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Janice Schneider
Assistant Secretary for Land and Minerals Management
Department of Interior
1849 C Street NW
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Submitted electronically via <http://www.regulations.gov>: **BSEE-2013-0011**

Re: Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf,” RIN: 1082–AA00; Federal Rulemaking BSEE-2013-0011.

Dear Assistant Secretary Schneider,

The Pew Charitable Trusts (Pew) appreciates the opportunity to submit comments to the Department of Interior (DOI), regarding the proposed Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf, RIN: 1082–AA00; Federal Rulemaking BSEE-2013-0011.

Pew applauds DOI’s efforts to improve oil and gas regulations for Arctic exploration drilling on Alaska’s Outer Continental Shelf (OCS). The proposed regulations include critical oil spill prevention, source control, and response requirements. Overall, the proposal offers substantial improvements to the existing regulatory framework for the Arctic OCS. DOI’s proposal modernizes and aligns the regulations with best practices and technology and establishes consistent, clear, equitable requirements for all operators.

These proposed regulations are a very important step for the Arctic. It is imperative these rules be completed before further Arctic OCS exploration drilling is approved for years 2016 and beyond. Pew urges DOI to complete this rulemaking before any future drilling is approved. Additionally, Pew recommends DOI use these proposed improvements to guide its decision on applications for 2015.

Pew understands there are several other rulemaking initiatives being considered or that are underway by DOI to further improve OCS rules, including revisions to:

- Nationwide rules for well control issued April 2015;
- Nationwide rules for Air Pollution Prevention and Control, planned for 2015;
- Nationwide rules for Oil Spill Response Plans (OSRPs) planned for 2016; and,
- Development and Production Plan (DPP) requirements for the Arctic OCS, planned for the future.

As explained in Pew’s 2013 report titled “Arctic Standards: Recommendations on Oil Spill Prevention, Response, and Safety in the U.S. Arctic Ocean,” (hereinafter Pew’s 2013 Arctic Standards Report), Pew

absolutely agrees regulatory improvement is needed for blowout preventers (BOPs), OSRPs, Air Pollution Prevention and Control and the DPP section of existing regulations. Pew made numerous and specific recommendations in our 2013 Arctic Standards Report on these topics. While DOI proposed a few improvements for BOPs and OSRPs in this proposed rulemaking, more improvements are needed.

While we understand the logic in addressing improvements that apply nationwide in a broad rulemaking effort, we urge DOI to address all Arctic-specific issues now during this Arctic OCS focused rulemaking effort. To that end, we have identified Arctic-specific BOP and OSRP improvements that should be included now. If these improvements cannot be addressed now, we strongly urge they be addressed in the upcoming rulemaking processes.

Additionally, improved Development and Production Plans (DPP) rules are needed to guide proposed Arctic OCS development to ensure the best practices and technology are required for any new Arctic OCS production facilities that may result from Arctic exploration drilling. Pew understands the reason for separating exploration and development/production rulemaking into two separate efforts; however, after the exploration rule is complete, Pew urges DOI to quickly move forward with an improved DPP rulemaking proposal.

A summary of Pew's key comments and recommendations is provided below, followed by detailed section-by-section analysis of the proposed regulations in redline format, with specific recommendations for improvement.

- Attachment A is a copy of Pew's 2013 Arctic Standards Report providing a substantially more detailed technical justification to support our comments herein.
- Attachment B provides Pew's proposed redlined changes to 30 CFR § 250.
- Attachment C provides Pew's proposed redlined changes to 30 CFR § 254.
- Attachment D provides Pew's proposed redlined changes to 30 CFR § 550.
- Attachment E provides Pew's comments on the Regulatory Impact Analysis (RIA).

1. Relief Rig Requirements

Pew applauds DOI's proposal to codify a Same-Season Relief Well (SSRW) requirement. DOI's proposed regulations require: the relief rig to be designed, constructed, and proven to work in Arctic OCS conditions; the SSRW to be drilled by a separate, second rig that is different than the primary drilling rig within 45 days; and, the relief rig be capable of completing the relief well, and killing and abandoning the original well and relief well prior to the expected seasonal ice encroachment. The SSRW requirement is a cornerstone of these regulations. We strongly support DOI's proposed rules and believe that they can be strengthened. Any weakening of the same season relief well requirement, however, would leave the Arctic without an effective system to guarantee well control will be achieved in a timely manner to protect the Arctic ecosystem.

The relief rig requirement should apply to all wells drilled in the Arctic OCS, not just wells drilled from Mobile Offshore Drilling Units (MODUs), because a relief well is the most reliable method of controlling a well blowout when other intervention methods fail. If a blowout cannot be controlled using other intervention methods, (e.g., well capping and containment or when surface kill operations may exacerbate the blowout), a relief well must be drilled. The Arctic must have a guaranteed method of controlling a well blowout in its tool kit.

There are conditions when an Arctic relief rig is needed, including: to ensure a blowout can be controlled within the seasonal drilling window; and to provide a guaranteed technical solution to control a well blowout if debris is blocking access for well capping equipment; hazardous conditions at the surface make top kills unsafe; other intervention techniques may exacerbate the blowout; capping the well may cause an underground or broached blowout; an underground blowout occurs; or when same well surface control techniques are not an option, among other circumstances.

Since the 1970s, at least 17 incidents occurred worldwide where a relief well was the only way to permanently stop the blowout. Operators used relief wells in these situations for a number of reasons—either the surface methods, like capping, didn't work or it was too hazardous to operate near the blowout. This happened less than two years ago at the Walter gas well in 154 feet of water, 55 miles off the coast of Louisiana.

According to industry estimates, the time required to drill a relief well in the Arctic OCS is typically 30 days or less. Current OSRP regulations (30 CFR § 254) require exploration operators to plan for a Worst-Case Discharge (WCD) lasting up to 30 days. While DOI proposed extending the 45 day planning standard for completion of a SSRW, DOI did not propose a corresponding increase in the 30 day WCD planning standard. Pew recommends the SSRW planning standard be consistent with the WCD planning standard because the WCD volume is the amount of oil spilled before a well blowout is controlled by a relief well. Pew recommends the WCD planning standard and the relief well planning standard both be set at 37 days. The 37 day standard is based on allocating 30 days to drill the relief well, and 7 days to move the relief rig to the blowout location. The relief rig should be staged in the Arctic OCS area where drilling is underway for immediate emergency use.

DOI included an option for an operator to submit an application to the BSEE Regional Supervisor to request an alternative compliance option to a SSRW during the Application for Permit to Drill (APD) process. While Pew supports technical ingenuity, and if better, safer, more efficient well blowout control methods are developed in the future, we agree DOI should carefully consider it. However, replacing the SSRW requirement will be a major decision. This important decision should be made through a formal rulemaking amendment and be subject to rigorous joint-agency and public technical scrutiny, not as a minor amendment to an APD with no public review process. Pew also recommends a detailed SSRW plan be included in the Exploration Plan (EP) application, subject to joint-agency and public review and comment.

DOI included a requirement for any Application for Permit to Modify (APM) an APD to include a re-evaluation of the operator's source control and containment equipment capability for an altered well design. Pew agrees this is important. It is equally important for an operator to re-examine its SSRW selection to ensure the rig is capable of providing emergency services. Therefore, Pew recommends adding this requirement to the relief rig rule.

2. Source Control and Containment Equipment (SCCE)

Pew strongly supports DOI's proposal to codify the requirement to have Source Control and Containment Equipment (SCCE) built to work in Arctic OCS conditions. DOI's proposed regulations require any Mobile Offshore Drilling Unit (MODU) drilling an exploration well to have a capping stack, cap and flow system, and containment dome, designed, constructed, and proven to work in Arctic OCS conditions. The SCCE must be tested periodically. DOI established testing, inspection, maintenance, training, and deployment recordkeeping and reporting requirements that vary from 3 to 10 years, with reporting if required by BSEE.

As evidenced in the *Deepwater Horizon* well blowout, SCCE equipment is critical for rapid well control and pollution reduction. Therefore, the SCCE requirement is an essential component of these proposed regulations. Any weakening of the SCCE requirement would leave the Arctic without an effective system to protect the Arctic ecosystem.

Pew strongly supports DOI's proposed requirement for the capping stack to be onsite within 24 hours. DOI requested input on whether the cap and flow and containment dome equipment planning standard should be 3 or 7 days. Pew recommends a 3 day planning standard. The shorter timeframe provides more immediate well blowout abatement, and a reduction in the volume of oil that would be released.

DOI proposes the capping stack, cap and flow system, and containment dome only be required for MODUs conducting exploration operations in the Arctic OCS. Pew recommends this requirement apply to all Arctic OCS exploration rig types, including past, present, and future rig types. Well capping systems are also critical for wells drilled from gravel and ice islands.

DOI proposes to codify its existing authority to require periodic SCCE testing. DOI requires a monthly stump test of dry-stored capping stacks, and a stump test of any pre-positioned capping stack prior to installation on each well. Pew also recommends pre-positioned capping stacks be tested prior to the drilling season.

DOI's proposal is unclear in regards to how often the cap and flow and the subsea containment system equipment will actually be tested. Pew recommends a minimum testing requirement be set, consistent with the testing frequency DOI has required in the past. Specifically, Pew recommends the cap and flow and the subsea containment system equipment be tested prior to the drilling season to ensure it is fit for Arctic OCS service, and be tested in Arctic OCS conditions at the Arctic exploration drill site during the drilling season.

DOI proposed testing, inspection, maintenance, training, and deployment recordkeeping and reporting requirements that vary from 3 to 10 years, with reporting if required by BSEE. Pew recommends a consistent 10 year recordkeeping requirement, with electronic reports submitted to BSEE, to ensure BSEE staff remains apprised of the status and condition of this critical safety and oil spill prevention equipment.

We recommend a detailed SCCE plan be included in the EP application, subject to joint-agency and public review and comment, and the SCCE contract(s) be required in the APD Application.

In the event of a blowout requiring deployment of SCCE, Pew recommends all drilling operations reliant on that SCCE must cease until the blowout is controlled and the SCCE is available to support continued drilling operations in the Arctic OCS.

3. Well Control Plan and Well Control Experts

DOI's proposal did not include a specific requirement to improve the written well control plan or evidence of a contract with a well control expert. Pew recommends the APD include a requirement for a written well control plan and evidence of a contract with a well control expert. While written well control plans and contracts with well control experts are industry standard, like other important practices, this minimum standard should be codified in regulation so short-cuts are not taken.

This written plan will provide DOI with assurance all of its required well control plan elements are integrated and well-coordinated. More specifically, Pew recommends the Arctic emergency well control plan include the primary rig, SCCE, secondary relief well rig, and additional well barriers. It should also be site-specific and appropriate for Arctic OCS conditions.

The relief rig section should include:

- The name and technical specifications of the Arctic relief well drilling unit that will be used, and any support equipment, including mobilization and deployment details;
- A timeline for bringing the relief well drilling unit to the blowout location within 7 days and drilling the relief well and killing the out-of-control well in 30 days or less;
- A detailed list of steps for drilling the relief well, including a list of steps that must be completed when the blowout conditions are known;
- Confirmation that trained and qualified personnel, equipment, drilling unit, and consumables will be on-site to carry out the relief well plan, including the name of the Arctic relief well engineering experts that will be on contract and available to implement the plan;
- Two alternate relief well locations for each well. Both relief well locations should be fully identified, permitted, and surveyed for shallow gas prior to operations commencing on the primary well site. Relief well sites should be evaluated to ensure the current profiles, benthic character, seabed topography, and rig access plans are fully suitable for relief well operations;
- Preplanned relief well design trajectories based on various well blowout scenarios; and,
- A hazard assessment to identify safe positions for the relief well rig close to the out-of-control well.

The SCCE section should include:

- The name and technical specifications of the SCCE that will be used, and any support equipment, including mobilization and deployment details;
- A timeline for bringing the well capping equipment to the well blowout within 24 hours, the cap and flow and containment dome to the site within 3 days, and killing the out-of-control well in 30 days or less;
- A detailed list of steps for capping and containing the well, including a list of steps that must be completed when the blowout conditions are known;
- Confirmation that trained and qualified personnel, equipment, drilling unit, and consumables will be on-site to carry out the well capping and containment plan, including the name of the Arctic well control engineering experts that will be on contract and available to implement the plan; and,
- A hazard assessment for positioning Arctic well capping and containment system close to the out-of-control well.

Pew recommends the APD include evidence of a signed contract with an Arctic well control expert capable of providing expert assistance during a well blowout for the entire drilling period. The Arctic well control expert should have personnel trained, qualified, and experienced to work in Arctic conditions. The expert should either have its own equipment suitable for Arctic operations, or have immediate access and qualifications to guide successful deployment of equipment owned by the operator. The expert must review the well design and be familiar with the well and emergency response plan prior drilling start, and be capable of being at the well site within 12 hours.

4. End of Seasonal Operations Dates

Pew support's DOI's proposal to codify its current practice of requiring end of season operating dates in the Exploration Plan (EP). The rule requires "anticipated end of seasonal operations dates" to be included in the EP application, including a date for when drilling through hydrocarbon zones will end, and a date for when all on-site operations will be complete. The term "anticipated end of season date" does not

provide a firm planning date. Pew recommends the term “anticipated” be deleted, and that the operator be required to provide firm end of season dates. The rule should require conservative dates based on at least 10 years of historical weather data. Dates proposed by the operator in its EP application should undergo careful scientific review by DOI in consultation with the National Oceanic and Atmospheric Administration (NOAA) and other relevant agencies, and a firm end date should be set in DOI’s decision. The end of season date should directly correlate to the quality, strength, durability and suitability of equipment proposed, including spill response equipment, described in Parts 250, 254, and 550 of these regulations. The end date should not be renegotiated during the drilling season. The rule should provide the BSEE Regional Director the authority to require operations to terminate before these dates, if actual conditions during the drilling season require a shorter period.

5. Exploration Plan (EP) Improvements

Pew commends DOI’s proposal to enhance the Arctic OCS EP application requirements to include improved emergency planning, ice and weather data and management, a description of SSCE and relief rig capabilities, information on resource sharing, and clarity on the end of seasonal operations dates.

It is critical for the Exploration Plan application to provide sufficient detailed technical information for the agencies and public to understand the proposed exploration drilling project, and to make an informed decision. The Exploration Plan sets the standard that must be executed in the APD. Therefore, Pew recommends some data proposed for the APD be accelerated to the EP application, including more information on suitability for operation in Arctic OCS conditions, and more detail on emergency and critical operation curtailment plans. Pew also recommends the Integrated Operations Plan (IOP) be included in the EP application as an appendix and be subject to public review and comment.

6. Drilling Rigs, Vessels, and SCCE Fitness for Arctic OCS Service

Pew applauds DOI’s proposal to require operators to submit information to demonstrate fitness to operate in Arctic OCS Conditions, information on how vessels and equipment will be designed, built, and or modified for Arctic OCS Conditions, and including human risk factors (e.g., attire, management of shifts, training, etc.). Additionally, Pew recommends that drilling rigs that have not been used in frontier areas, such as the Arctic OCS, be subject to a mandatory (rather than optional) third-party review of the unit’s design and that review be submitted as part of the EP application.

7. Ice & Adverse Weather Monitoring

Pew supports DOI proposed requirement for operators to have the capability to predict, track, report, and respond to ice conditions and adverse weather events. This requirement will be included in IOP, EP, and APDs. Operators will also be required to notify DOI when sea ice movement or conditions have potential to affect operations or trigger ice management activities.

8. Applicability to All Arctic OCS Exploration Past, Present, and Future

DOI’s proposal narrowly addresses MODUs operating during the open-water season in the Arctic OCS. Yet, the proposed rule does not limit exploration drilling to MODUs during the open-water season, and does not define a MODU. As explained on pages 64-65 of Pew’s 2013 Arctic Standards Report, 12 of the 35 wells drilled in the Arctic OCS to date have been drilled from gravel or ice islands (approximately one-third of the wells).

DOI appears to presume that no operator will offer or submit an application including equipment that could operate in Arctic OCS conditions beyond the open-water season or would propose exploration

drilling outside the open-water period. If that is the case, then the regulations need to be very clear that exploration drilling in the Arctic OCS is limited to MODUs operating only during the open-water season. However, Pew is concerned about this approach because Arctic OCS operators have proposed, and DOI has approved, wells drilled from ice and gravel islands and Arctic OCS exploration drilling rigs that do not fit a MODU definition to drill exploration wells to OCS leases for periods outside the open-water season. Pew anticipates proposals may be submitted in the future for exploration drilling from ice or gravel islands in the shallow waters of the Beaufort Sea. It is unclear whether this type of exploration drilling would be allowed and, if allowed, whether it would be covered by the codified improvements in these new rules. Pew recommends broadening the rule applicability to cover all possible future exploration in the Arctic OCS; otherwise, DOI should make it clear that Arctic OCS exploration is limited to MODU's operating during the open-water season.

Pew is also concerned that the proposed definition of "Arctic OCS" is constrained to the Chukchi and Beaufort Sea area described in the 2012-2017 Five Year Plan. Arctic OCS improvements codified in this rule should apply to the entire Arctic OCS, at or above the Arctic Circle (66° 32' North), within the United States' jurisdiction.

9. Public Review of Exploration Plans (EP)

We recommend that DOI conduct timely and meaningful consultation with Alaska Native tribes before approving an EP.

10. Public Review of Oil Spill Response Plans (OSRP).

Pew believes a thorough joint agency and public review and comment of the OSRP, including timely and meaningful consultation between the agency and Alaska Native tribes, is warranted to ensure that best practices and technology are planned. There is a heightened, broad public interest in oil spill response by academics, non-governmental organizations, local government, tribes, and other federal agencies working in the Arctic, particularly after the *Deepwater Horizon* spill and the mishaps of Shell's 2012 drilling season.

Oil spill response plans are complex, extensive documents that can benefit from public and joint agency review and are a critical part of ensuring safe operations. The State of Alaska provides a public review and comment process for oil exploration and production in state waters. Pew believes the same opportunity for review and comment should be provided for drilling in federal waters.

In addition, the National Commission on the BP Deepwater Horizon recommended joint agency and public review of oil spill response plans and that these plans should be made available to the public once they are approved.

DOI did not propose improvements in the OSRP public review procedures. Pew recommends improvements to the Part 254 and 550 rules. The OSRP rules at Part 254 should be amended to require public review and comment of all new OSRPs and any significant amendments. Additionally, when an OSRP is used to support an Exploration Plan (and is submitted as part of an Exploration Plan application), the OSRP should be subject to public review and comment, regardless of whether BSEE has previously approved the plan.

30 CFR § 550.219 currently requires the OSRP to be attached as part of the EP application. The purpose of submitting the OSRP with the EP application is to ensure the OSRP is suitable for scope of the proposed Exploration Plan. The operator must demonstrate the OSRP is suitable, or be required to improve the OSRP to meet the EP application needs.

Historically, there has been some confusion about whether a BSEE approved OSRP must be subject to the public review procedures of an EP application. Pew recommends this be clarified. Pew's proposed revision is intended to clarify the OSRP is subject to the EP public review procedures, regardless of whether the OSRP was previously approved, or is currently approved, by BSEE. BOEM's EP decision should determine if the OSRP is suitable for the proposed Exploration Plan; if it is not suitable, BOEM's decision should include a list of required improvements that must be made prior to start of drilling.

11. Arctic Oil Spill Response Plan (OSRP) Content

Pew supports DOI's proposed Arctic OSRP improvements proposed for 30 CFR § 254, most notably that an Arctic OSRP must be designed with equipment, training, and personnel suitable for the Arctic OCS. DOI also proposed: requiring a description of how SCCE operations will integrate with oil spill response exercises and actual operations; requiring a description of ice intervention practices; addressing human factors (health, safety, protective gear needed for Arctic response); a list and description of logistics resupply chains; a description of the real-time location tracking for all response resources while operating, transiting, or staging/maintaining such resources during a spill response; and, a requirement to notify BSEE prior to start of drilling.

However, Pew finds the proposed revisions do not go far enough to ensure there is a robust Arctic-specific oil spill response plan. One concern is that BSEE proposed to apply these improved OSRP standards only to wells drilled from MODUs in the open-water season. These improvements would not apply to wells drilled from gravel or ice islands.

Pew's 2013 Arctic Standards Report made a number of recommendations that are not included in the proposed regulations. Most notably, Pew recommended improvements in both Arctic-grade mechanical response equipment and the amount of in-situ burning equipment and trained personnel. DOI's regulations currently require an in situ burning plan at 30 CFR § 254.28 but do not require specific minimum amounts of equipment or trained personnel. Since experts agree in situ burning will be a critical response tool for the Arctic, it is imperative minimum standards for in situ burning equipment and trained personnel are set.

We are aware, and strongly support, that DOI is working on a separate national OSRP regulation proposal planned for release in 2016, however, Pew requests all Arctic-specific oil spill response improvements be made preferably during this current proposal. Otherwise, DOI should explain what improvements are planned for the national regulatory revision, and why it is advantageous to defer the Arctic-specific improvements until then.

Pew recommends the following specific improvements to Part 254:

- A 30 day public review and comment period for all Arctic OCS OSRPs.
- All existing OSRPs approved prior to codification of the Part 254 regulations must be updated to meet the new Part 254 rules within 90 days of the effective rule.
- Remove the current exemption allowed under 30 CFR § 254.2 (b) allowing OCS operation without an approved OSRP.
- Provide a detailed explanation of oil spill response curtailment thresholds based on a thorough statistical assessment of ice, temperature, visibility, wind, wave height, safety limitations and oil spill response gaps that exist despite the use of best available and safest technology (BAST). Curtailment thresholds must be based on site-specific, seasonal factors that will limit response or pose safety

hazards, requiring oil spill response operations to cease. This information must be used to establish the end of seasonal operational dates at § 550.220(c)(6).

- All response resources required to respond to the WCD should be located in the Arctic prior to the start of operations, unless there is a solid logistics plan for cascading in additional supplies after the first 30 days.
- Evidence that the operator or any Oil Spill Removal Organizations (OSROs) relied on to execute the OSRP have sufficient equipment and personnel located in the Arctic region to respond to the worst case discharge scenario, for at least 30 days prior to the start of operations and immediately available for response. Any resources that cannot be mobilized to the Arctic by water, road, or air within 30 days must be located in the Arctic region at the start of operations. Resources must include:
 - A sufficient amount of Arctic-grade mechanical response equipment sufficient to recover the entire spilled volume. Arctic-grade equipment must include, but not be limited to: Arctic-grade skimmers, ice-boom, viscous oil pumps, winterization enclosures and heating systems to protect equipment and prevent freezing, systems to thaw frozen equipment, Polar Class vessels (icebreakers, storage and recovery vessels), shallow draft vessels capable of operating in ice-infested water and able to provide nearshore response access, landing craft capable of accessing remote shores where docks are not present, and cold-weather personal protective equipment.
 - Personnel trained and qualified in Arctic spill response tactics capable of removing oil in a range of ice conditions and the safe and effective use of mechanical response tools and in situ burning in Arctic OCS conditions.
 - Personnel with experience navigating vessels in ice and ice fog, and operating aircraft in subzero temperatures and through ice fog, and landing on ice.
 - A sufficient amount of on-site recovered oil storage capacity, including both primary and secondary storage capacity, sufficient to recover the amount of spilled oil without impeding spill response operations. Storage volumes must account for emulsification, free water collection, and remote logistical access and weather delays. Storage systems must be capable of heating and separating oil-water emulsions and decanting water to maximize oil recovery and storage.
 - A sufficient amount of pump capacity and capability to transfer recovered viscous and emulsified oil and water mixtures.
 - Sufficient mechanical equipment and personnel to conduct response operations for at least 90 days, pre-staged in depots in each geographic area that your trajectory analysis shows potential for oil impacts resulting from the worst case discharge, until additional equipment can be brought in from a nearby in-region Arctic response depot by land, water, or air. Equipment must be stored at optimal locations for immediate deployment.
 - Sufficient in-region Arctic in situ burning equipment capability to conduct sustained burning operations for at least a 30-day period, and burn the entire spilled volume. Arctic in situ burning equipment must include, but not be limited to, ice-booms capable of thickening oil to the required 2-5 mm thickness to sustain a burn; aircraft and helitorch systems designed to operate in subzero temperatures; vessel-based ignition systems designed to operate in subzero temperatures; landing craft capable of accessing remote shores where docks are not present; equipment to recover burn residue; and cold weather personal protective equipment.
- Evidence that the operator owns, has under contract, or has available under a mutual aid agreement, a continuous supply of in situ burning equipment and trained and qualified personnel to supplement the in-region in situ burning equipment and personnel for the entire response operation.

- Evidence that each mechanical response and in situ burning tactic and strategy relied upon in the OSRP has been field-tested by the operator, or its OSRO, in Arctic OCS conditions where operations are planned, and in areas where a spill from those operations could reach, and have been verified as a viable oil spill removal strategy prior to inclusion in your OSRP.
- Evidence that the most contemporary and region-specific research regarding various aspects of spill response readiness and recovery were considered in adopting response tactics and equipment, and examined actual oil spill response data in developing a realistic plan.
- In lieu of the requirements of § 254.26 (a) for drilling operations, the worst case discharge scenario volume for drilling operations is the daily volume possible from an uncontrolled blowout lasting at least 30 days. Worst-case discharge rates must be based on offset well data and be representative of highest predicted fully unobstructed, open-orifice, maximum Absolute Open Flow Potential, or AAFP, of the well, persisting for at least 30 days (the period required to drill a relief well in § 250.472). Where there is no analogous well data to develop a site-specific, well-specific worst-case discharge blowout flow rate and total volume estimate, the plan should adopt a worst-case discharge volume equal to at least 61,000 barrels of oil per day for Chukchi Sea wells and 25,000 barrels of oil per day for Beaufort Sea wells.
- In addition to requirements of § 254.26 (b), an oil spill trajectory analysis must be included that examines the potential for oil impacts resulting from the worst case discharge under an average-weather scenario and an adverse-weather scenario. Resource sensitivity maps should be provided for each area that could be exposed to oil pollution over at least a 365-day period after the spill. The trajectories must:
 - Reflect the maximum distance that oil can be expected to travel under various oil removal scenarios, including no response; 1-5% oil removal (based on low recovery rates in icy conditions); and 10-20% oil removal (best-case recovery rates in temperate water), and to depict nearshore and shoreline impacts. You may submit oil spill trajectories assuming higher oil removal efficiencies if you can provide technical data to support higher oil spill removal efficiencies.
 - Examine a realistic range of potential Arctic weather conditions that could occur, including adverse-weather scenarios based on at least 10 years of historical data.
 - Assess oil impacts during periods when oil spill response is not possible. Worst-case adverse weather must be examined, and estimates should be included on the frequency and likelihood to encounter adverse weather.
 - Be run using a computer model approved by NOAA and capable of modeling subsurface and surface oil movement in ice-infested waters.
 - Include an estimated oil spill thickness, degree of emulsification, and amount of ice that will be present in order to more realistically assess possible response options.
 - Use ice, wind, and current data for the period of time when the spill may continue.
 - Reflect the maximum distance from the rig/facility that oil could move in a time period during which it's reasonably expected to persist in the environment, including an overwintering trajectory of the oil as it travels in ice or is carried by currents.
- In addition to the requirements of § 254.26 (b), include resource sensitivity maps for each area that could be exposed to oil pollution over at least a 365-day period after the spill, and a detailed description of Arctic resources of special economic, cultural, or environmental importance that could be impacted by the WCD oil spill trajectory. Also, include site-specific strategies (geographic protection strategies) for protecting these important resources prior to oil arriving. Site-specific

protection strategies must have been tested under § 254.90, in Arctic OCS conditions where operations are planned, and in areas where a spill from those operations could reach, prior to inclusion in the OSRP. Adequate pre-staged response equipment and personnel dedicated to carrying out these site-specific protection strategies must be located near the area of special economic, cultural, or environmental importance for immediate deployment.

- In lieu of § 254.26 (d)(1), provide a detailed description of the response equipment that you will use to contain and recover the discharge to the maximum extent practicable. This description must include the types, location(s) and owner, quantity, and capabilities of the equipment. Proof is needed to ensure that the operator or its OSRO own this equipment and it is located in the Arctic region. Oil spill recovery calculations and minimum equipment requirements must be based on Arctic encounter rate modeling, and the effectiveness of the entire spill response system must be examined.
 - Mechanical and in situ burning oil removal estimates must be based on previous actual oil spill removal efficiencies achieved in Arctic spill responses. The operator's model must be approved by BSEE and include Arctic encounter rate limitations, including ice, adverse weather, and logistics limitations, and examine mechanical and in situ burning options.
 - The amount of mechanical response equipment must be sufficient to clean up the entire spill. The amount of in situ burning equipment must be sufficient to clean up the entire spill in the event that mechanical equipment is rendered ineffective. In total, response equipment must include sufficient mechanical and in situ burning equipment to use either technique alone, or in combination, providing responders with a complete, optimized tool kit.
 - For operations at a drilling or production facility, the scenario must show how the operator will cope with the initial spill volume upon arrival at the scene and then support operations until the well blowout ceases (at least 45 days) and continue until the spill is cleaned up.
- In addition to the requirements in § 254.27, the following information must be included in the dispersant use plan appendix of the response plan:
 - A statement that dispersant use will not be conducted until you have proven to BSEE's and the Environmental Protection Agency's satisfaction that dispersant application is nontoxic, not harmful to subsistence resources, is acceptable to local residents, and is proven to result in a net environmental benefit;
 - A detailed plan for monitoring dispersant application and impacts; and,
 - A logistics support plan for dispersant application and monitoring that will not impede mechanical or in situ burning oil removal methods, including, but not limited to, vessel and aircraft dispersant systems that are additional and separate from the vessels and aircraft required for mechanical recovery and in situ burning operations, so that dispersant application (if used) does not hinder the potential to use mechanical or in situ burning methods in other areas of the spill slick.
- In addition to the requirements in § 254.28, the following information must be included in the in situ burning plan appendix of the response plan:
 - An analysis of the environmental consequences of using in situ burning (net environmental benefit), including specific guidance on when in situ burning is not an effective response tool.
 - Pew recommends DOI require the operator, and any OSRO they rely on, to use Arctic tactics and strategies that have been proven during actual Arctic exercises, and that annual exercises be mandatory.

12. Draft Technical Standards Should Not be Included in a Federal Rule

DOI proposed including a draft industry standard in the rule. Pew does not support inclusion of draft documents into a final, formal rule. Only final documents should be included in a federal rule. Pew supports the inclusion of final industry standards into the rule if:

- (a) Industry standards are made easily accessible and generally available to the public for review, reference, and assessment as part of the rulemaking process and on an ongoing basis thereafter once codified;
- (b) Industry standards are available free-of-charge and are preferably centrally located in the federal government's online archive system at www.archives.gov;
- (c) Industry standards have been subject to technical review by DOI and have been determined to be the best available and safest technology and operating practices, and DOI's technical evaluation of those standards is made available to the public; and,
- (d) DOI's rules include mandatory deadlines to supplement the industry standard, where mandatory deadlines are lacking in the industry standard.

For these reasons, Pew does not support including a draft version of the third edition of American Petroleum Institute Recommended Practice Standard No. 2N (API RP 2N), Recommended Practice for Planning, Designing, and Constructing Structures and Pipelines for Arctic Conditions. The most recent edition API RP 2N (second edition) was published in 1995, and is 20 years old. Substantial Arctic technology improvements have occurred in both the U.S. and international Arctic operations since that time. API is currently drafting the third edition of API RP 2N; the final content is unknown at this time. When the final document is available from API, it could be considered for inclusion later. Additionally, DOI's proposed rulemaking did not include a technical evaluation of API RP 2N, Draft Third Edition, or any assessment of how DOI determined this standard to be the best available and safest technology and operating practices in accordance with 30 CFR § 250.107(c).¹

In the preamble to the proposed rule, DOI explained most of API RP 2N third edition draft content is already contained in an internationally approved, consensus ISO standard 19906. Pew recommends the ISO 19906 standard be included (instead of the draft API document). ISO 19906 is a final, approved, and internationally recognized consensus standard. The ISO 19906 Arctic Offshore Structures Standard considers ice-loading on the structure and includes design standards for man-made islands; fixed steel structures; fixed concrete structures; floating structures; subsea production systems; topsides; ice engineering for operations; and safety and environmental issues in ice. The ISO 19906 standard specifies requirements and provides recommendations and guidance for the design, construction, transportation, installation, and removal of offshore structures, related to petroleum and natural gas activities in Arctic and cold regions. Important environmental parameters examined in the ISO 19906 include ice type, size and thickness, water depth, sea state, wind, currents, season length, and temperature. While the standard does not specifically cover MODUs, mechanical, process and electrical equipment, and operation, maintenance, service-life inspector or repair, there is considerable useful material in this standard that does apply to Arctic OCS exploration drilling, especially in the absence of any other final international or national standard specifically developed for Arctic MODU operations.

Pew also recommends other internationally recognized consensus standards and guidance be included, such as the IMO Standard for Ships Operating in Polar Waters, 2010 Edition, the Arctic Council Arctic Offshore Oil and Gas Guidelines, and the ICAS Requirements Concerning Polar Class.

¹ § 250.107(c), states: "You must use the best available and safest technology (BAST) whenever practical on all exploration, development, and production operations. In general, we consider your compliance with BSEE regulations to be the use of BAST."

DOI requested comment on whether the ISO 19905-1 standard should be included. Pew does not support inclusion of ISO 19905-1 standards for independent leg jack-up units, because this standard does not apply to MODUs operating in regions subject to sea ice and icebergs, and DOI has not provided sufficient technical support to justify the safe use of jack-up rigs in the Arctic.

Pew recommends the regulations be clarified to state any new or revised document incorporated by reference (at 30 CFR § 250.198) will be subject to a 30-day public review and comment period including a technical support document prepared by the BSEE showing how the document meets the best available and safest technology and operating practices standard of 30 CFR § 250.107. DOI's regulations at 30 CFR § 250.107 (c) require use of "best available and safest technology (BAST) whenever practical on all exploration, development, and production operations," and states that "In general, we consider your compliance with BSEE regulations to be the use of BAST." Therefore, before including a document by reference into the regulations, BSEE should be required to show that it has reviewed the document and has determined it to meet the best available and safest technology and operating practices standard.

13. Water Pollution Prevention

Pew supports DOI's proposed regulations that clarify exploration operators are prohibited from discharging petroleum-based muds and cuttings contaminated by the mud into Arctic OCS waters. The waste must be collected and transported to an approved waste treatment and disposal facility. DOI included authority for the BSEE Regional Administrator to prohibit or limit discharge of water-based muds and cuttings contaminated by the mud under certain circumstances.

Pew strongly supports more stringent pollution discharge prohibitions for water-based muds and cuttings, especially in subsistence use and environmentally sensitive areas. DOI's preamble to the proposed rule explains the Alaska Eskimo Whaling Commission, the North Slope Borough, and others, requested DOI to consider marine mammal's health and subsistence use impacts; and that subsistence hunters have expressed concern that whales are capable of detecting the odors from mud and cuttings and will avoid areas where these discharges occur, resulting in similar effects. DOI's preamble also reports subsistence hunters have expressed concern that hunting farther away from shore to find displaced whales can increase transit time, reduce the likelihood of successful harvests, increase exposure to adverse weather and dangerous sea states, increase safety concerns for subsistence hunters, and increase towing time necessary to bring the animals back to shore for processing (which can negatively affect the viability of the meat and blubber for food because of spoilage).

Pew's 2013 Arctic Standards Report recommended DOI revise its regulations to prohibit discharge of drilling muds, cuttings, sanitary wastes, produced water, and all other discharges, where technically feasible methods of collection exist in the Arctic Ocean. Therefore, Pew recommends DOI revise the proposed regulations to prohibit discharge of all muds and cuttings, with a very narrowly defined exception for technical infeasibility.

Where technically feasible methods of collection do not exist, the burden of proof should be placed on the operator to demonstrate technical infeasibility in its EP. The burden should not be placed on local residents to request no water pollution for every drilling project; the no pollution alternative should be the default requirement, with the burden placed on the applicant to request an exemption.

14. Blowout Preventer (BOP) Improvements

Pew supports DOI's proposal to require BOPs be tested every 7 days instead of every 14 days and proposal to require real-time monitoring (30 CFR § 250.447 and § 250.452). Real-time monitoring is an

important prevention and safety feature meant to give personnel the best information to make decisions before proceeding with operations. We also support ensuring BSEE has access to this data.

However, DOI's proposed regulations do not include other needed BOP improvements. Pew's 2013 Arctic Standards Report made six additional recommendations for BOP system improvement and verification including requirements for: third-party verification; repair and recertification standards; remotely operated acoustic activation modules; redundant BOP blind shear rams for Arctic operations; remotely operated vehicle access point for subsea Arctic BOPs; and redundant ROV hot stab panels for subsea Arctic BOPs.

We are aware that DOI is simultaneously working on a separate well control regulation. Pew requests, however, that these improvements preferably be included in the Arctic rulemaking. We will be reviewing and commenting on DOI's proposed well control rule separately.

15. Include Detailed Information on Suitability for Arctic OCS Conditions in Exploration Plan

Pew supports DOI's proposal to require more information in the EP application and the APD about equipment suitability for operating in Arctic OCS conditions. However, Pew is concerned the proposed language requires very "general" information in the EP application (30 CFR § 550.220), deferring detailed data and plans to the APD (30 CFR § 250.418(k)).

Pew is concerned that, as proposed, there will be limited, and general information about the drilling rig, SCCE, relief well rig, and vessel support information at the Exploration Plan stage which may be insufficient for the agency and public to make an informed decision. APD applications are typically submitted only a few months before drilling commences, and are not subject to public review and comment. We are concerned this important information will come too late in the process for the agency to make significant changes in the proposal and will be submitted outside the public review process.

Pew recommends moving some of the new data proposed for the APD (30 CFR § 250.418(k)) to the new Exploration Plan requirements (30 CFR § 550.220) including: a detailed description of how the drilling rig, relief well rig, SCCE, support vessels and other associated support equipment and activities will be designed and conducted in a manner suitable for Arctic OCS conditions, are capable of preventing, controlling and/or containing a worst case discharge.

16. Integrated Operations Plan (IOP)

Pew supports DOI's proposal to require an IOP be submitted to DOI (BOEM) at least 90 days prior to filing the EP, addressing all phases of proposed Arctic OCS Exploration Program. However, the proposed IOP process does not include any requirement for agencies to review or approve the IOP, and no public review is proposed. Pew agrees the IOP should be submitted ahead of the EP, allowing the operator and regulatory time to improve the plan. However, Pew recommends the IOP be finalized and submitted as part of the EP and be approved by DOI (in consultation with BSEE and the U.S. Coast Guard), as a binding commitment. Inclusion of the IOP in the EP will also reduce information redundancy. We recommend that information contained in the IOP does not need to be repeated in the EP.

The proposed list of contents for the IOP is excellent, however, Pew recommends the towing plan requirement be expanded to specifically require.

- A plan for safely transporting the drilling rig in the maximum weather conditions that may be encountered.

- At least two tugs capable of towing the drilling rig in the worst-case conditions anticipated along the transit route that includes an escort tug for immediate tug assistance if the primary tug is rendered inoperable or additional tug support is required.
- A contingency plan that describes the equipment and procedures for recovering a rig that breaks free of the towing vessel and, define weather and other conditions where it is unsafe to tow the drilling rig and locations for safe harbor that rig will be placed in during these periods along the towing route.
- A contingency plan to rapidly provide assistance to a disabled fuel supply vessel to avert a collision or grounding, or provide rescue assistance if the vessel becomes trapped in ice.

17. Safety Environmental Management Systems (SEMS)

Pew backs DOI's proposal to bolster the audit frequency for Arctic operations. DOI proposed Arctic OCS exploration drilling audits be required every year of drilling, with one onshore audit prior to drilling and one offshore audit during drilling. A pre-drilling onshore audit must be done no later than March 1 of the drilling year, including submittal of a plan to remedy any deficiencies. The offshore audit during drilling must be completed in the first 30 days of drilling, and a plan to remedy any deficiencies within 30 days of audit completion.

Pew recommends DOI include additional clarity in the regulation to define the scope of the SEMs audit for the onshore and offshore portions of the audit. Pew recommends the onshore portion of the audit be defined to include a physical audit of all major equipment proposed in the EP and APD (including at a minimum the drilling rig, SCCE, relief rig, and support vessels) to verify this equipment is ready and capable of executing the EP and APD. This equipment may be physically stored or located onshore, in a harbor, or moored offshore during the onshore portion of the audit. The offshore portion of the audit must include a physical audit of all equipment used to execute the EP and APD in the Arctic OCS (including at a minimum the drilling rig, SCCE, relief rig, and support vessels), while drilling is underway.

Pew recommends adding a firm timeline for remedying deficiencies or nonconformities found during the onshore portion of the audit, prior to start of drilling. Specifically, we recommend the March 1 onshore audit Corrective Action Plan (CAP) include a plan for remedying any deficiencies prior to the open-water drilling season that typically starts in July. Likewise, Pew recommends the offshore audit findings be remedied as soon as they are identified by the audit. Because an open water drilling program typically only lasts a few months, we are concerned that an audit that may take the first month of the drilling program, followed by a report and development of a CAP that could take another 30 days, followed by additional time to implement a CAP, may take most of the drilling season. This process may result in unabated deficiencies or nonconformities lasting most of the drilling season. Therefore, we recommend the audit report and CAP timing be expedited to 15 days, and the CAP include a plan to remedy all deficiencies or nonconformities no later than 30 days after the offshore portion of the audit.

18. Air Pollution Prevention

DOI's proposed regulations did not include any improvements in air pollution prevention and control regulations at 30 CFR § 550.302 and 30 CFR § 550.303; yet, air quality is an important issue to regional stakeholders, and Arctic OCS exploration permits have been subject to delays over this matter. Pew's 2013 Arctic Standards Report recommended DOI improve revised at 30 CFR § 550 to:

- Eliminate the exemption formulas set forth in 30 CFR § 550.303(d) and the temporary facility exemptions in 30 CFR § 550.302.
- Require each OCS EP and DPP to account for the collective emissions of drilling equipment, production facilities, as well as its associated fleet; conduct air quality modeling to assess impacts

with all ambient air quality standards and comply with those standards throughout the OCS not just at the shoreline; and to install modern technological controls to limit pollution from significant sources.

- Ensure DOI's air pollution inventory, modeling assessment, and control technology requirements are at least as stringent as the Environmental Protection Agency's.

It is our understanding that DOI may be working on a separate rulemaking effort in 2015 and 2016 to address these concerns. Pew requests DOI either include these recommendations for the Arctic OCS during this rulemaking process, or explain how it is advantageous to defer those improvements to a separate rulemaking effort in 2015 and 2016.

19. Regulatory Impact Analysis

Pew disagrees with the method used to calculate DOI's initial Regulatory Impact Analysis (RIA), RIN: 1082-AA00 that estimates the incremental cost of the proposed rule to be \$1.1 to \$1.3 billion over 10 years, equating to an upper-end cost of \$130 million per year. Under Executive Order 12866, an agency must determine whether a regulatory action is significant and subject to the requirements of the EO and Office of Management and Budget (OMB) review. The threshold for a "significant" action is one that has an annual effect on the economy of \$100 million or more.

Operators choosing to work in the Arctic should expect to pay higher costs to operate in this unique, environmental sensitive, remote, and risky environment. It is logical and expected for an Arctic OCS operator to incur higher regulatory compliance costs than it would in other areas of the OCS. However, Pew believes the \$130 million per year cost is substantially overestimated because it includes the cost of technology and practices that DOI already requires of Arctic operators, and equipment and practices that are industry standards. Most of the \$130 million per year cost listed in Exhibit 2 of the proposed rule should be included in the baseline economics.

The incremental cost of the proposed rule, as DOI explains in the rule's preamble (Section VI.B.3), includes the cost of proposed new requirements that are beyond existing regulations, voluntary industry standards, and requirements DOI has previously and routinely imposed. Whereas baseline costs are those incurred by industry today under existing regulations, industry standards, and under any requirements DOI routinely imposes. Relief rigs, SCCE, and securing a well prior to permanent abandonment have been required previously by DOI's Arctic OCS exploration drilling approvals, but are not formally codified in regulation. Codifying these important requirements will streamline the application process, and establishes consistent, clear, equitable requirements for all operators. While DOI is now proposing to codify these requirements, it does not diminish the fact that these costs are already part of the baseline economic profile and included in industry estimates for Arctic OCS exploration.

Relief rig costs should be included in the baseline economics because DOI has previously imposed a requirement for Arctic OCS exploration operators to have a relief rig. In computing the \$110 to 130 million per year incremental cost DOI included \$276 million for a standby relief rig in 2015 and \$276 million in 2016 for a total of \$552 million (or \$0.55 billion over 10 years). Furthermore, no operator has proposed using a stand-by drilling rig in year 2015 or 2016. Shell has proposed to drill with two rigs in 2015. Because both rigs would be actively drilling, there is no stand-by relief rig cost. The \$0.55 billion cost should be moved to the baseline economics.

A large cost attributed to the rule is the cost of securing a well prior to permanent abandonment. DOI estimated a \$0.24 billion (over 10 years). DOI has long-required use of well cellars and proper temporary abandonment of Arctic wells. These costs should be included in the baseline economics.

DOI estimated a cost of \$0.31 billion (over 10 years) for providing SCCE. The requirement to have well capping and containment equipment was included in the November 8, 2010, Notice to Lessee (NTL) No. 2010-N10. These costs should be included in the baseline economics.

Removing the stand-by relief rig cost (\$0.55 billion over 10 years), cost of securing a well prior to permanent abandonment (\$0.24 billion over 10 years), and cost of SCCE (\$0.31 billion over 10 years) from the total \$1.3 billion estimate, reduces the incremental rule cost to approximately \$22 million per year. The \$22 million per year cost is substantially less than the Executive Order 12866, \$100 million threshold for a significant action.

The \$22 million per year incremental cost is mostly attributed to the cost of more frequent BOP testing (\$19 million per year) and real-time BOP monitoring (\$2 million per year) which were both recommended by Shell in its 2012 Exploration Program as prevention initiatives.

In closing, Pew strongly supports DOI's proposed Arctic regulations and believes that there are some cases where these requirements should be strengthened. We think that any weakening of this proposed rule could seriously undermine the intent of a safe and responsible approach in the vulnerable Arctic Ocean. Pew sincerely appreciates consideration of our comments and welcomes the opportunity to meet with DOI representatives to further discuss our comments and recommendations.

Sincerely,



Marilyn Heiman
Director, U.S. Arctic Program
The Pew Charitable Trusts