THE OCEAN FOUNDATION

Coastal Coordination Program

April 17, 2015

EPA Docket Center (EPA/DC)
Docket ID No. EPA-HQ-OPA-2006-00990
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: RIN: 2050-AE87, Docket ID No. EPA-HQ-OPA-2006-00990, Comments of The Ocean Foundation on Proposed Changes to Subpart J of the National Contingency Plan

To Whom It May Concern:

Thank you for this opportunity to provide comments on behalf of The Ocean Foundation on Proposed Changes to Subpart J of the National Contingency Plan pursuant to RIN: 2050-AE87, Docket ID No. EPA-HQ-OPA-2006-00990. Please apply these comments to both the "Current Proposal" and also to the "Future Final Rule".

Many of the current generation of available dispersant chemicals have repeatedly demonstrated that the ecosystem costs of dispersant application can, over the longer term, potentially exceed any short-term ecosystem benefits derived from their use.

Determining whether or not to approve the application of chemical dispersants to maritime spills of crude oil or refined petroleum products is often one of the most controversial and consequential decisions facing resource managers. While dispersant application is sometimes mischaracterized as a "saving the birds at the expense of the fish" decision point, the applied reality of this quandary is much more complex and event-specific. Proposals for much-needed revisions to an ineffective framework of confusing regulations are long overdue, and while the present iteration of proposed changes to Subpart J represents a good start, more needs to be done to respond to the issues raised in our subsequent comments herein.

More thorough toxicity testing than that now being proposed for dispersant chemicals is needed, the type of information provided to the public and to responders prior to application needs further broadening, and careful monitoring must be conducted involving various biological receptors located in a range of environmental settings in any event where chemical dispersants are applied. In addition, the eventual ruling should prohibit outright the listing or authorized use of chemical or biological agents formulated with any endocrine disrupting compounds (EDC's).

A more transparent and open process involving the public is needed, while the scope of Area Contingency Plans (ACP's) must be expanded and more Area Committees and companion Citizens' Advisory Committees are also needed. ACP's should not incorporate preauthorization for the use of dispersants, relative to Section 300.910(c) and other sections. There needs to be a transparent and open public process for appeals, with ways to secure the removal of products that do not function as intended and/or have unacceptable negative side effects. Burning agents should not be added to the definition of chemical agents, relative to Section 300.910(c) and other sections. At present, it appears that the EPA draft inappropriately relies on in-situ burning as the primary spill response mechanism in Arctic waters, while little research on the efficacy and secondary impacts of such activities is provided. In addition, the application of dispersants is also proposed as one of the anticipated tools for spill response efforts in Arctic waters, while the document provides no accompanying analysis of the fate and effects of oil, oil and dispersant mixtures, and dispersant solutions under sea ice and in the temperatures found in the Arctic. The lack of the ability to even track the progress of oil – or of an oil and dispersant mix - under sea ice should be considered in the formulation of any final rule, as well as the lack of biodegradation processes under sea ice due to low temperatures and the absence of exposure of the product and associated dispersant chemical mixtures to air and sunlight.

Summary:

The Ocean Foundation recommends *against* any blanket pre-approval of the application of dispersants without the availability of a new generation of non-toxic, biodegradable, and benign dispersants that have been fully tested in the field at scale, with follow-up research into fates and effects of all components of the compounds for a reasonable length of time.

There is a compelling need for further advancements in research into dispersant chemistry that can reasonably be expected to lead to the development of more environmentally-benign compounds for use as dispersants than those chemical formulations now stockpiled and therefore most readily available to responders. The Ocean Foundation recommends that research and development necessary to advance the technology of safer dispersant alternatives should be actively promoted and funded by the federal government and by the petroleum industry. Further research into finding more effective seagoing and coastal oil spill containment booms, skimmers, separators, and "oil mop" types of petroleum recovery devices should also be aggressively promoted through a systematic policy approach utilizing funding of baseline research and incentives for the application of new technologies.

The Current Draft of the Proposed Changes to Subpart J Should Be Updated to Include Full Consideration of Each of the Following Items:

In responding to any given incident, a timely decision about dispersant application by a multi-agency panel of decision makers working in conjunction with the on-scene coordinator, and based on the best available information about species in the path of the spill, seasonal considerations, weather, wind, currents, and other factors *should not categorically preclude* an informed decision not to proceed with dispersant application after carefully weighing all factors in play during a specific incident. State-of-the-art radars, satellite tracking of sea-surface current drogues, and other real-time spill trajectory modeling tools will inevitably have a role in assessing the degree and scope of comparative risk to various biological resources and critical habitats within and adjoining sensitive locations. The application of dispersants should *only* be undertaken in extreme situations and needs to be respected as a response strategy of last resort, after a full accounting of the downside risks that such action presents. A much higher burden of proof of compelling need and a higher demonstrable net environmental benefit than that applied in recent events must be in place before aerial dispersion, subsea injection, or other deployment of chemicals suspected of having toxic or ecologically-damaging properties is allowed.

Subpart J Should Address Crude Oil, Refined Product, Dispersant and Oil/Dispersant Mixtures:

Marine oil spill treatment agents can be defined as any class of chemical that assists cleanup of oil in the marine environment. Spill treating agents can be broadly separated into *surfactant products*, which have molecules with both water-soluble and oil-soluble components (dispersants, surface-washing agents and emulsion-breakers/inhibitors); *solidifiers*, which act to fuse oil into solids or gels; *recovery enhancers*, which are formulated to increase the adhesion of some low-elasticity oils; and *biodegradation agents*, which are formulated to hypothetically enhance the breakdown of oil into less harmful constituents by microbial action. Major issues common to all classes are effectiveness, application rates, and potential for toxicity, either directly resulting from the agent itself or by increasing the partitioning of oil components into the water column.

Many of the so-called "dispersants" presently found on the government-approved list of chemicals used to treat oil spills are composed in large part by "hydrotreated petroleum products" that are essentially functionally analogous to kerosene. The largest current industry and cooperative stockpiles of available dispersants consist of both "COREXIT 9500" and "COREXIT 9527A". COREXIT 9527A was used during the BP Gulf Oil Spill until supplies ran out in May of 2010. COREXIT 9527A additionally includes 2-butoxyethanol, a very controversial compound due to its past documented association with adverse health effects in humans.

Once dispersant is applied to a spill, at least three different mixtures come into play wherever the forces of nature may subsequently transport that spill. The resulting range of mixtures includes the original spilled product or crude oil, the dispersant itself (not all dispersant applied from aircraft or from vessels actually contacts the spill or mixes with the slick), and, to the degree that the dispersant is successfully applied on or nearby the spill surface, the resulting oil-dispersant composite blend. Each of these mixtures behaves in different ways in the marine environment, and each poses particular biological risks to different component parts of various niches in the marine ecosystem and to humans exposed to the vapor, liquid, or tar as the spill spreads and dissipates. The range of affected habitat types can be commonly expected to include estuaries, rocky intertidal zones, mudflats, beaches, seafloor benthic assemblages, and the water column itself. Each of these habitats - and their resident species - will inevitably react differently to each of the types of mixtures with which it comes into contact, and the environmental and meteorological conditions at the time of the incident will present differing opportunities and threats in each set of circumstances. There is no "one size fits all" response to an oil spill.

Whether a marine spill is composed primarily of "product", "oil-dispersant mixture", or "dispersant", it is to be anticipated that biological effects can include direct toxicity, carcinogenic impacts, and mutagenic impacts. Mutagenic impacts can affect multiple future generations of an exposed organism. Ingestion of spill components by prey species will often result in biomagnification of certain chemical components in the food chain itself, with higher levels found in top predator species.

Likewise, the physical behavior and immediate direct impacts of each of these components of a waterborne spill, whether it be crude oil, an oil-based refined product, oil-dispersant mixture, or dispersant alone, can be expected to differ for each type of impacted habitat and for each specific organism that comes into contact with any of the components - or with mixtures of the components - of the spill. For example, dispersant mixed with oil can enable the entrained hydrocarbons to physically behave in a different manner within the vertical context of the water column than would a floating oil slick by itself, often enhancing the possibility that the oil-dispersant mixture might enter a sensitive coastal estuary or wetland habitat by passing underneath deployed floating containment booms. In the case of the BP Gulf of Mexico Oil Spill, portions of the oil-dispersant mixture that were eventually deposited within coastal wetlands exhibited unusual physical behaviors in which the spill material would rise and fall vertically in the water column between day and night conditions at prevailing temperatures.

While dispersants, once applied, often cause portions of a floating oil slick to visually sink out of sight, the remainder of the floating portion of the slick, as well as the subsurface residue of the oil-dispersant mixture, can, under certain conditions, exhibit the dangerous property of increased penetration of feathers or fur of affected avian or pinniped target species. So while the total volume of oil actually contacting birds or fur-bearing mammals may, in some cases, be diminished after dispersant is applied to a floating oil slick, the ability of the remaining oil to damage these same species can actually be *increased* by this penetrating property brought about by the dispersant. In addition, the oil-dispersant mix is often found to have a higher level of toxicity than either the oil alone or the dispersant alone, so birds ingesting toxic petroleum components through preening as they try to remove oil from their feathers - or marine mammals ingesting oil as they attempt to dislodge oil from their fur or skin tissue - may be subject to exposure to higher levels of harmful compounds in the process. Species with fur or feathers commonly experience smothering, hypothermia, and skin burns from spilled product in various combinations with dispersant compounds. Flocculation, or the "foaming agent" properties of some dispersants, can cause spilled oil or product to become airborne and to blow ashore as foam on the wind, entering coastal habitats to become reconstituted as oil or oil-dispersant mix, in locations such as estuaries where such pollutants would not have necessarily traveled on the water's surface if left untreated by dispersant.

Any modified definition of sinking agents should be scrutinized for accuracy. Clays can inadvertently become sinking agents and therefore have significant potential to damage benthic organisms. In Section 300.5, EPA should remove the inaccurate definition for Miscellaneous Oil Spill Control Agent (MOSCA) and surface collecting agents, since the draft of the revised Section 300.5 is to include new, amended, and deleted definitions. The final rule should ensure no unintended or deliberate circumvention of 40 CFR part 110.4 through any inconsistencies with Subpart J definitions. EPA should remove any remaining clauses calling for exceptions. Section 300.910, as proposed, should add new requirements for plan review, concurrence, and withdrawal procedures, but not permit blanket preauthorization without site-specific studies of the affected habitats in advance. Section 300.913 should ensure peer-review in the process of monitoring dispersant fates and effects.

The proposed Subpart J amendments fail to incorporate a characterization of the subsurface polycyclic aromatic hydrocarbons found at the Deepwater Horizon site, see:
http://www.sciencemag.org/content/332/6033/1033.3.full

The proposed Subpart J amendments fail to incorporate important issues raised in these studies, see:
"Embryotoxicity of mixtures of weathered crude oil collected from the Gulf of Mexico and COREXIT 9500 in mallard ducks (Anas platyrhynchos)":
http://www.ncbi.nlm.nih.gov/pubmed/22542232
and:
"Comparison of acute aquatic effects of the oil dispersant COREXIT 9500 with those of other COREXIT series dispersants", see:
http://www.ncbi.nlm.nih.gov/pubmed/8950541

Subpart J Amendments Must Better Consider the Timing and Context of Dispersant Decisions:

Outside of U.S. waters, in countries where dispersant use is often subject to a strong policy bias related to resulting elevated toxicity to submerged habitats, there is usually a requirement for a judgment to be made - and argued to the relevant authority - that there is a net environmental benefit of applying dispersant. This decision must often be made quickly during an actual spill incident response due to the short window of time available before the slick spreads exponentially or before natural weathering increases the viscosity of most oils to an untreatable stage. Resource managers will likely be called upon to make carefully considered recommendations about whether, where, or how much dispersant should be applied to floating oil products and these critical decisions must necessarily be based upon a combination of seasonal, meteorological, and geographic real-time and site-specific considerations. These considerations include what fish species or life-stages of aquatic organisms in the water column will likely experience increased oil exposure and toxicity by sinking the hydrocarbon product and breaking it into more bio-available particles through the use of dispersant. Particulate oil droplets resulting from surface or subsea dispersant application tend to resemble planktonic forms of food to many marine species, thereby creating the potential for a greater uptake of toxic oil components by some animals that live in the water column. To the degree that archival documentation of baseline conditions is completed well in advance of a spill and indicates anticipated seasonal distribution of probable spill target species - including birds, fish, shellfish, and crabs and each species' larval stages or offspring - more informed response decisions can be made by resource managers. These baseline datasets can help to avoid or mitigate the inadvertent amplification of spill impacts to certain parts of the food chain by dispersants and their byproducts. In addition, the full extent of damage to public trust resources can thus be better documented using a strong baseline data analysis, helping to ensure just compensation to damaged parties by the spiller. In making decisions about dispersant use, success rates for all response methodologies that have been documented during precursor incidents should also be considered.

<u>Subpart J Should Consider the Broad Clean Water Act Context:</u>

With respect to the use of dispersants, the federal Clean Water Act presents what would at first appear to be conflicting mandates. The Clean Water Act prohibits the discharge of pollutants into navigable waters, but the same law also authorizes the President to allow the application of dispersant in the event of an oil spill. The Clean Water Act, however, requires prior planning for dispersant use. Spill response activities must be conducted pursuant to a National Contingency Plan (NCP), and the Environmental Protection Agency (EPA) is charged with listing dispersants on the NCP Product Schedule as part of its preparation of the NCP. While the listing of a dispersant on the schedule does not constitute EPA's approval of the product for use on an oil spill, it is a prerequisite that makes the product lawfully available for use in oil spill response activities. Toxicity testing currently associated with listing of a product on the NCP Product Schedule is not intended to estimate the dispersant's ecosystem effects, but merely tests for acute toxicity within forty-eight and ninety-six hours. The tests do not consider environmental persistence, effectiveness with multiple types of oil at multiple temperatures, byproducts, or endocrine effects of the dispersant compounds. The industry is responsible for this toxicity testing, although the EPA retains the prerogative to conduct its own testing to verify industry results and should continue to do so. The EPA presently lists fifteen dispersants on the NCP Product Schedule, three of which belong to the COREXIT brand and two of which are the primary COREXIT dispersants that were utilized in response to the BP Gulf of Mexico Oil Spill. The current NCP Product Schedule is found at: http://www.epa.gov/osweroe1/content/ncp/product_schedule.htm

EPA promulgates the regulations that companies must follow in order to obtain listing of their dispersant product on the NCP Schedule, and the agency is strongly encouraged to make these regulations more precautionary by requiring comprehensive toxicological studies, safety criteria, and full disclosure of ingredients as a requirement for listing these products on the NCP Schedule. The final rule should include a clear regulatory scenario that will permit the public to seek and obtain expeditious removal of a dispersant or other response product from the NCP Schedule with due cause.

In addition, the so-called "Design for the Environment" certification should be further refined and better defined, with redundant testing in a range of environments in real-world situations required before this status is awarded to any compound.

<u>Fates and Effects in a Range of Environmental Settings Need to be Addressed in Subpart J:</u>

Since a spill and the species it will impact represents a virtual living laboratory, the impact zone of a significant maritime hydrocarbon release will not necessarily reveal its full story about long-term effects of each incident for some time *after* the exposures take place. In the case of dispersants associated with the response to the BP Gulf of Mexico Oil Spill, the comprehensive list of all of the component chemicals used to formulate the range of different dispersants on the market were not generally available to the public. Among the numerous chemicals that *have* been made public as components in dispersants, fifty-seven ingredients are known. These include carcinogens (five chemicals associated with cancer), thirty-three chemicals associated with skin irritation, thirty-three chemicals linked to eye irritation, eleven chemicals suspected of acting as respiratory toxins or irritants, and ten chemicals that are suspected kidney toxins. In the marine environment, components of dispersants used during the BP Gulf of Mexico Oil Spill included eight chemicals known or suspected to be toxic to aquatic organisms, and five chemicals known or suspected to have a moderately acute toxicity to fish. As stated above, the long-term biological impacts of oil or oil-dispersant mixtures cannot be fully documented until months or

even years after the exposure. In the case of the BP Gulf of Mexico oil spill, confirmation of studies showing an increased mortality of baby dolphins did not emerge until two years after the exposure, see:
http://www.guardian.co.uk/environment/2012/mar/31/dolphins-sick-deepwater-oil-spill

As a result of the documented increased mortality of baby dolphins in the areas affected by the BP spill, the U.S. Bureau of Ocean Management curtailed planned oil industry 2012 deep penetrating seismic surveys in Gulf of Mexico waters due to Agency concerns that geophysical airgun activity can disrupt mother and calf bonding, potentially further damaging the already-impaired dolphin population in this region, see:
http://abcnews.go.com/US/wireStory/agency-stops-seismic-tests-worries-dolphins-16055507#.T3pCwN0rYS8

Likewise, BP Gulf of Mexico Oil Spill impacts to deepwater corals, potentially exacerbated by the large volume of dispersants applied during this spill at a subsea discharge horizon, were not confirmed until 2012, see:
http://articles.cnn.com/2012-03-26/us/us_gulf-oil-coral_1_deepwater-horizon-oil-spill-coral-communities?_s=PM:US

Portions of the Gulf of Mexico exposed to crude oil and oil-dispersant mixtures have also continued to exhibit larger numbers of sick fish:
http://www.tampabay.com/news/environment/wildlife/article1210495.ece
and:
http://www.biologicaldiversity.org/publications/papers/Dispersants.pdf

The science on the after-effects of the application of vast amounts of COREXIT dispersant on deepwater corals is now emerging, and should be taken in to account in the redesign of Subpart J:
https://usresponserestoration.wordpress.com/2015/04/01/at-the-bottom-of-the-gulf-of-mexico-corals-and-diversity-suffered-after-deepwater-horizon-oil-spill/
and:
http://deepseanews.com/2015/04/given-the-choice-corals-would-prefer-oil-to-dispersant/
and the study at:
http://www.eenews.net/stories/1060016566
and:
http://www.nbcnews.com/science/environment/bp-oil-spill-left-rhode-island-sized-bathtub-ring-seafloor-n234961

Subpart J Must Objectively Evaluate Important Human Health Considerations Associated With Both Crude Oil and Dispersant Application:

Crude oil contains a complex mix of chemicals that can be absorbed into the human body through the skin and lungs and during the ingestion of food and water. When inhaled or swallowed, most of the crude oil components enter the human bloodstream quickly. Crude oil contains chemicals that easily penetrate cell walls, damage cell structures (including DNA), and alter the function of the cells and the organisms where they are located. Crude oil is toxic, and ingredients can damage virtually every system in the human body. Damage to these systems causes a wide range of diseases and conditions. In addition, interference with normal growth and development via endocrine disruption and direct damage to fetal tissue results from exposure to many crude oil ingredients *(Center for Disease Control, 1999)*. DNA damage can cause cancer and multi-generational birth defects. Children are particularly vulnerable to toxic chemicals in crude oil that interfere with normal growth and development. Children's brains are susceptible to neurotoxin ingredients found in oil, and endocrine disruptors in crude oil can cause abnormal growth, infertility, and other health conditions. Newborns are the most vulnerable, due to incompletely formed immune and detoxification systems. The final rule must be in full compliance with the letter and intent of Executive Order 13045 related to "Protection of Children from Environmental Health Risks and Safety Risks."

Oil spill dispersants have many potential effects, including acting as solvents that can mix with the crude oil mass and move through it. Details can be found in the 2005 National Research Council (NRC) report titled: *"Oil Spill Dispersants: Efficacy and Effects"*. See:
http://nap.edu/openbook.php?record_id=11283

This 2005 NRC report cites studies indicating that dispersants can increase the uptake of oil by organisms. This is scientifically plausible when one considers that cells of all animals, including humans, have cell walls made of lipids. Lipids are fats, very similar to simple hydrocarbons that are in crude oil. Detergents, surfactants, and solvents make it easier for the oil to transit cell walls in living tissue. The properties that enable dispersants to move into an oil spill to "disperse" it also make it easier for oil to move through cell walls, skin barriers, and many other protective coatings that humans and other animals rely on to project vital organs, underlying layers of skin, and the surfaces of eyes and other structures. The addition of chemical dispersants to crude oil in an oil spill situation can thus complicate every biological contact made by the oil and by the oil-dispersant mixture throughout the water column and at future points of landfall or aerosol contact. The actual biological "receptors" are then controlled only by wind, waves, and ocean currents. In the aftermath of the BP Gulf of Mexico Oil Spill, responders and residents of coastal and even inland communities reported symptoms including headaches, nausea, vomiting, diarrhea, abdominal pains, dizziness, chest pains and tightness, irritation of eyes, nose, throat, and lungs, difficulty breathing, respiratory system damage, skin irritation and sensitization, hypertension, central nervous system depression, neurotoxic effects, genetic damage and mutations, cardiac arrhythmia, and cardiovascular damage. Some of the exposed individuals, and even entire families, have continued to experience a range of such illnesses, even years after the BP Gulf of Mexico Oil Spill.

Because dispersant application can amplify and complicate human exposure to crude oil and to refined product involved in spill exposures, it is important for responding medical team managers to collect exposure and medical histories from spill response workers as early as possible, to conduct a detailed exposure assessment, and to consider a broad range of health issues that can guide in planning research for necessary public health interventions and to eventually advance the science of mitigating adverse dispersant impacts on human health.

It is critical that individuals who work with or around crude oil wear appropriate personal protective equipment such as gloves, masks, respirators, and water-repellent garments, to minimize exposure to crude oil, dispersants, and oil-dispersant mixtures. Human exposures to oil and dispersants do not constitute a contagion that can be readily addressed with one clear medical treatment. The amount and composition of human exposures - and susceptibility of a given individual's systems and pre-exposure state of health - often control the manifestation of the illness.

Dispersants are designed to form "micelles", small bubble-like structures, to envelop crude oil droplets. Micelles have a portion of dispersant chemical on the outside, in contact with ocean water. Another portion of the micelle is on the inside where the oil is located. The combination of detergent and hydrocarbon ingredients in dispersants in conjunction with chemicals in crude oil is particularly hazardous to humans who inhale contaminated water spray. The dispersant-oil complex in micelles can coat lung surfaces causing lipoid pneumonia, hypersensitivity pneumonitis, asthma, and other serious respiratory problems.
See:
http://www.sciencecorps.org/crudeoilhazards.htm

Response managers from the oil industry are aware of the kinds of toxic, carcinogenic, and mutagenic threats posed by oil, dispersants, and oil-dispersant slurries, see:
http://leanweb.org/press-room/press-release/health-concerns-in-bp-s-own-manual-raise-questions

Along the U.S. Gulf Coast, BP Gulf of Mexico Oil Spill exposures continue to affect human health, see:
http://leanweb.org/our-work/community/public-health/continued-exposure-to-bp-crude-oil-and-dispersed-oil

Ongoing pathways of human exposure to spilled oil and dispersant chemicals include direct dermal or skin contact, crude oil contaminated beaches, marshes, and wetlands, crude oil in the form of tar balls, tar logs, strings and mats, crude oil located in the subsurface waters and seafloor areas of the Gulf of Mexico and associated estuary systems, crude oil on terrestrial and aquatic organisms, and exposure vectors associated with laundering of contaminated worker clothing. In addition, inhalation of chemicals dispersed into the air from contaminated beaches, marshes, and wetlands, marshes burned for vegetation control and not checked for oil contamination before ignition, contaminated aquatic and terrestrial organisms and vegetation, and eating and drinking in the presence of crude oil and contaminated media can also all lead to human exposures. During the initial BP Gulf Oil Spill response itself, "in-situ" burning released aerosolized particulates that drifted significant distances inland, exposing previously-unaffected human communities. Respiratory issues likely related to this airborne exposure continue to be observed. Exposure continues to impact community members along the coastal areas of the Gulf of Mexico coming in contact with the crude oil, including commercial and recreational hunters and fishers, tourists visiting the coastal areas along the northern Gulf of Mexico, divers coming into contact with the crude oil plumes in the water column of the Gulf of Mexico, and remaining oil spill cleanup workers who worked on response activities, see:
http://ipsnews.net/news.asp?idnews=52471
and also, in relation to human health effects, see:
http://www.nola.com/news/gulf-oil-spill/index.ssf/2011/02/bp_oil_spills_health_effects_w.html
and:
http://ragingpelican.com/treating-symptoms/
see also:
http://www.epimonitor.net/Epi-Docs/Archives/EM%20JULYAUG10_Layout%201.pdf

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Updated amendments to Subpart J should also take into account the analysis and modeling of airborne VOC/BTEX concentrations from the Deepwater Horizon incident and other oil spills, see:
http://www.ncbi.nlm.nih.gov/pubmed/21797246
and:
Analysis and modeling of airborne BTEX concentrations from the Deepwater Horizon oil spill at
http://www.ncbi.nlm.nih.gov/pubmed/21797246
and:
Modeling human exposure levels to airborne volatile organic compounds by the Hebei Spirit oil spill at
http://www.ncbi.nlm.nih.gov/pubmed/22468262
and:
BTEX exposure and its health effects in pregnant women following the Hebei Spirit oil spill at
http://www.ncbi.nlm.nih.gov/pubmed/19349738

Updated amendments to Subpart J should also take into account this screening level assessment of risks due to dioxin emissions from burning oil from the BP Deepwater Horizon Gulf of Mexico spill, see:
http://www.ncbi.nlm.nih.gov/pubmed/21073188

Subpart J should consider relevant oil spill response planning study from Australia, see:
http://www.amsa.gov.au/marine_environment_protection/national_plan/contingency_plans_and_management/research_development_and_technology/spill_technology.pdf

Subpart J should include an evaluation of how best to respond to ongoing chronic drilling-related oil spills in the Gulf of Mexico, see:
http://fuelfix.com/blog/2015/04/16/ap-offshore-wells-buried-during-hurricane-ivan-have-been-leaking-oil-into-the-gulf-since-2004/

The increased number and frequency of deepwater drilling operations continues to push the safety envelope into high temperature and high pressure reservoirs. Risky floating offshore storage and processing installations and associated lightering combine with this frontier drilling horizon to now present an exacerbated threat of mega-spills in U.S. waters, see:
http://www.theguardian.com/sustainable-business/2015/apr/17/deepwater-horizon-oil-spill-catastrophe-five-years

It is clear that the burden of proof lies with the industry and the EPA to ensure the safest and most effective amendments for Subpart J, including the expedited evaluation and adoption of new and innovative technologies and bio-safe chemical compounds that are life-friendly and emulate those substances found in nature. Justification for, and provisions for the addition of, safer dispersants to the schedule should be included and explained in detail in the new Section 300.955.

Thank you for this opportunity to provide comments on behalf of The Ocean Foundation on the EPA proposal to amend the requirements of Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan governing the use of dispersants, and other chemical and biological agents, as well as the concerns of public, state, and federal officials regarding their use.

All links cited in this comment letter are hereby incorporated by reference and should therefore be considered to be part of the material we are hereby submitting for the record for both the "Current Proposal" and also for the "Future Final Rule".

Sincerely,

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