUSE OF REPRESENTATIVES

A New Direction for Federal Oil Spill Research and Development

Thursday, June 4, 2009
2:00 p.m. – 4:00 p.m.
2318 Rayburn House Office Building

PURPOSE

On Thursday, June 4th, the Subcommittee on Energy and Environment will hold a hearing entitled "*A New Direction for Federal Oil Spill Research and Development"* at 2 p.m. in Room 2318 of the Rayburn House Office Building. The purpose of the hearing is to examine current federal research and development efforts to prevent, detect, or mitigate oil discharges and to receive testimony on *The Federal Oil Spill Research Program Act* of 2009.

WITNESSES

- **Mr. Doug Helton**, **Incident Operations Coordinator, National Oceanic Atmospheric Administration's (NOAA) Office of Response and Restoration (OR&R).** Mr. Helton assists in managing NOAA's scientific support team during oil and chemical spill responses. In addition, he works to ensure that NOAA's oil spill response services are provided quickly and are useful to the U.S. Coast Guard, Environmental Protection Agency, and other on-scene responders.

- **Dr. Albert D. Venosa, Director of the Land Remediation and Pollution Control Division at the National Risk Management Research Laboratory, Environmental Protection Agency's Office of Research and Development (ORD).** Dr. Venosa directs EPA's research related to oil spill remediation and mitigation. Dr. Venosa's twenty year tenure in this area of work includes assessing the effectiveness of nutrient formulations in the field for stimulating enhanced biodegradation of contaminated shorelines in Prince William Sound as part of the Alaska Oil Spill Bioremediation Project.

- **Rear Admiral James Watson, Director of Prevention Policy for Marine Safety, Security and Stewardship, United States Coast Guard (USCG).** Rear Admiral Watson serves as Director of Prevention Policy Development for most legislative mandates regarding oil pollution prevention. His work includes oversight of Vessel Response Plans, oily-water separators, ballast systems, navigation safety systems, and pollution investigations.

- **Mr. Stephen Edinger, Director of the Office of Spill Prevention and Response (OSPR), California Department of Fish and Game.** Mr. Edinger is the senior State of California Official responsible for oil spill prevention and response. Steve is an

experienced law enforcement officer and Incident Commander and served as the State-On-Scene Coordinator for the M/V COSCO BUSAN oil spill response.

BACKGROUND

Approximately 3 million gallons of oil, or refined petroleum product, are spilled into U.S. waters every year.[1] When one of the hundreds of annual spills occur, the federal government takes primary action through the Coast Guard or Environmental Protection Agency depending on the location of the accident. As a part of the federal response, the National Oceanic and Atmospheric Administration often plays a vital role in providing real time data and forecasting to assist in the recovery and mitigation efforts. In 2008, NOAA received requests for scientific assistance related to 169 environmental incidents, three-quarters of which were oil spills.[2]

In March of 1989, the Exxon Valdez oil tanker ran aground on Bligh Reef in Alaska's Prince William Sound, rupturing its hull and spilling nearly 11 million gallons of crude oil. The oil slick spread over 11,000 square miles of ocean and onto over 350 miles of beaches in Prince William Sound. It was the largest single oil spill in U.S. coastal waters.[3] The direct result of *Exxon Valdez* was the passing of the Oil Pollution Act of 1990 (OPA), which clarified jurisdictional ambiguities in previous legislation. The Act addressed many factors in preventing, detecting, or mitigating oil spills.

Title VII of OPA created an interagency oil spill research and technology program nineteen years ago. According to the Committee on the Marine Transportation of Heavy Oils, which was established by the National Research Council (NRC) at the request of the U.S. Coast Guard, for most spills only about 10 to 15 percent of the oil is recovered, and the best recovery rates are probably about 30 percent.[4] Given these low recovery percentages, additional research and development is necessary to reach acceptable levels of mitigation.

THE OIL POLLUTION ACT OF 1990, P.L. 101-380 (8-18-1990)

Title VII—Oil Pollution Research and Development Program

The Oil Pollution Act's Title VII created a program to conduct research and development on oil spill prevention and response. The Title established an Interagency Coordinating Committee to coordinate a comprehensive research and development effort among 14 federal agencies and to coordinate federal research and development activities with those of state and local governments, industries, universities, other foreign governments. The law designated the Coast Guard as the Committee Chair and defined membership to include:

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[1] National Research Council (2005) "Oil Spill Dispersants: Efficacy and Effects." pg. 1
[2] NOOA (2009) FY 2010 Budget Summary. May 11, 2009. pg. 2-31
[3] NOAA (2009) *Exxon Valdez Oil Spill Website*. National Ocean Service. Office of Response and Restoration Website. http://response.restoration.noaa.gov/topic_subtopic_entry.php?RECORD_KEY%28entry_subtopic_topic%29=entry_id,subtopic_id,topic_id&entry_id%28entry_subtopic_topic%29=700&subtopic_id%28entry_subtopic_topic%29=2&topic_id%28entry_subtopic_topic%29=1. Accessed on May 20, 2009.
[4] National Research Council (1999) *Spills of Non-Floating Oils*. Committee on Marine Transportation of Heavy Oils. National Research Council. National Academy Press. Washington, D.C. pg. v.

1. The National Oceanic and Atmospheric Administration *(DOC)*
2. National Institute of Standards and Technology *(DOC)*
3. The Department of Energy
4. The Minerals Management Service *(DOI)*
5. The United States Fish and Wildlife Service *(DOI)*
6. The United States Coast Guard *(Originally DOT, now DHS)*
7. The Maritime Administration *(Originally DOT, now DHS)*
8. The Pipeline and Hazardous Materials Safety Administration[5] *(DOT)*
9. The Army Corps of Engineers *(DOD)*
10. The Navy *(DOD)*
11. The Environmental Protection Administration
12. The National Aeronautics and Space Administration
13. The United States Fire Administration *(now DHS)*
14. The Federal Emergency management Agency *(now DHS)*

The research program was authorized at $28 million per year for five years with $6 million per year of the total designated for the Regional Research Program.

The Committee was tasked with developing a research plan to investigate technologies to prevent and clean up spills, ways to restore damaged natural resources, and the long-term environmental effects of spills. In addition, the Committee was tasked with the management of a Regional Research Program. The Regional program administers competitive grants to universities or other research institutions to address regional oil pollution needs. OPA authorized a total of $600,000 per year over five years to each of the ten Coast Guard regions. Finally, the Title directed the Coast Guard to conduct oil pollution minimization demonstration projects, only some of which were carried out due to a lack of funding.

Since the OPA passed there has been little legislative activity to amend the Oil Pollution Research and Development Plan. Two laws, *The Great Lakes Fish and Wildlife Restoration Act of 1990* and *The Aquatic Nuisance Prevention and Control Act of 1990* created a port oil pollution demonstration project in the Great Lakes. Finally, in 1996, *The Coast Guard Authorization Act* authorized the Prince William Sound Oil Spill Recovery Institute and the Center for Marine Training and Safety in Galveston, Texas to conduct oil spill research and development.

OPA RESEARCH AND DEVELOPMENT PROGRAM

The Interagency Coordinating Committee on Oil Pollution Research produced the first Oil Pollution Research and Technology Plan in 1992, and after consulting with the National Academy of Sciences, submitted a second plan in 1997. The plans identified and prioritized twenty research and development program areas. These areas focused on spill prevention; spill

[5] Originally called the Research and Special Projects Administration this program was renamed the Pipeline and Hazardous Materials Safety Administration in the Norman Y. Mineta Research and Special Programs Improvement Act (P.L. 108-426).

response planning, training, and management; spill countermeasures and cleanup; fate and transport; and effects, monitoring and restoration and assigned R&D focus areas to ten member agencies. There has been no update of the research plan since 1997.

Despite the Interagency Committee's detailed research plan, there have been modest technological advances in oil spill cleanup technology since the enactment of the law in 1990. The Interagency Coordinating Committee on Oil Pollution Research reported that, as late as 1997, "most of the technology and information gaps of 1990 remain," due to a failure to appropriate sufficient funds for oil pollution technology programs.[6]

Four agencies – the National Oceanic and Atmospheric Administration (NOAA), the Environmental Protection Administration (EPA), the Mineral Management Services (MMS), and the Coast Guard – have conducted the majority of oil pollution research. Funding levels have been far lower than the $28 million per year originally authorized for the program.

U.S. Coast Guard

The U.S. Coast Guard is the lead federal response agency for coastal waters and deepwater ports, and conducts research through its Research and Development Center in Groton, Connecticut. Specifically, the Coast Guard has focused on four main areas: spill response planning and management, spill detection and surveillance, vessel salvage and on-board containment, and spilled oil cleanup and countermeasures. Over the past decade, the Coast Guard has spent approximately $20 million on oil spill research and development.

The Environmental Protection Agency (EPA)

EPA seeks to prevent, prepare for, and respond to oil spills that occur in the inland waters of the United States, and EPA is the lead federal response agency for such spills. The Office of Emergency Management (OEM) provides the responder personnel, while the research work, which addresses mitigation, fate and effects, and spill flow characteristics, is conducted through the Office of Research and Development's (ORD) National Risk Management Research Laboratory.

In FY 2009, the Oil Spill Response Program received $720,000, a modest but historically stable budget, to conduct research and development at EPA.[7] The Program's objective is to provide environmental managers with the "tools, models, and methods needed to mitigate the effects of oil and biofuel spills on ecosystems." EPA's program includes focused work into spill mitigation through bioremediation, chemical and physical countermeasures, and ecotoxity effects. [8]

The National Oceanic and Atmospheric Administration (NOAA)

[6] Interagency Coordinating Committee on Oil Pollution Research (1997) *Oil Pollution Research and Technology Plan*.
[7] EPA (2009) *FY 2010 Congressional Budget Justification*. EPA-2-5-E-09-001. pg. 160
[8] EPA (2009) *Congressional Briefing on OPA 1990 to the Science and Technology Committee*. May 12, 2009.

NOAA's Office of Response and Restoration (OR&R) provides immediate operational and scientific support during the assessment, response, and cleanup phases. In the role as science advisors to the Federal On-Scene Coordinator, OR&R provided spill trajectory, resources at risk, and early spill impact information during the initial stages of the spill. Once the focus shifted from response to cleanup, OR&R addressed issues related to the effectiveness and environmental effects of cleanup technologies.[9]

Although there is currently no funded oil spill response research and development program in NOAA, the Oil Pollution Act does grant NOAA the authority to carry out research and development. From 2004-2007, NOAA received funding for the Coastal Response Research Center in New Hampshire, which brings together the resources of the University of New Hampshire and the field expertise of OR&R to conduct and oversee basic and applied research, perform outreach, and encourage strategic partnerships in spill response, assessment and restoration. Aside from this funding, NOAA has received no direct appropriation for NOAA research and development for spill response.

The Minerals Management Service (MMS)

MMS's Oil Spill Response Research Program (OSRR) focuses on improving the knowledge and technologies used for detection, containment and cleanup of oil spills that may occur on the outer continental shelf. MMS also operates OHMSETT —the National Oil Spill Response Test Tank Facility—in Leonardo, New Jersey. Funding for MMS's programs is appropriated from the Oil Spill Liability Trust Fund (OSLTF). While OSLFT had received funds from an oil tax from oil imported into the U.S., once the fund reached one billion dollars, the tax was suspended. Currently, funds are generated from interest on the fund, cost recovery from responsible parties, and penalties.

DRAFT LEGISLATION

In November 2007, a 900-foot container ship, the *Cosco Busan*, struck the San Francisco Bay Bridge, spilling over 50,000 gallons of oil into the Bay. This accident brought renewed attention and focus to current federal government procedures, practices, and research. Spills such as the *Cosco Busan* can be costly. The cleanup costs for this relatively small spill were close to $100 million. Following this event and other recent accidents, it is clear that the United States needs a more robust research and development strategy to reduce the environmental and economic impacts of oil spills. Currently, responders face a number of emerging threats arising from an increase in maritime transportation, potential for offshore energy exploration in remote locations, aging infrastructure, and new fuel stocks and blends.

More than ten federal and numerous state and local agencies are called upon to assist in the federal response team in some manner. Given the high environmental and economic cost of oil spills such as the *Cosco Busan* and the current lack of directed research, a reinvigorated and streamlined research and development program would help to improve the effectiveness of oil spill response efforts and ecosystem mitigation at a fraction of the cost of a single large spill.

[9] NOAA (2009) *Exxon Valdez Oil Spill Website*. National Ocean Service. Office of Response and Restoration Website. Accessed on May 20, 2009.

For these reasons, Representative Lynn Woolsey (D-CA) plans to introduce legislation to reorient the current federal interagency research and development program created in OPA. The draft legislation seeks to improve the Federal Government's research and development efforts to prevent, detect, or mitigate oil discharges. The bill provides a new direction to the existing program by guiding research towards emerging threats and streamlining a cumbersome interagency structure. Through this reauthorization, the responsible federal agencies will be better equipped to quickly and effectively respond to oil discharges both inland and in coastal waters.

FEDERAL OIL SPILL RESEARCH PROGRAM ACT
SECTION-BY-SECTION

Title: ***Federal Oil Spill Research Program Act***

Purpose: To amend Title VII of the Oil Pollution Act of 1990 and for other purposes.

Section 1: Short Title
Federal Oil Spill Research Program Act

Section 2: Federal Oil Spill Research Committee
Section 2 directs the President to establish an interagency committee to be known as the Federal Oil Spill Research Committee ('Committee'). The President shall designate a representative of the National Oceanic and Atmospheric Administration to serve as chairperson of the Committee, and the members of the Committee shall include representatives from NOAA, the United States Coast Guard, the Environmental Protection Agency, and such other Federal Agencies as the President may designate.

Section 2 requires the Committee to: 1) coordinate a Federal oil spill research program ('Program') to coordinate oil pollution research, technology development, and demonstration among the Federal agencies, in cooperation and coordination with industry, institutions of higher education, research institutions, State and tribal governments, and other relevant stakeholders; 2) complete a research assessment ('Assessment') on the status of oil spill prevention and response capabilities; and 3) develop a Federal oil spill research plan ('Plan'). The Assessment will provide the Committee with the information necessary to create the Plan.

Section 3: Federal Oil Spill Research Program
Section 3 requires the Committee to establish a Program for conducting oil pollution research, development, and demonstration. The Program shall focus on new technologies, practices, and procedures that provide for effective and direct response to prevent, detect, recover, or mitigate oil discharges.

Section 4: Federal Research Assessment
Section 4 instructs the Committee to submit to Congress an Assessment of the status of oil spill prevention and response capabilities that identifies current oil pollution research and development programs, identifies regional oil pollution research needs and priorities, assesses

the status of knowledge of oil pollution prevention, response, and mitigation technologies, and assesses the status of real-time data available to mariners, researchers, and responders. The Assessment shall be subject to a 90-day public comment period and shall incorporate public input as appropriate. The Committee is required submit the Assessment to Congress no later than 1 year after the enactment of Section 4.

Section 5: Federal Research Interagency Plan
Section 5 directs the Committee to develop a Plan to establish Federal oil spill research and development priorities. In developing the Plan, the Committee shall consider and utilize recommendations from the National Academy of Sciences, as well as State, local, and tribal governments. The Plan will make recommendations for improving oil spill recovery, mitigation, technologies, practices, procedures, and the quality of real-time data available to mariners, researchers, and responders. The Assessment shall be subject to a 90-day public comment period and shall incorporate public input as appropriate. The Committee is required to submit the Plan to Congress no later than 1 year after the submission of the Assessment.

Section 6: Extramural Grants
Section 6 instructs the Secretary of Commerce, acting through the Administrator of NOAA, to award competitive grants to institutions of higher education and other research institutions to advance research, development, and demonstration of technologies for preventing, detecting, or mitigating oil discharges in accordance with the goals and priorities of the Plan. The Secretary shall incorporate a competitive, merit-based process for awarding grants under Section 6.

Section 7: Annual Report
Section 7 requires the Committee to submit an annual report to Congress, concurrent with the annual submission of the President's budget, describing the activities and results of the Program during the previous fiscal year and outlining objectives for the next fiscal year.

Section 8: National Academy of Science Participation
Section 8 instructs the Secretary of Commerce, acting through the Administrator of NOAA, to contract with the National Academy of Sciences to assess and evaluate the status of Federal oil spill research and development prior to the enactment of the Federal Oil Spill Research Program Act and to submit: 1) an assessment of the program prior to enactment of the legislation; 2) a report to the Committee evaluating the conclusions and recommendations from the Assessment to be utilized in the creation of the Plan; and 3) a report to Congress evaluating the Committee's Plan, no later than 1 year after the Committee submits the Plan.

Section 9: Technical and Conforming Changes
Section 9 makes technical and conforming changes to the Oil Pollution Act of 1990.