

U.S. Department of  
Homeland Security

United States  
Coast Guard



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20 November 2017

## MEMORANDUM

From: Ms. Kirsten Trego  
Executive Director, Interagency Coordinating  
Committee on Oil Pollution Research

Reply to: 202-372-2269  
Attn of: Ms. Kirsten Trego

To: Members, Interagency Coordinating Committee on Oil Pollution Research (ICCOPR)

Subj: MINUTES FOR 2017 FOURTH QUARTER ICCOPR MEETING

1. General: ICCOPR held a meeting at CSRA Inc., the U.S. Coast Guard's contract support office in Arlington, VA on October 4, 2017. Ms. Kirsten Trego called the meeting to order on October 4, 2017, at 9:30 am and it continued until 4:15 pm. The agenda can be found in Enclosure (1). Representatives of ICCOPR agencies that were in attendance or on the phone were:

CAPT Joseph Loring, Chair, U.S. Coast Guard (USCG)  
Dr. Robyn Conmy, Vice Chair, Environmental Protection Agency (EPA)  
Ms. Kirsten Trego, ICCOPR Executive Director, USCG  
CDR James Weaver, USCG  
Mr. Kurt Hansen, USCG  
Ms. Karin Messenger, USCG  
LT Becca Brooks, USCG  
Ms. Vanessa Principe, EPA  
Mr. Greg Wilson, EPA  
Ms. Suzanne Chang, Bureau of Safety and Environmental Enforcement (BSEE)  
Ms. Kristi McKinney, BSEE  
Dr. Walter Johnson, Bureau of Ocean Energy Management (BOEM)  
Ms. Stephanie Bocek, Navy Supervisor of Salvage (SUPSALV)  
Ms. Erica Folio, Department of Energy (DOE)  
Mr. Scott Lundgren, National Oceanic and Atmospheric Administration (NOAA)  
Mr. George Graettinger, NOAA  
Dr. Barry Forsythe, U.S. Fish and Wildlife Service (USFWS)  
Mr. Nate Lamie, U.S. Army Corps of Engineers (USACE)  
Mr. Bob Smith, Department of Transportation (DOT) Pipeline & Hazardous Materials Safety Administration (PHMSA)  
Ms. Stacey Burger, CSRA

Guests:

Ms. Jill Brandenberger, Pacific Northwest National Laboratory (PNNL), DOE  
Ms. Kayte Denslow, PNNL, DOE  
Mr. Dan Will, Government Accountability Office (GAO)  
Mr. Travis Schwartz, GAO  
Ms. Christine Kehr, GAO

2. Welcome and ICCOPR Opening Remarks: The following opening remarks were made:

a. CAPT Joseph Loring (USCG)

- CAPT Loring welcomed all participants to the Fiscal Year (FY) 2017 fourth quarter meeting.
- CAPT Loring thanked participants for their flexibility with the rescheduled meeting as a result of the hurricanes. USCG is still actively responding to all three hurricanes, including the massive Emergency Support Function (ESF) #10 response to Hurricane Harvey. Aside from storm damage, the flooding resulted in an expanded ESF #10 response to household hazardous waste, in addition to the traditional oil/hazardous materials response. Hurricane Irma did not have a lot of industry damage, but also resulted in a lot of household hazardous waste. The ESF #10 response has not really begun for Hurricane Maria, which brings additional logistical challenges. The personnel at Sector Puerto Rico are victims and are having a hard time performing normal operations. Sector housing was wiped out.
- GAO was invited today and will provide some comments. They are here to observe and learn what we do as ICCOPR.
- The Spill of National Significance (SONS) Public Affairs Reference has been approved and published. It is a high-level document for public affairs personnel to brief senior leadership in their respective offices. It is posted on the USCG Office of Marine Environmental Response (CG-MER) Public website (<http://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/Marine-Environmental-Response-CG-MER/MER-3/>).
- LCDR Platt just completed a trip to Guyana. Guyana does not have any plan for oil spill response, and the USCG is assisting them in the development of a plan to support their offshore drilling. This support is funded through the U.S. Department of State (DOS).
- Personnel Updates:
  - RDML Brown is now in District 7; he was replaced by RDML Jack Vogt.
  - CAPT Anthony Popiel has been replaced by CAPT Bill Carter, who was a former strike team member with a background in pollution response.
  - Mr. Chris Hershey is Mr. Kevin Sligh's backfill; he just started on Monday.

b. Dr. Robyn Conmy (EPA)

- Dr. Conmy thanked CAPT Loring for the comments on the hurricanes that touch everyone personally and professionally.
- Dr. Conmy noted that this is the Fourth Quarter Meeting, and it is the First Quarter of 2018, ICCOPR members look forward to hearing about the status of the Annual Report. The spreadsheet was so helpful to review the products and provide a clear map of the

ICCOPR projects. As EPA is formulating the new research priorities, we are finding the spreadsheet useful and using that to plan upcoming research.

3. General Updates/Announcements:

a. GAO

- The representatives from GAO have spoken to many of the ICCOPR members and are starting a review looking at oil spill pollution, prevention, response and restoration efforts. GAO is looking at the use of settlement funds post Deepwater Horizon Oil Spill and oil spill pollution research.
- GAO is interested in seeing how the committee works, how research is coordinated, and how priorities are made.
- GAO is early in the review process, and is just working to get a feel for what everyone is doing at this stage.

b. Conferences

- Ms. Trego noted many members of ICCOPR are on the planning committee for the 2018 Gulf of Mexico Oil Spill and Ecosystem Science (GoMOSES) Conference. Over 400 submissions have been received, and the planning committee is reviewing the submissions and working through the selection process. The conference will focus on response, restoration, and resiliency.
- Ms. Trego noted that the International Oil Spill Conference (IOSC) proceedings from the May 2017 conference are available online. Full articles have been posted, and those that were accepted as alternates are being added. [www.ioscproceedings.com](http://www.ioscproceedings.com)
- CLEAN GULF will be held December 5-7, 2017 in Houston, TX.
- Ms. Trego stated that the National Academy of Science (NAS) Gulf Research Program co-hosted a workshop on Rapid Response to a Major Marine Oil Spill was held in August and the Proceedings of the workshop should be published soon. The workshop brought together academia, the response community and health/disaster preparedness communities for an excellent dialogue on oil spills, public health and community resiliency.
- Mr. Greg Wilson (EPA) noted that the NAS Committee: Evaluation on the Use of Chemical Dispersants and in Oil Spill Response that is looking at oil spill response and dispersants will have their third meeting in St. Petersburg, FL on October 25-26, 2017.
- The Arctic Domain Awareness Center (ADAC), a Department of Homeland Security (DHS) Center of Excellence, has the primary mission to do research that helps USCG operate in the Arctic. ADAC is holding a workshop on October 23-25, 2017 focused on large oil spills in the Arctic. The intent is to discuss this with the intent to drive research questions to possibly be funded by DHS Science & Technology (S&T). The workshop will walk through a specific scenario, and identify the problems that need to be answered. The workshop will be oil spill response focused with participants including: government (national to local), academia (U.S. and Canada), and researchers. There will be a new round of ADAC funding to fund R&D based upon the workshop.
- Mr. Lundgren stated that he attended the Industry Technical Advisory Committee in Plymouth, UK. It included 43 presentations and sessions with an overall theme of industry technical group striving to build stronger bonds with government. The intent is to work with practitioners to bundle knowledge.

- Mr. Kurt Hansen (USCG) noted that he received a request from Canada to participate on a committee to identify research needs.
  - Dr. Conmy (EPA) noted that she received the same email, as did Mr. David Westerholm (NOAA).
  - Mr. Hansen is working to determine if he can participate.
  - The goal of the Committee is to look at dovetailing interests for U.S. and Canada response to oil/hazmat spills. Dr. Ken Lee, National Science Advisor for Oil Spills at the Canadian Department of Fisheries and Oceans (DFO) will be coming to the December ICCOPR Meeting to provide more information.
  - Invitees have to agree to participate in the Committee by next week.
  - Mr. Westerholm is coordinating through NOAA international and legal staff on the request. One concern that NOAA had was that there will be some funding for international research, and NOAA wanted to ensure that participation in the Advisory Committee does not preclude participation in the research. NOAA is interested in participating, pending the confirmation of their questions.
  - Dr. Conmy noted that EPA shares the same sentiments as NOAA. Mr. Lundgren stated that NOAA received an invite to a meeting in Houston, TX to provide input to the operational side to killing and burning wellhead operations. NOAA will not be participating.
- c. Other Updates
  - Ms. Trego (USCG) reported that the Gulf of Mexico Research Initiative (GoMRI) has announced their final round of grant recipients, and all the GoMRI funded projects will be wrapping in the next few years (10 year initiative ends in 2020).
  - Mr. Scott Lundgren (NOAA) noted that Mr. Glen Watabayashi has retired after 36 years of federal service. This leaves a gap in the Physical Oceanography area. NOAA has brought on a new Scientific Support Coordinator (SSC) Ms. Brandi Todd, who started in New Orleans, LA this week. She formerly worked in the EPA Regional Office. NOAA is also hiring for a chemist as there has been some staff turnover.

**Action Item:**

- ADAC has a call out for research proposals; the date that proposals are due needs to be confirmed.
4. Presentation 1 – Pacific Northwest National Laboratory Oil Spill Research Capabilities: Ms. Kayte Denslow and Ms. Jill Brandenberger (PNNL) provided an overview presentation of PNNLs capabilities (Enclosure 2).
- PNNL is a federally funded research and development center (FFRDC), but was not established with a specific oil spill research mandate. However, PNNL has developed capabilities based upon our location in Washington State, as part of a DOE complex, and have sustained this established expertise for many decades.
  - Ms. Denslow stated that much of PNNL’s research and development (R&D) has centered on waste storage, including long-term storage, and assisting with the R&D for the Department of Defense’s (DOD) Hanford facility, with deals with nuclear waste. PNNL helps with research answers to Hanford’s environmental remediation, waste processing and waste management. This research has also shaped PNNL’s mission and capabilities.
  - Ms. Denslow noted that PNNL was heavily involved in the Exxon Valdez response.

- Of the national labs, PNNL is distinguished as the lead in tech transfer and intellectual property; PNNL publishes openly and offer technology to partners.
- Ms. Denslow stated that when talking about research, PNNL has the tools, but would just need to choose the right ones for the job that the researchers are being asked to do.
- The majority of PNNL funding comes from DOE (approximately 70%) through competitive proposal processes. Others that fund PNNL include DOD, DHS, and the private sector. As much of the research is federally funded, PNNL makes it our mission to provide access to technology, licenses for free or a small charge, and provide technical assistance to small businesses.
  - Tech transfer can be licensing or transfer of a prototype to the end user.
  - If the government funds the research, then the end result or product is the government's and will be transferred to them.
- Research sponsored by DOE Energy and National Security is being conducted in Sequim, WA; PNNL cannot put oil into the bay, but it is a very unique location for R&D. Sequim is the devoted marine sciences lab for PNNL.
- Ms. Denslow noted that PNNL had been working on the development and testing of a new magnetic scanner for airports. Following 9/11, the new magnetic scanner project was escalated to get them into airports.
- Since early 2000, PNNL has been developing tools, and the new problem became data science. There are lots of data streams, however, piles of data do not answer questions, results answer questions. For the last 5-10 years, PNNL has been focusing in on the right tools for the job for grand challenges, and helping with the interpretation of the results. PNNL will often find the right technologies can be commercial or emerging. PNNL only develops technology where there is a huge gap and no solution. PNNL does not compete, but works to complement existing technologies.
- PNNL has cross cutting sectors, and each has about six focus areas, but personnel can be pulled from across sectors to work on a project or research.
- Oil spill research falls under Energy and Environment – Environmental Health and Remediation Sector.
- The role of PNNL is to address “grand challenges” which are the high priority, many faceted problems that require multiple disciplines.
- PNNL does not commercialize products or prototypes.
- PNNL is not an oil spill organization, but has capabilities to support oil spill research. It is not application specific, but PNNL has the tools and expertise to address these problems in a core capability.
- PNNL is relatively new to oil spill research. Ms. Denslow noted that PNNL has done some projects with BSEE, answering questions regarding dispersant degradation, effects on fate and transport, and effectiveness of herders in mechanical recovery or separation.
- PNNL is part of the NAS restoration work, and this work is based on evidence based evaluation framework developed for the U.S. Army Corps of Engineers (USACE) and tested for the Columbia River.
- Dr. Conmy noted that the point about scale is well taken. EPA faces the scale issue frequently, with scaling from bench testing to using the Ohmsett Facility; it is hard to introduce all of the variables, such as correct temperature, salinity, all of the things that are suspended in a water column, etc. The only way to tackle would be better modeling.

- Dr. Conmy noted that it seems as though PNNL has taken a marine centric approach and asked if freshwaters are included in their focus and in the talk.
  - Ms. Denslow noted that is correct. Imbedded in this focus is the increase in offshore production. Freshwater is not off the table.
  - Dr. Conmy noted that freshwater is a pressing need, with more rail shipping of heavy oils, and the potential for oil to spill into a waterway. She further noted that there are some complicated issues, related to scale, that have not been tackled yet for freshwater.
  - Ms. Denslow noted that is a good point. PNNL does focus on saltwater, but have the freshwater capability. The mesoscale testing allows for rapid changing in the tank, from saltwater to freshwater. PNNL has the ability to use real sea water (filtered), resulting in a truer test environment.
  - It was noted that freshwater is a big research gap.
  - There is a need to understand the process level dynamics to understand the modeling.
  - Ms. Brandenberger noted that a challenge that PNNL has been tackling is pores to shores; this has not been solved yet. This is still in the environmental and molecular sciences lab being studied, with a focus on understanding the interaction between freshwater and saltwater, where there is so much chemistry changeover.
- Ms. Erica Folio (DOE) stated that the focus of DOE's offshore research is oil spill prevention and inquired about work in that area.
  - PNNL is not specifically doing oil spill prevention research, but Ms. Denslow noted that if you think of any other threat, it would be a similar approach, with questions and considerations such as: the need to monitor the source? Where are hazards or threats likely to concentrate? The quicker you can detect, the faster you can respond. Environmental security includes active monitoring. Ms. Denslow noted that the framework would be the same – risk, mission assurance, critical elements – there is similarity with the oil spill industry. She further noted that PNNL is starting discussions with the Washington Department of Ecology on different types of oil and transport (rail, pipelines), which would be of similar concern to ICCOPR members.
- Mr. Wilson asked about looking at unconventional oils, would those discussions include analytical techniques, as some of those problems cannot be resolved using traditional analytical methods.
  - Ms. Denslow noted that PNNL has a forensics lab focused on fuels, established for the Internal Revenue Service (IRS). Additionally, PNNL has projects sponsored by oil companies, including BP, Chevron, and other companies with a focus on oil production, enhancement, and modeling during production. Ms. Denslow asked representatives from that lab if there is a way to characterize those oils. The lab is doing fingerprinting of oil in the labs.
    - It was asked if fingerprinting can be done in the field. If yes, how would oil fingerprinting be done in the field?
    - Ms. Denslow noted that they are doing it, but she would need to coordinate with the team that is doing this work for more specifics. It is at PNNL, in the building where Ms. Denslow is located; she will coordinate with them to provide additional information to Ms. Trego.

- Ms. Kristi McKinney (BSEE) asked about tech transfer. The intent of much of the R&D done by BSEE are prototypes that BSEE wants to get out into the field, but does not have experience with transition to commercial use.
  - Ms. Denslow noted that PNNL can help BSEE get the prototype to someone who could manufacture it; this is something that PNNL has done for other agencies.
- Mr. Chris Hershey (USCG) asked if PNNL has an international portfolio.
  - Ms. Denslow noted that with respect to National Security, or oil, PNNL does not have international work. However, there is some work with the DOS. Ms. Denslow will go back to the points of contact at PNNL and get additional information on PNNL's international work.
  - PNNL is open to finding ways to share contacts and assist ICCOPR agencies to leverage information.
- Ms. Denslow and Ms. Brandenberger thanked the ICCOPR members for inviting them to the meeting and allowing them to present on PNNL's capabilities.

**Action Item:**

- Ms. Denslow will coordinate with the lab doing the oil fingerprinting and provide additional information to Ms. Trego for sharing with ICCOPR members.
- Ms. Denslow will go get additional information on PNNL's international work and provide to Ms. Trego for sharing with ICCOPR members.

5. Presentation 2 – NOAA's Office of Response & Restoration (OR&R) Deepwater Horizon Natural Resources Damage Assessment (NRDA) Lessons Learned and Operational Tools Development (BSEE – NOAA Interagency Agreement): George Graettinger (NOAA) provided an overview presentation on this R&D from the Deepwater Horizon Oil Spill (Enclosure 3).

- Mr. Graettinger highlighted that this work was done through an interagency agreement with BSEE.
- The research intent is to look at issues related to surface oil extent and thickness measurements as well as water column characterization to assist with modeling effort and provide a full picture of oil spills.
- Mr. Graettinger noted that there is variability within each in situ thickness measurement method and across each of 3 methods examined; the researchers struggled with how to compare physical in situ thickness results to aerial. The 3 in situ methods were all modified based upon work at Ohmsett.
  - Mr. Graettinger noted that more data is needed and more co-located data for the thickness measurements.
- Struggled with in situ thickness testing, which resulted in the development of an add-on thickness calibration (laboratory project).
- Dr. Conmy asked if the in situ thickness assessment results were all done in the lab, what would be the correlation to field sampling. What is the comparison/assessment translation to field operations?
  - Mr. Graettinger responded that one reality is that the team only went out when there were seas that were 3-4ft max, and more controlled open water conditions. Most extreme conditions, higher waves, would make it difficult to impossible to do field sampling. The idea is to control as many of the variables that impact the in situ and

- satellite measurements to better understand what happens in situations where we can only make measurements with remote sensing.
- Dr. Conmy asked if there is an in-between. Did the size of the waves vary at Ohmsett? In that data, were testing the same methods, could the variability be explained by the physical conditions within the tank? Does the data exist?
    - Mr. Graettinger stated that there was much less of the thin oil in the Ohmsett test. If Ohmsett testing is done again, he would recommend targeting the edges of the slick where there was more variability as the project evolved and understanding evolved.
    - More of the assessment should have been done at the edge, including finding a way for testing the same thickness of oil with each method.
    - Mr. Graettinger noted that one of the findings from this project is that the remote sensing data seems to be just as good as the in situ testing when you consider all of the variables that are part of the process.
    - Mr. Graettinger stated that the researchers using the Plexiglas Dip Plates tried not to dip to a prescribed line, but pursue the area of the dip plate, as they could not control the dip. He noted that there was a cheer on the boat when the team hit the line (on the dip).
  - Mr. Wilson asked if they tried to remove or minimize the variability of the dip test; did you put it into a test tube, look at types of glass, etc.
    - Mr. Graettinger noted that the team modified each test method each time they went out and there was variability in the types of accuracy. This is what lead to doing the laboratory testing.
  - Mr. Wilson asked if the lab testing identified the greatest variables and areas where researchers could make modifications or changes, such as is suggested.
    - Mr. Graettinger stated that across this project there were resources, multiple trips, and all researchers tried to collect as much data as possible. However, there was always the note if we could have only done “x, y, z....” We always want more data.
  - Ms. McKinney noted that this is a problem that BSEE has had. There is a project developing a prototype that will be tested in November. She noted that if Mr. Graettinger is available to come up and observe, that could prove beneficial. It is a sensor technology that is vertical and will be dipped into the oil thickness to measure the difference in capacitance between air, water, and oil; accuracy is limited to the spacing between measurement lines. This project will be pairing measurements with analysis algorithms to look at wave conditions and identify which measurements should be kept to provide accurate overall measurement. The beauty of the sensor is that it will be a low-cost option. It consists of a PC board, a few chips to assess the data, and it will be a wireless communication to provide immediate data to the operator. The hope is that it will work in wave conditions and attached to a skimmer or boom. The test will be November 27 through December 1, 2017.
    - Mr. Graettinger is interested and will coordinate with Ms. McKinney offline.
  - Mr. Walter Johnson (BOEM) asked what is the approximate pixel size for the data.
    - Mr. Graettinger responded that it is around 6 meters; Unmanned Aerial Vehicle Synthetic Aperture Radar (UAVSAR) is closer to 1-3 meters. Worldview depends, and is at a similar level.



- Mr. Lundgren asked if some of the remote sensing may have been as accurate as field testing. Does Mr. Graettinger anticipate continuing to do ground truth sampling, or would he recommend using the remote sensing for future cases?
  - Mr. Graettinger stated that decision is a gut check level. With the variability seen in the in situ thickness vs. satellite results, it comes down to the situation and what you are assessing, what are the conditions, and are you able to get in situ measurements. It is always better to have ground truth when it is available, if you don't have ground truth, it doesn't mean that you did not try. Need to have the ability to make a recommendation.
  - Dr. Conmy noted that with the exception of radar, the conditions will not always be right for good visible satellite coverage; it could be cloudy or varying conditions, so it is recommended that all tools need to be used for sampling.
  - It was noted that remote sensing can be that weather dependent sampling tool. The total package is SAR, Visible and near infrared combo included on appropriate platform of opportunity to mitigate issues.

6. Member Research & Development (R&D) Updates

a. EPA (Enclosure 4)

- Dr. Conmy provided an overview of projects that are wrapping up (three), ongoing research (four), and noted new projects and other activities that EPA is involved in (please see slides for details on each project presented):
  - Wrapping Up
    - Dispersion Effectiveness in Hypersaline Waters
    - Diluted Bitumen Biodegradation and Toxicity
    - Crude Oil Simulant Development
  - On-Going Research
    - NCP Product Effectiveness
    - Oil & Product Toxicity
    - Reference Oil Screening
    - REMUS Field Trial
  - New Projects
    - REMUS AUV for Oil Detection
    - Oil Thickness Estimates using Lidar
    - In-situ Burn Air Emissions
  - Other Activities
    - GoMOSES 2017 Planning Committee; EPA has 3 papers
    - Clean Gulf Panel
    - NAS Dispersant Panel
    - FOSTERRS
    - Canada Oil Spill Initiative Advisory Committee Participation
    - Experimental Lakes Area Dilbit Mesocosm Study
- Mr. Lundgren asked if there is a partnership between the EPA and the National Oceanographic Center, as they have done some autonomous systems on spills in the United Kingdom.

**Action Item:**

- Mr. Lundgren can provide contact information to Dr. Conmy for the National Oceanographic Center in the United Kingdom.

b. NOAA (Enclosure 5)

- Mr. Lundgren presented on several ongoing NOAA projects (five; see below), SeaGrant seminars and OR&R training (please see slides for details on each project presented):
  - Remote Sensing Studies
  - Modeling Development: General NOAA Operational Modeling Environment (GNOME) Visualization, Oil Library
  - Enhanced Data for Modeling/ GNOME
  - Effects of Marine Pollution: Annual Literature Review
  - Applied Data Exchange and Common Operating Picture: 2017 Fall Hurricanes
- Mr. Lundgren noted that the Gulf of Mexico SeaGrant Seminars all have WebEx.
- PNNL noted that they have models that could fit the NOAA research needs for nearshore models.
  - NOAA will coordinate with PNNL offline.
- PNNL has done some automated response for terrestrial and some on land. This includes the use of SAR for imagery during Hurricane Harvey. PNNL is exploring the value of commercial vendors with rapid refresh rates.
  - PNNL and NOAA will coordinate offline.

**Action Item:**

- Mr. Lundgren will follow up with Ms. Denslow and PNNL.

c. BSEE (Enclosure 6)

- Ms. McKinney provided an update on Ohmsett activities.
  - The current contract for Ohmsett was extended through December until the protest with the new contract can be resolved.
  - The 25<sup>th</sup> Anniversary Celebration of the Ohmsett Facility date is pending award of the new contract.
  - BSEE is sponsoring three tests at Ohmsett:
    - Study – Emulsion Formation by Weathering and Photo-oxidation
    - Oil Spill Thickness Sensor Testing
    - Sensor Calibration and UAV Flyover
- Ms. McKinney provided an overview of recently completed and ongoing projects (please see slides for details on each project presented):
  - BSEE OSRR #1074 – Quantitative Measurement of In Situ Burn Efficiency and Burn Rate
  - BSEE OSRR #1038 and #1066 – Analysis of How Environmental Conditions Affect Dispersant Performance During Deep Ocean Applications
  - BSEE OSRR #1076 – WebGNOME Trajectories and Oil Libraries
  - BSEE OSRR #1090 – Operational & Efficiency Assessment of Dispersant Delivery Techniques/Systems
  - BSEE OSRR #1092 – Autonomous Underwater Vehicle Deployable Oil Spill Igniter;

- BSEE OSRR #1093 – Innovative Fire and Fuel Configurations to Optimize In Situ Burning Volumes and Efficiencies
  - BSEE OSRR #1094 – Fire Whirl Fundamentals
  - BSEE OSRR #1095 – Research and Develop Interface Insulation Systems and Vigorous Burn Inducer
  - BSEE OSRR#1096 – Perform Emissions and Residue Testing for *In Situ* Burn Tests
  - BSEE OSRR #1091 – Estimating Oil Slick Thickness with LiDAR Remote Sensing Technology
  - BSEE OSRR #1097 – Slick Thickness Characterization based on Low Noise, Polarized Synthetic Aperture Radar
  - BSEE OSRR #1098 – System and Algorithm Development to Estimate Oil Thickness and Emulsification through a UAS Platform
  - BSEE OSRR #1083 – Development of a Recovery Efficiency Sensor
  - BSEE OSRR #1088 – Assessment of Oil Demulsification and Separation Technologies
  - BSEE OSRR #1089 – Investigation of Design Enhancements to Current Boom Technologies
  - BSEE OSRR #1101 – Development of an Active Ice Management System
  - Mr. Westerholm asked if the configuration of the fire boom will be funneled and how large of a configuration is planned (regarding project #1093). Will it be tested in open water?
    - Ms. McKinney noted that the concept is to look at different aspect ratios (1:1 and 1:10). The prototype will be developed from a 50ft section of commercially available fire boom. It will be operationally used with current fire boom.
  - Dr. Conmy asked if the testing (for project #1098) will be at Ohmsett or in the Gulf of Mexico.
    - Ms. McKinney stated that it will be tested at Ohmsett. The project was just awarded, and the kick-off meeting has not yet occurred.
- d. USCG (Enclosure 7)
- Mr. Kurt Hansen presented on several ongoing USCG projects (see below) (please see slides for details on each project presented):
    - Response to Oil in Ice (Project 4701)
    - Detection and Mitigation of Oil within the Water Column (Project 4702)
    - Improved In-Situ Burning for Offshore Use (Project 4704)
    - Oil Sands Products Response (Project 4705)
    - Shale Oil & Gas Preparedness and Response (Project 4707)
    - Oil Spill Response Emerging Technology Assessment (Project 4708)
    - Nearshore and Inland Evaluation of the Effective Recovery System Potential (ERSP) Calculator (Project 4710)
    - Arctic Operations Support (Project 6210)
  - Mr. Hansen stated that FY19 Idea Developments are due October 4, 2017. Idea submission review is scheduled for November 8-9 at USCG Headquarters; assessment of prospective portfolio is scheduled for February 21-22, 2018 at the USCG Research and Development Center.
  - Mr. Westerholm noted that the Arctic skimmers are AquaGuard out of Canada.

e. BOEM

- Mr. Johnson noted that BOEM R&D is under the Environmental Studies program. The purpose is to gather information required for the National Environmental Policy Act (NEPA) and other planning documents. Projects are baseline, basic habitat mapping, ecosystem surveys, etc.
- Projects include:
  - Microbial Degradation in Arctic Marine Environments
    - This project is collecting samples in the Chukchi and Beaufort Seas and testing for microorganisms indigenous to the locations and estimate the taxonomic for the biodegradation.
  - Statistical Analysis of Oil Spills that have occurred in Alaska
    - This project is using the fault tree to identify factors unique to Alaska and estimate the probability of spills in the NEPA analysis.
- Mr. Johnson stated that the Secretary of the Interior has not yet announced the plan for changes to the Five Year Plan for potential leasing areas; at this time, all are on the table for analysis. An update should be provided mid- to late October on the Administration's plan for the oil leasing program for the next five years. The same BOEM developers who worked on the previous five year plan will also develop the new plan. The plan is to look at lease sales and try to streamline the process.

f. DOE

- Ms. Folio noted that DOE's funding opportunity announcement with three primary topic areas (listed below) closed:
  - Technology Validation using Field Laboratories
  - Advancement in Subsurface Diagnostics
  - Offshore Spill Prevention

g. U.S. Navy

- Ms. Stephanie Bocek provided an overview of two relevant projects:
  - Passive Acoustic Sensor Project
    - This is a handheld or remote operated vehicle (ROV) mounted sensor. It did not work well in real-world on an actual wreck. The problem appeared to be a finicky contact surface. Researchers are working on decoupling the sensor and working on the interface.
    - The sensor will be tested again in a controlled experiment.
    - This will be an FY18 project.
  - Rapidly Deployable Wreck Survey System
    - This is a package of all of the tools that a diving team would need to go and do an assessment of a wreck. This would include tools to take a sample, measurements, etc.
    - It was asked what tools are intended for incorporation in the package.
      - Ms. Bocek responded that the intent is to enable fleet divers with the provision of oxygen sensors, measurement and sampling tools that are battery powered, easy to carry with the divers to allow for a rapid evaluation of a wreck.

- Ms. Bocek stated that often the fleet is diving on wrecks for exercises, and as they are not scientists, having the proper tools will allow them to take needed samples for evaluation.
  - Dr. Conmy asked if it is in the Navy's interest to pair up with industry on the development of tools. There are a lot of commercial vendors who would love to assist the Navy, and could assist with making existing tools in a miniaturized format, allowing the tools to work at depth for quick sampling.
  - Ms. Bocek responded that the U.S. Navy can purchase the equipment needed, but does not have a funding mechanism to pay someone to develop what is needed.
  - Dr. Conmy recommended that Ms. Bocek consider partnering with the Navy Research Lab.
- The U.S. Navy has not done any hurricane ESF #10 response; but have been assisting with ESF #3 – Public Works and Engineering with wreck removal support in Key West and Puerto Rico.
- Mr. Lundgren noted that the UK Ministry of Defense is doing a Remedial Underwater Legacy Environmental Threat (RULET)-like project.
  - Ms. Bocek responded that the U.S. Navy has been working on this project. The two agencies have been collaborating and trying to assist each other.

h. USFWS

- Dr. Barry Forsythe noted that USFWS received funds for a few projects including:
  - Risk Assessment in Relation to Transport and Pipeline Transport of Oil
  - Baseline Sampling and Assessment of Endangered Species
    - This project will look at impacts and damages after a spill.
    - The Sturgeon portion of the project finished in February; the Bull Trout portion just started.
    - The Sturgeon project was presented at a conference in May.
  - There are a few additional projects, but specific details cannot be reported at this time. The funding for these projects went to the U.S. Geological Survey (USGS).
    - Mr. Forsythe recommended consideration of having USGS present on these projects at a future meeting.
- Dr. Forsythe noted that USFWS received funding from Congress to pay for Inland Oil Spill Response Classes; 14 classes have been conducted and six more are planned. This class is for land managers, their staff, and Tribal entities.

i. USACE

- Mr. Nathan Lamie reported that Ms. McKinney covered the work that USACE is doing with BSEE.
- Additional projects being worked on by USACE are:
  - Oil encapsulated within Ice
  - Helicopter-mounted Igniter System to State In-Situ Burn in Difficult/Icy Environments
  - Mechanical Recovery from Arctic Conditions

- This project is ongoing and there is a plan for a demonstration in February 2018.

j. PHSMA

- Mr. Bob Smith noted that PHSMA has not had a lot of R&D activity. It took six months to have a solicitation reviewed and white papers reviewed. The award is pending, and assumed to be in the January/February 2018 timeframe. Topics include threat prevention and leak detection.

7. Biennial Report Update

a. Discussion

- Ms. Trego reported that at the last meeting, ICCOPR members wanted to streamline the format of the Biennial Report and increase the impact. A small working group has been developing the front section of the report, while a second team did a large data call on projects asking about member projects started, ongoing or completed. Feedback was received from almost all ICCOPR members on their projects, but there are a few outliers. The total number of projects is 343. Ms. Trego will do a review of the summary report, and the numbers may change slightly, but at first glance, it is a good cross section of all R&D topic areas. Ms. Trego will add in the information from IOSC.
- The new ICCOPR website is: [www.dco.uscg.mil/ICCOPR](http://www.dco.uscg.mil/ICCOPR)
- It was recommended to include ICCOPR member pictures on the website.
- The ICCOPR website should include a section on workshops and conferences, including pictures.
- It was recommended to have an ICCOPR business card that can be handed out at conferences or when anyone is briefing Congress. The card should include the ICCOPR website.
- It was acknowledged that ICCOPR does not have a budget; however, the recommendation was made to have an ICCOPR booth, fact sheets, brochures or other handouts that can be distributed at conferences sponsored by ICCOPR members.
- The final draft of the Biennial Report is due to the Department of Homeland Security (DHS) by the end of the calendar year. To accomplish this, the report needs to be final by mid-November to be submitted through many layers of internal CG review by December 15.
- The framework for the Biennial Report draft include the following revised sections:
  - Introductory/Admin Information
  - Member Research and Technology Initiatives (projects; highlight some of the key projects (need criteria for what to highlight),
  - Member Collaboration and Ongoing Initiatives
  - External Coordination.
- Member Research and Technology Initiatives Section will include:
  - Summary of ICCOPR member projects including metrics such as number of projects, project, number projects tied to Standing Research Areas (SRAs) in R&T Plan and identification if projects address priority research priorities identified in R&T Plan.
  - Highlighting some of the key projects
    - Criteria are needed for what to highlight. The membership discussed:

- Big impact projects
  - Multi-agency coordination
  - It was asked if this section of the report will be structured by Prevention, Preparedness, Response, and Injury Assessment and Mitigation. It was further asked if the intent is to ensure that there are projects highlighted in each area.
    - Ms. Trego responded that yes, the intent was to group the projects by these categories, and include at least one project representing each of four research classes. The goal is to include representation from all ICCOPR member agencies, including cross-cutting projects.
- The ICCOPR members still need to identify the overarching message to include in this section.
  - Projects will help go towards that overarching message and to show the benefit for ICCOPR member agencies to continue research and coordination.
- The recommendation was made to ensure that the report does not become too detailed; to ensure the focus remains on the report being streamlined.
- The full portfolio of projects will be listed in Appendix A, by research class and SRA with a hyperlink to the ICCOPR website which includes a brief description, and further linkage to the project site (if applicable).
- It was asked how many projects were envisioned to include.
  - Ms. Trego responded that she did not put a specific number on it, but was hoping for 10 or less.
  - Ms. Vanessa Principe (EPA) responded that she was envisioning even less.
- It was noted that there are ways to present the data that is focused on the mission, and highlights projects within the narrative, including why the projects are important and their relevance to current events (i.e., projects that prepare ICCOPR member agencies for responding to hurricanes and ESF #10 responses).
- Member Collaboration and Ongoing Initiatives
  - This section will highlight strategic multi-agency projects, such as regular collaboration between agencies that is not specific to ICCOPR.
- External Collaborations
  - This section will include information that is external to the Federal government, or projects that ICCOPR members do with external partners (i.e., GoMRI, GOMOSEs, etc.). These projects do not need to be R&D specific. They could include joint industry task forces, the National Response Team, etc.
- It was noted that the R&T Plan has a comprehensive list of projects that could be referenced, and then highlight areas that have changes.
- Goal is to tell ICCOPR story up front (first 10-15 pages) so that reader does not have to read the entire report
- CAPT Loring noted that he is working to get approval of a Bering Sea Report and Great Lakes Report, which were both congressionally mandated. In the approval process, there has been push back to limit the reports to exactly what is asked for. CAPT Loring recommends looking at what exactly is asked for in the Legislative Requirement, and then refer them to the ICCOPR website for additional information.
  - Ms. Trego responded that the requirement is a report on activities carried out in the last two fiscal years or proposed to be carried out in the next two years.

- CAPT Loring stated that the shorter that the report is, the better. He recommended including links for where to find additional information and that the offer can even be included for ICCOPR members to come and speak to Congressional representatives in person.
- PNNL noted that from an outsider perspective, the spreadsheet with research areas, highlighting where progress has been made in last 2 years and where funding will be invested in the next two years is a great way to highlight. Ms. Denslow further noted that the ICCOPR website is a great tool and a way to show impacts made.
- All historical reports will be included under “Documents” on the ICCOPR website.

**Action Item:**

- Ms. Trego will send the project spreadsheet to all ICCOPR member agencies.
- Each ICCOPR member agency will select the three best projects to highlight for their agency in the front section of the report. With the selection, each ICCOPR agency should include a short comment on why it is relevant, which will be used to help frame the task. Projects to include should be those that provide the best bang for the buck, most interest, arctic area focus, or other pressing topics.

8. New Business

- Nothing to report.

9. Vice Chair Rotation

- Dr. Conmy’s tenure as Vice Chair has ended as of this meeting. CAPT Loring noted that he has appreciated Dr. Conmy’s leadership.
- Mr. Lundgren of NOAA will be the next Vice Chair.
- CAPT Loring noted that it is a good model to rotate the ICCOPR members through the role of Vice Chair.
- Dr. Conmy stated that this has been a great opportunity serving as ICCOPR Vice Chair. She stated that she has learned more from ICCOPR members, and thanked CAPT Loring and Ms. Trego and LT Brooks. Dr. Conmy stated that USCG makes it easy to serve as Vice Chair of ICCOPR.
- Mr. Lundgren stated that he looks to continue the great model that the Vice Chairs before him started. NOAA is interested in work on technology and research implementation and collaboration, which are aligned with ICCOPR. He noted that injury assessment is not a core Oil Spill Liability Trust Fund (OSLTF) funded project, but he looks forward to opportunities to work with other bodies and entities to assist NOAA and ICCOPR.

10. Closing Comments:

- The next meeting is scheduled for December 13, 2017.
  - The focus will be on dispersants. There will be three guest speakers, including Dr. Ken Lee from Canada, Dr. Tim Nedwed from ExxonMobil, and Dr. J. Samuel Arey.
  - The meeting is scheduled for one day, however, Ms. Trego noted that she may try to make it a little longer and provide an opportunity for dinner afterwards with the out of town guests. The location is TBD.



- It was noted that since there will be three guest speakers, one opportunity to save time is to limit member updates to 2 slides to assist with condensing the afternoon session.
- Ms. Trego also noted that GAO will also be on the agenda to present their information and allow an opportunity for a Question & Answer session.
- It was proposed to consider starting the meeting earlier to accommodate the need for a slightly longer meeting.
- Mr. Wilson and Ms. Principe noted that EPA will check to see if they have space to host the meeting.
- Ms. Trego will also reserve space at USCG Headquarters.
- CAPT Loring thanked ICCOPR members for the great meeting. He noted that there is another tropical storm stirring in the Gulf of Mexico that may impact the coast this weekend, which could result in additional ESF #10 response operations.

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Enclosures: (1) Meeting Agenda for October 4, 2017  
(2) PNNL Brief  
(3) NOAA Brief  
(4) EPA Update Brief  
(5) NOAA Update Brief  
(6) BSEE Update Brief  
(7) USCG RDC Update Brief