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United States Coast Guard

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MEMORANDUM

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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: FY 2018 THIRD QUARTER ICCOPR MEETING MINUTES

1. General: ICCOPR held a meeting at Bureau of Safety and Environmental Enforcement (BSEE) Headquarters in Sterling, VA on June 13, 2018. Ms. Kirsten Trego called the meeting to order on June 13, 2018, at 9:00 am and it continued until 4:10 pm. The agenda can be found in Enclosure (1). Representatives of ICCOPR agencies that were in attendance or on the phone were:

CAPT Ricardo Alonso, ICCOPR Chair, U.S. Coast Guard (USCG)
Ms. Kirsten Trego, ICCOPR Executive Director, USCG
Mr. Kevin Sligh, USCG
CAPT Greg Hall, USCG
CDR Wes James, USCG
Ms. Karin Messenger, USCG
Mr. Alex Balsley, USCG
Mr. Ed Levine, National Oceanic and Atmospheric Administration (NOAA)
Ms. Erica Folio, Department of Energy (DOE)
Ms. Kristi McKinney, Bureau of Safety and Environmental Enforcement (BSEE)
Mr. Eric Miller, BSEE
Mr. Bill Vocke, BSEE
Ms. Karen Stone, BSEE
Mr. John Webster, BSEE
Mr. Maxwell Torney, BSEE
Dr. Walter Johnson, Bureau of Ocean Energy Management (BOEM)
Dr. Jeff Ji, BOEM
Dr. Zhen Li, BOEM
Mr. Brian Zelenke, BOEM
Mr. Tom Thompson, Department of Transportation (DOT) Maritime Administration (MARAD)
Dr. Robyn Conmy, Environmental Protection Agency (EPA)
Ms. Vanessa Principe, EPA
Dr. Greg Wilson, EPA
Ms. Diane Poster, National Institute of Standards and Technology (NIST)
Mr. Nathan Lamie, U.S. Army Corps of Engineers (USACE)

Ms. Marina Reilly-Collette, USACE
Dr. Barry Forsythe, U.S. Fish and Wildlife Service (USFWS)
Ms. Stacey Burger, General Dynamic Information Technology (GDIT)

Guests:
Dr. Susan Roberts, National Academies of Science, Engineering, and Medicine (NASEM) Ocean Studies Board
Mr. George Ax, Materials Techniques, Inc (MTEQ)
Dr. Michael Chung, The Pennsylvania State University
Mr. Ben Schreib, AECOM
Mr. Mike House, AECOM

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

a. Mr. Kevin Sligh (USCG)
- Mr. Sligh welcomed participants and thanked them for attending the Fiscal Year (FY) 2018 Third Quarter Meeting. Mr. Sligh thanked Mr. Miller and BSEE for hosting. He noted that this meeting is a great opportunity to hear the updates on research and development (R&D) across the agencies.
- Mr. Sligh noted that CAPT Alonso had a prior commitment, and would be arriving later in the morning.
- The ICCOPR Biennial Report remains under review at USCG Headquarters at the Vice Commandant level. Mr. Sligh noted that he anticipates the report moving forward shortly.
- The new Commandant, ADM Karl Schultz, was sworn in on June 1, 2018.
- CDR Wes James took over for CDR James Weaver to lead MER-3.
- CDR James noted that under the MER-3 programs, a few noteworthy events include:
  - National Response Team (NRT) Co-Chairs Meeting to be held in Philadelphia, PA on June 26-28, 2018.
  - The Spill of National Significance (SONS) Executive Seminar was held on March 22, 2018. The After Action Report (AAR) is under development. The SONS Executive Reference Guide is being revised based upon feedback from the SONS Steering Committee members.

b. Mr. Eric Miller (BSEE)
- Mr. Miller welcomed ICCOPR members to the BSEE Sterling building. He stated that on behalf of BSEE and BOEM, he is pleased to welcome ICCOPR.
- As Acting Division Chief of the Oil Spill Preparedness Division (OSPD), Mr. Miller noted that he is a collector of oil spill research & development (R&D) historical photos sold on eBay.
  - In his presentation, Mr. Miller showed a press photo published in the Houston Chronicle of an oil spill along the shore of Santa Barbara, CA in 1969. In the photo, straw was used to soak up oil. During the Refugio pipeline spill near Santa Barbara in 2015 similar methods were used for cleanup.
  - The Medusa was a skimming project in 1971 funded by the American Petroleum Institute (API). This was 20 years before the Oil Pollution Act of 1990 (OPA90).
  - Mr. Miller stated that today we should remember these R&D initiatives and try to connect on where we have been and where we are going.

- For R&D today, there are great facilities such as Cold Regions Research and Engineering Laboratory (CRREL) and BSEE's Ohmsett facility. Sharing R&D information, within ICCOPR, and potentially expanding to international partners, allows for the making of connections, and sharing information on the projects and technologies that are available.
- Ohmsett has had so many projects since its inception beginning in the early 1970s when it was run by the EPA. Mr. Miller discovered that Ohmsett still has many of the old project files dating back to the 70s in storage. BSEE plans to organize these files, digitally scan, and share them appropriately over the next 2 years. If there is a Medusa-type project sitting in these files, ICCOPR members will have access to it.
  - Dr. Conmy (EPA) noted that EPA would be happy to offer assistance on the project files. Mr. Miller stated that the plan is to coordinate with EPA as some of the projects are likely to be EPA records.
- BSEE has been developing various technologies, and have found that an important aspect is to have a visually communicate the oil spill response technologies and techniques. BSEE put forward a contract to develop graphics to explain oil spill and response products graphically. These graphics will be made available to government agencies.
  - The graphics have similar looks, a simple design, and are available to help explain oil spill response graphically.
  - Graphical abstract is used in other industries, and BSEE is focused on stressing the visual communication aspects of what they do.
  - Mr. Miller is working with BSEE communications staff on how to share them externally.
- Dr. Conmy (EPA) commented that this was a great presentation and asked if BSEE has considered writing graphical abstracts into project contracts. Mr. Miller responded that moving forward, that is exactly what BSEE intends to do.
- Dr. Conmy further noted that many journals are moving to graphical abstracts, and it is something to consider as the next International Oil Spill Conference (IOSC) planning phase is beginning. It might not be possible for the in-person conference, but it is something to consider for the online/digital version.
  - CAPT Hall (USCG) noted that when referring to the graphical abstracts for IOSC, the planning team will need to see if the platform used can support graphical abstracts.
- Mr. Sligh echoed Dr. Conmy's comments and requested a copy of the presentation to share with USCG, particularly Ms. Tulis, who is very interested in R&D.

Action Items:

- Mr. Miller will send Ms. Trego a copy of his presentation for sharing with ICCOPR members.

3. <u>General Updates/Announcements</u>:
   - The Gulf of Mexico Oil Spill & Ecosystem Science Conference will be held in February 2019. The requests for scientific sessions are out. For additional information, please refer to the website: http://gulfresearchinitiative.org/gulf-mexico-oil-spill-ecosystem-science-conference/.
   - The National Academies of Science (NAS) Gulf Research Program has an opening for a Senior Program Officer in social sciences.

- The first round of funds for the emergency grants equipment replacement for scientific research damaged during the 2017 hurricanes has been disseminated by NAS. There will be a second round. To see who received the grants and for additional information, please refer to: http://www.nas.edu/gulf/grants/disaster-recovery-2018/index.htm
- The Sea Grant Oil Spill Science Outreach Team has published several new publications, including topics such as underwater vehicles used to study oil spills; microbes and oil; and a DWH Where did the oil go fact sheet. These publications can be found at: https://gulfseagrant.org/.
- Clean Pacific 2018 will be held June 19-21, 2018 in Portland, OR. Information can be found at: http://2018.cleanpacific.org/
- Clean Gulf 2018 will be held in New Orleans, LA November 13-15, 2018. Information can be found at: http://2018.cleangulf.org/.

4. Presentation 1 – National Academies of Science, Engineering & Medicine (NASEM) Study: Oil in the Sea IV (Enclosure 2): Dr. Susan Roberts (NASEM Ocean Studies Board) provided an overview presentation of the Oil in the Sea IV study.
   - The Oil in the Seas Study was initiated by Ocean Studies Board as a result of community interest in data updates. Oil in the Sea III Study began in 1999 and it was published in 2003.
   - The graphics developed by NAS are available to government agencies free of charge, they just cannot be sold.
   - Post Deepwater Horizon Oil Spill research will be reviewed and incorporated into Oil in the Sea IV.
   - For the development of Oil in the Sea IV; the study will be broken into two phases to allow for a quicker start as there is only funding for the first phase at this time. The total estimate for completion of the report is $800k. The phases will be:
     - Phase 1 – development of inputs, to include the identification of sources and volumes. Target start date for Phase 1 is fall 2018, and it is estimated to take 9-12 months to complete.
     - Phase 2 – review and evaluation of fate and effects. The target start date will be spring 2019, and it is estimated to take 1 year to complete.
   - The inputs section from Phase I will be available digitally once completed, however, the printed editions will not be available until both Phase I and Phase II are completed.
   - NAS put out a broad call for recommendations to find a balance of scientific community members to provide input into the report development.
   - The process to solicit input has changed; at this time if an organization is not supporting the cost of the study, there is not a way to provide input on the topics. This intent is to limit feedback to those with direct involvement in the study.
   - API has expressed an interest in potentially contributing funds to the study. The Gulf of Mexico Research Initiative (GoMRI) is expected to contribute funds to the Oil in the Sea IV Study.
   - The Oil in the Sea IV Study may have some overlap with the NAS Use of Chemical Dispersants Study. The Dispersant Study identifies what happens with the use of dispersants, and what happens without using dispersants to the fate and effects. This will include new modeling work and subsea dispersant injection (SSDI), human health, toxicology (with and without dispersants) and the effects of dispersants.

- The decision has not been made yet on if alternative response technologies will be included in the Oil in the Sea IV study.

5. Presentation 2 – Enhance Oil Spill Detection Sensors in Low-light Environments: Mr. George Ax (MTEQ) provided an overview presentation on the sensors developed for this R&D initiative (Enclosure 3).
   - This was work in coordination with the US Army. It leveraged a legacy capability designed by the Army to fly on a Puma. The program is named MARINE SCOUT.
   - In this project, the sensors were adapted from looking for mines to look for oil in water.
   - The model of the thermodynamics was developed by another company.
   - It was asked where the data was obtained (i.e., pan, tank, etc.). Mr. Ax will confirm and provide a response to Ms. Trego.
     - Ms. Stone (BSEE) believes the data came from a test at Ohmsett.
   - The intent is to target large areas to identify oil, and this technology can produce mosaic images overlaid in satellite mapping.
   - Mr. Ax showcased the compact 1.8lb high-performance EO/IR payload developed for the Puma. He noted that the rotation stage adjusts for platform yaw and aligns linear stage along direction of flight. The linear stage performs Forward Motion Compensation (FMC) and provides precise resolution.
   - The payload is digital data, which is stored onboard, and provides for higher fidelity data.
   - Under the BSEE funded project, 4 payloads were modified to develop new payloads. Changes include:
     - Replace old sensor with a Near-infrared (NIR)/Short wave Infrared (SWIR) camera;
     - Widen the field of view (FOV) of both cameras; and
     - Update software/firmware for mission.
   - Mr. Levine (NOAA) asked if the test included testing how thin oil could be measured. The lowest measurement done was 2mm thickness; testing was not done on anything thinner.
   - It was asked how high the plane was flying. For the Ohmsett testing, the plane did not fly very high; however, flying higher (to the limits of the aircraft capabilities), would not impact the capability. Flying at higher altitudes could impact the results due to atmospheric humidity.
   - Dr. Conmy (EPA) asked if there is a sense for the amount of false positives that would be achieved in a turbid coastal environment. It was acknowledged that whitecaps/waves have the potential to confuse the sensors, but it was noted that if there is a broad spill, the test results can be averaged. It is believed that flying higher would be better for wave situations as at those altitudes, waves are not observed.
   - This project ended at the end of 2017; however, there are additional tests that we would like to run on the sensors, beyond the testing done at Ohmsett. Mr. Ax stated that he is optimistic that these three bands would be effective to show oil in a broad area. There is a lot more investigation that could be done, but optimistic that the sensors could identify oil spills.

6. Presentation 3 – Development of i-Petrogel – a Superabsorbent Polymer: Dr. Michael Chung (Penn State University) provided an overview presentation on this R&D project (Enclosure 4).

- The intent of i-Petrogel is to stabilize the weathering of oil in the first hours of an oil spill. It works by spraying an oil-superabsorbent polymer (Oil-SAP) on spilled oil, and the Oil-SAP effectively and selectively absorbs oil (not water), and can then be collected by a skimmer. The oil is still usable and there is no water contamination. The oil is almost more pure than when it was spilled into the water. This results in zero waste or pollution. The collected product can potentially be collected by a skimmer, and then sent to production and processed like oil.
- There are two types of polymers that could potentially be used to absorb oil.
- The foam density in the polymer significantly increases the absorption capacity.
- The i-Petrogel super-absorbent polymer has good flexibility, as it is made from the merging of two hydrocarbon polymers.
- The polymer absorbs oil at variable temperatures (25 degrees Celsius or 0 degrees Celsius).
- The polymer was highlighted in Perspective Paper in Macromolecules 2013 (pgs. 46, 667).
- CDR James (USCG) asked what would be the expected delivery system. Would it be aerial? Dr. Chung responded that the delivery system could be aerial or applied locally. It needs to be sprayed on top of the oil to soak up the oil and prevent weathering and emulsification.
- CDR James asked if there is an ideal height for the application of the polymer. Dr. Chung said that there is not, but it is recommended to spray immediately, within 2-3 hours.
- Mr. Levine asked if there is a minimum thickness of the oil for this product to work. During the tests, very small amounts of oils were not used, but it is believed that the polymer would work on any amount of oil.
- It was asked if the i-Petrogel was tested in wave conditions. Dr. Chung noted that the polymer was tested under wave conditions at Ohmsett.
- Mr. Zelenke (BOEM) asked what the durability of the resultant coagulant is, should it be expected that the resultant gel would that break up from wave action? Dr. Chung responded that under a wave, it might break apart, which is why it is recommended to use boom when applied to ensure the resultant gel stays together until the oil is absorbed.
- CAPT Alonso (USCG) asked if any tests were done beyond the 10 days in the test tube. Dr. Chung responded that no longer-term tests have been done. It would be recommended to do some additional longer tests and also some various weathering tests.
- Dr. Conmy asked if products other than ANS were tested in the lab. Dr. Chung responded that fresh ANS was used, which was 10% weathered.
- It was noted that if you spray the polymer into oceans, you are putting a hydrocarbon into the ocean.
- There were limited studies with ANS; the question is where to take it next. BSEE is struggling with the best use of this product.
- It was noted that an in-situ burn (ISB) was not tried with this polymer.
- Mr. Levine noted that it is a micro-plastic, which could result in problems at the Regional Response Team (RRT) level to get approval for use.
- There is the possibility of using it in a “sausage boom” to assist in collecting the polymer.

- CDR James said that if the potential exists for burning is an interest, please keep USCG in mind for those test at the burn pan in Mobile, AL.
- The project report is listed on the BSEE website (Project 1034).

7. Presentation 4 – Geo-Referencing Identification (GRID) Tags: Mr. Ben Schreib (AECOM) provided an overview of the sensor platform architecture developed for BSEE through R&D projects (Enclosure 5).
   - Mr. Schreib provided an overview of three projects:
     - Geo-referencing Identification (GRID) Tagging System;
     - Ice Floe Tracking System (IFTS); and
     - Wave Characterization Molecules (WCMs).
   - The GRID Interface is intended for use with the Environmental Response Management Application (ERMA).
   - IFTS is an underwater deployed tag that can communicate to handheld tag or unmanned aerial vehicle (UAV).
   - Mr. Levine asked if anyone can deploy. Yes, anyone can deploy. It was noted that it is meant to be autonomous after the batteries are installed and they automatically connected with the interface.
   - CAPT Hall (USCG) asked if the tags could be smaller. Mr. Schreib stated that the tags could be made smaller, but they were chosen as a commercial off the shelf box.
   - It was asked if the tags were disposable. The intent was to retrieve the tags and use them again, they are not intended to be disposable. BSEE did a cost analysis for an Oil Spill Removal Organization (OSRO) to outfit all of their equipment with tags, as the intent was for it to be cost effective.
   - Mr. Balsley asked if there are future plans for additional ice floe tests. The plan is to go out again this winter to test a large variety of distances, and power for the underwater tag.
   - CAPT Alonso asked if it was designed to be able to be deployed worldwide. Mr. Schreib stated that the Iridium satellite was chosen as it is the only one that has good coverage worldwide, including the Arctic.

8. Presentation 5 – Cold Regions Research and Engineering Laboratory (CRREL) Capabilities: Ms. Marina Reilly-Collette (USACE) provided an overview of the CRREL facility and capabilities (Enclosure 6).
   - USACE Engineer Research and Development Center (ERDC) is a reimbursable organization, including foreign entities. CRREL has a direct funding portfolio on military and warfighting, and USACE, and can do projects that are cost reimbursable.
   - CRREL is currently upgrading their facilities.
   - The Goephysical Research Facility (an outdoor basin with refrigerated roof) operates approximately 6 months out of the year. A single ice sheet is grown each year, and then several tests are run on the ice.
   - New refrigeration is anticipated for FY19; the install needs to be scheduled around already planned R&D.
   - The wind tunnel is a unique capability; CRREL is developing a White Paper to advertise this unique capability, which includes a capacity to do a large scale test on oil herders and dispersants under wind conditions.

9. ICCOPR Agency Publication Peer Review Discussion: Dr. Robin Conmy led the discussion regarding the review burden for publications, journals, and reports.
   - Dr. Conmy stated that this peer review is intended for scientific/technical papers, where it is often hard to get a good technical review without paying for the service.
   - She noted that the intent of the discussion is to see if see if ICCOPR could be used to facilitate the scientific/technical review, based upon agency agreements. There is potential benefit to utilize the federal family to address and reduce the review burden.
   - Sometimes it is hard to identify someone with expertise or background in oil spill science. This same approach can be used for submitting an abstract for a conference.
   - Within EPA, everything has to have two technical reviews.
   - Some agencies noted that having a report reviewed (technical review) can cost up to $10K.
   - There is a mechanism for all federal workers to provide scientific/technical reviews, as salaries are already paid.
   - The USCG RDC has a civilian workforce (academics), which can potentially be pulled upon to provide reviews. Using this might involve a cost, but it would be cheaper than contracting for the review. A rough estimate is up to $2.5K.
   - BSEE has paid $10-50K for a technical review of a single project.
   - ERDC has done some technical report reviews, and it would not cost more than $1-2K for USACE review assistance.
   - Some scientific/technical reviews are built into contracts for BOEM. However, this could result in the review being biased as it is done by the contractor as part of the project.
   - BOEM also has the capability of pulling together "Review Boards" to review a report, or project, and then provide feedback. This concept could be a higher cost estimate than those already mentioned.
   - It was asked if a formal memorandum of agreement (MOA) is needed, and members discussed that a formal MOA may not be needed. This could be an informal agreement among ICCOPR members.
   - BSEE only does external peer reviews for reports that could have an economic burden on industry.
   - Ms. McKinney noted that this could be a good idea, but how to ensure that it is done without any bias. Dr. Conmy responded that the concept is similar to an academic peer review, acknowledging that there are pluses and minuses. She further noted that an academic will never pay for a review, as that is founded on the idea that the community will critique to advance the subject matter.
   - It was noted that ICCOPR members are the Federal oil spill experts; however, some of the staff doing reviews may not be the specific members of ICCOPR, but people on their teams.

Action Items:

- Dr. Conmy will review and find the language on the EPA website that describes how EPA can use other Federal employees for a peer review and will send to Ms. Trego to disseminate to ICCOPR.

- Ms. Trego asked that any members of ICCOPR that want to participate in a small workgroup to develop the initial framework for how ICCOPR can/would go about this initiative to email her.

10. Member Agency Research & Development (R&D) Updates

USCG RDC (Enclosure 7)

- A project manager for several projects has left the RDC. USCG is hoping to fill two positions within the Environment and Waterways branch soon.
- A review of projects was provided to include:
  - Detection and Mitigation of Oil within the Water Column (Project 4702)
  - Improved In-Situ Burning (ISB) for Offshore Use (Project 4704)
  - Oil Sands Products Response (Project 4705)
    - A white paper about skimmer tests with diluted bitumen at Ohmsett will not be published in the Defense Technical Information Center (DTIC) database, but it is available for dissemination. Please contact Alex Balsley.
    - Outcomes of field tests with inland and offshore underwater barriers (performed at Kalamazoo River and Lake Huron) and recommendations will be developed in a report to be released at a later date (date TBD).
    - Working on a contract to develop another inland underwater barrier prototype, hope to have this ready for testing at the Kalamazoo River by April 2019. This is currently under development.
  - Oil Spill Response Emerging Technology Assessment (Project 4708)
    - Report is FOUO; contact MER to review this report.
  - Nearshore and Inland Evaluation of the Effective Recovery System Potential (ERSP Calculator (Project 4710)
  - Market Research of Spilled Oil Recovery System (SORS) and VOSS Technologies (Project 2019-3)
- Dr. Conmy asked what sensors were being deployed from the airplanes. The sensors were not really looked at. Autonomous underwater vehicles (AUVs) were looked at, which could be deployed from the plane, including a review of the 2014 or 2015 report that listed underwater sensors that could be compatible with Unmanned Underwater Vehicles (UUVs) or AUVs.
- Ms. Karin Messenger noted that the Arctic Domain Awareness Center (ADAC) has been generating oil spill related research proposals. From the 22 proposals received, will be looking for assistance to pick 2 to 4 projects to fund.

USFWS

- Nothing to report.

BSEE (Enclosure 8)

- Ms. McKinney briefed on Ohmsett activities and the delayed award of the new contract, as BSEE has been responding to the award protests.
- Ms. McKinney briefed on the following Ohmsett projects:
  - BSEE Project 1083 Recovery Efficiency Sensor Test
  - BSEE Project 1098 Water Mapping Test
- Recently completed projects:

- Project 1081: Advancing Icehorse Proof-of-Concept (Report available in July)
- Project OSRR #1088: Assessment of Demulsification and Separation Technologies (Final Report available in July/August)
- Project OSRR #1095: Research and Develop Interface Insulation Systems and Vigorous Burn Inducer and Project OSRR #1096: Perform Emissions and Residue Testing for In-Situ Burn Tests
  - There will be another test with the same players. It will be at CRREL in September 2018, and will include a burn for 5 days in a row.
  - It was asked with the boil over, is it aspirating. When the water boils, the oil vaporizes. This is an area that BSEE will continue to work on this. Emulsions are similar and a 20% emulsion is burning more efficiently than just oil. It could increase the window for ISB.
  - Dr. Conmy and Ms. Stone to coordinate offline to see if residue from the burns can be sent to EPA to be sampled.

BOEM (Enclosure 9)

- Mr. Johnson provided an overview of the BOEM missions and connection to ICCOPR.
- BOEM is working on the Environmental Studies Program (ESP) Studies Development Plan for 2019 – 2021 (available on BOEM website).
  - Request study ideas each year aligned with available funding. This year the layout and content has been changed. This is a wish-list plan, and it will be reduced to a Studies List which will include 1/2 to 2/3 of what is in this plan.
  - Some items in this plan were also in the 2018 – 2020 plan.
- BOEM has been working on the scoping and development of the National Proposed Program (NPP) of lease sales for the next 5 years.
  - This focus of the NPP has reduced funding levels for ESP, and the hope is to be back to a normal budget for next year.
  - This includes studies associated with decommissioning.
  - There is a lot of oil potential in the Arctic but also there is a high cost, and additional studies may be required.
  - There are new areas in the East Coast of the US available for possible leasing for oil development that may also require additional studies..

NOAA

- Mr. Levine noted that Lisa DiPinto is at Ohmsett looking at three dimensional hydro-carbon mapping and to demonstrate the Remote Environmental Monitoring Units (REMUS) field.
- SeaGrant is coming out with a few new publications.
- NOAA did a training with the USCG Strike Team to practice collecting data and downloading it, managing it, and displaying it. BSEE is currently doing a data review of what was used during the training.
- USCG is testing the EPA VIPER system for data transfer; transfer of field data to the command post.
- University of New Hampshire (UNH) Coastal Response Research Center (CRRC) is working on the State-of-Science for Dispersant Use in Arctic Waters. UNH has

requested public comment on the Public Health and Food Safety findings. Website is (http://crrc.unh.edu/dispersant_science).

EPA (Enclosure 10)

- Dr. Conmy stated that EPA is planning research through 2022.
- Dr. Conmy provided an overview of ongoing research:
  - National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Product Effectiveness (both solidifiers and surface washing agents (SWA))
  - Plume Fluorescence and Scattering Sensors
  - Oil & Product Toxicity
  - Oil Thickness Estimates using Lidar
  - In situ burn Air Emissions and Residues
- Dr. Conmy provided an overview of new projects:
  - REMUS AUV for Oil Detection
  - NCP Product Effectiveness for Photo-ox. Oils
  - Oil Biodegredation in Presence of Herders and SWAs
  - Toxicity of Oil with Herders and SWA to Aquatic Species
  - Oil Toxicity of Dilbit Products in Sediments
  - Biodegredation of Oil Encapsulated in Ice

DOE

- Ms. Folio provided an overview of the enhanced oil recovery project.
  - There will be testing in Alaska on the North Slope.
  - Water flooding is when you put water in the bottom of the oil reservoir and then put polymers into the reservoir.
  - This work was awarded on May 30th.
- It was asked what the benefit of polymer flooding would be. Ms. Folio stated that it would be another well that typically is used to inject water, but you would do a sweep. Depending on the type of rock (water or oil wet), the water does not do an effective sweep, but the polymer could help with a more effective sweep.

Action Items:

- Ms. Folio will forward the contract award announcement to Ms. Trego.

USACE

- No additional report.

11. New Business
    - I-Petrogel Polymer
      - Ms. McKinney asked for a discussion on the pros/cons of the polymer. From the BSEE perspective:
        - PRO
          - High absorption capability
          - No water absorption
          - Inexpensive

        - Tunable (depending on cross-linking of product – can be more solid, jelly-like, etc. in the design)
        - Possibly prevent weathering
        - Possibly burned
        - Can be recovered with skimmer
        - Can be refined (re-used)
      - CON
        - Lose product
        - Hydrocarbon based product – not going to recapture 100% of that product.
        - Possible International Convention for the Prevention of Pollution from Ships (MARPOL) violation with the release of plastic
        - Permitting issue for EPA
        - ISB applications have not been tested
        - Toxicity of product not collected
        - Absorption kinetics – not fast enough to absorb
        - Releasing in open water
    - Other possible uses include nearshore application, such as to create it in a film like a pad that is gathered, and then refined). No tests have been done in the nearshore environment.
    - It was asked if the polymer has been tested in conjunction with herders; the product has not.
    - It was noted that it is an interesting product that could work in different scenarios.
    - There is a similar product on the product schedule (CI Agent). The problem was using it loose, could not get permission to use the product.
    - For real-world use, there will be required monitoring.
    - Dr. Conmy asked about the biodegradation of the product as it moves, as it was noted that it doesn't necessarily stay together as a unit.
    - It was asked if it works on emulsified or partially-emulsified oil.
    - It was asked if the product is better as a free agent, or better in a sock or some type of containment.
    - It was asked if there is a cost to dispose of the product.
    - It was asked if the material could be embedded in nets to stop more oil going upriver (example: Kalamazoo nets).
    - Ms. McKinney stated that there is currently about 200lbs of the product at Ohmsett which could be used for additional tests, as have been identified and suggested.
    - CRREL Ice Enginering Facility is not being used due to the refrigeration update, Ms. Reilly-Collette offered the use of the CRREL facility to do a long-term weathering test. The product could be left outside for 6-9 months to see what it does.

- Federal Oil Spill Team for Emergency Response Remote Sensing (FOSTERRS)
    - Dr. Conmy noted that FOSTERRs is made up of Federal responders, driven by NOAA, NASA, USGS, etc. FOSTERRS is hosting a workshop for Federal workers to learn more about remote sensing assets that are available.
    - NASA has an abstract submitted to request money for small targeted workgroup meetings. NASA is proposing meeting in 2019, and using the facility at Goddard or NASA Headquarters.

- On FOSTERRS, there are five NASA federal employees engaged in oil spill remote sensing products.
- Our ICCOPR NASA member is not a member of FOSTERRS, but this could provide a good opportunity for overlap from ICCOPR and FOSTERRS, and potentially encourage greater participation from NASA in ICCOPR. It was noted that there could be more than one representative from each agency that is a member of ICCOPR.
- It was recommended to have NASA host a future ICCOPR meeting to encourage NASA participation in ICCOPR.
- It was noted that there are some good products used from NASA for emergency response.

Action Items:

- Dr. Conmy will follow-up with FOSTERRS regarding this workshop.
- Ms. Trego will follow-up with NASA regarding potentially hosting a future ICCOPR meeting in conjunction with FOSTERRS.

Closing Comments:

- Mr. Bill Vocke stated that on behalf of BSEE, thanks for the continued participation in ICCOPR. It is nice to see the familiar faces that are still ICCOPR members, and to meet the new members. This shows how important ICCOPR is and that initiatives continues to move along and progress. There are so many priority research areas that need to be addressed.
- Mr. Vocke thanked Ms. McKinney and Ms. Stone for organizing the meeting.
- CAPT Alonso thanked BSEE for hosting. He noted that he is glad to be in attendance and a member of ICCOPR which allows him to step away from the policy world and back into the scientific world. CAPT Alonso stated that knowing that this group is identifying ways to help staff in the field and States shows how important this work is. He noted the great presentations today, and stressed that the key is to keep talking, sharing information, and jointly conducting research. Keep thinking ahead and identifying things that we can address in the future. Thanks for coming!
- The next meeting is scheduled for September 12, 2018.

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Enclosures: (1) Meeting Agenda
(2) NASEM Study Brief
(3) MTEQ Brief
(4) Penn State University Brief
(5) AECOM Brief
(6) CRREL Brief
(7) USCG Update Brief
(8) BSEE Update Brief
(9) BOEM Update Brief
(10) EPA Update Brief