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Comments on Proposed Revisions to Subpart J of the 1994 National Contingency Plan

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COMMENTS ON PROPOSED REVISIONS TO SUBPART J OF THE 1994 NATIONAL CONTINGENCY PLAN

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ABSTRACT: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances. Subpart J of the NCP governs the use of chemical agents to control oil discharges, setting forth the criteria for listing an agent on the Product Schedule—a list of the dispersants and other spill-mitigating substances that responders may use in carrying out the NCP. Dispersants are chemical agents that emulsify and disperse oil into the water column. The Environmental Protection Agency (EPA) last amended Subpart J in September 1994.

In light of research and lessons learned during and after the 2010 Deepwater Horizon underwater oil well blowout, the EPA proposed amendments to Subpart J in January 2015. Responders used a combined methodology consisting of containment and recovery techniques, in-situ burning, and chemical dispersant application to lessen the environmental impact of the Deepwater Horizon event. Responders applied nearly two million total gallons of dispersants at the surface and subsea, a controversial and unprecedented decision. When choosing this methodology, responders weighed the potential benefits of intervention against possible collateral harms. But with an outdated contingency plan and Product Schedule, responders lacked data that could have helped to inform their risk analysis. The EPA's proposed amendments address this concern.

This Paper comments on the satisfactoriness of the EPA's 2015 proposed amendments for the following sections of Subpart J: section 300.915, which details data and information requirements for listing on the Product Schedule, focusing on the proposed efficacy and toxicity testing methodologies; proposed section 300.950, newly limiting the submission of claims of confidential business information; proposed section 300.970, providing grounds for the removal of a dispersant from the Product Schedule; and section 300.910, which governs the authorization of an agent for use during a spill response. Furthermore, this Comment recommends that, in order to uphold the NCP's command to apply a response methodology most consistent with protecting the environment and public health, the EPA should formalize a two-phase response plan into Subpart J, thereby only permitting the use of dispersants after an informed weighing of the tradeoffs indicates that containment and recovery techniques alone cannot satisfy this mandate.

I. INTRODUCTION

"The truth is, nobody really knows what to expect, so you have to be prepared . . ..People make too many decisions based on incomplete information. You need to do your homework."[1]

1. Martine Costello, *A Recession-proof Business*, CNNMONEY (Nov. 3, 1998, 9:31 PM), http://money.cnn.com/1998/11/03/smbusiness/q_smallbiz_downturn (quoting Paul Hense).

Mr. Hense, a member of the White House Council on Small Business, spoke these words in 1998 to urge small business owners to prepare for the economic downturn, but they ring just as true for those preparing for a Spill of National Significance,[2] such as the Deepwater Horizon event.[3] The National Oil and Hazardous Substances Pollution Contingency Plan, otherwise known as the National Contingency Plan (NCP), coordinates oil spill preparation and response.[4] In order to best serve those choosing amongst response technologies, the NCP must provide responders, particularly the Regional Response Teams (RRTs), Area Committees (ACs), and On-Scene Coordinator (OSC) with complete and relevant information.

As required by sections 311(d) and 311(j) of the Clean Water Act (CWA), amended by section 4201 of the Oil Pollution Act of 1990 (OPA), the President must prepare and publish a national response plan in case of an oil spill or hazardous substance release.[5] This plan must include a list—the Product Schedule—of the chemical dispersants or other spill-mitigating substances, if any, that responders may use in carrying out the plan.[6] Dispersants are "chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column."[7] Through Executive Order 12777, the President delegated this authority to prepare and publish a national contingency plan to the United States Environmental Protection Agency (EPA or Agency).[8]

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2. *See generally* U.S.C.G., COMMANDANT INSTRUCTION 16465.6 (2012), https://www.uscg.mil/directives/ci/16000-16999/CI_16465_6.pdf (providing guidance to the U.S. Coast Guard for designating an oil spill as a Spill of National Significance under the National Oil and Hazardous Substances Contingency Plan).

3. *See* U.S. EPA OIG, NO. 11-P-0534, REVISIONS NEEDED TO NATIONAL CONTINGENCY PLAN BASED ON DEEPWATER HORIZON OIL SPILL, 1, ii (2011), http://www.epa.gov/oig/reports/2011/20110825-11-P-0534.pdf [hereinafter *Revisions Needed*].

4. *See* Federal Water Pollution Control Act § 311(d)(2)(G), 33 U.S.C. § 1321(d)(2) (2014); *see also* National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. §§ 300.1 *et seq.* (1994), *amended by* 33 U.S.C. § 1321 (2000).

5. *See* 33 U.S.C. § 1321(d)(2).

6. *See id.* § 1321(d)(2)(G); *see, e.g.*, U.S. EPA, NATIONAL CONTINGENCY PLAN PRODUCT SCHEDULE (2014), http://www2.epa.gov/sites/production/files/2013-08/documents/schedule.pdf (providing the most recent Product Schedule as an example).

7. 40 C.F.R. § 300.5.

8. *See* Exec. Order No. 12777, 56 Fed. Reg. 54757 (Oct. 22, 1991).

The EPA last amended Subpart J of the NCP in 1994 to govern the use of oil spill and hazardous substance release response technologies.[9] In addition to setting forth the circumstances for the use of dispersants and other chemical agents, Subpart J outlines twelve criteria manufacturers must satisfy for their chemical agents to be listed on the Product Schedule. The Regional Response Team (RRT), Area Committee (AC), and On-Scene Coordinator (OSC) permit a Responsible Party (RP) to choose from these listed agents when responding to an oil spill or hazardous substance release.[10]

On January 22, 2015,[11] the EPA proposed changes to Subpart J of the NCP, addressing concerns raised during the 2010 Deepwater Horizon underwater oil well blowout—one of the worst environmental disasters in the history of the United States.[12] After the Macondo well exploded 5,000 feet below the surface in the Gulf of Mexico, responders used a combined methodology consisting of containment and recovery techniques, in-situ burning, and chemical dispersant application to lessen the spill's environmental impact.[13]

Each of these three response tools presents advantages and disadvantages. Containment and recovery techniques slow the spread of spilled oil and remove it from the water. It rarely results in the recovery of more than ten percent of spilled oil however.[14] In-situ burning causes the oil to combust at the surface, but it exposes on-scene responders to respiratory health risks.[15] Dispersant application, whether at the surface or subsea, does not reduce the total volume of oil in the environment. Rather, it changes the oil's chemical and physical

9. *See generally* 40 C.F.R. §§ 300.900-.920.

10. *See id*. §§ 300.910-.920.

11. The comment period closed on April 22, 2015. No final rule was issued before this article's publishing. *See* National Oil and Hazardous Substances Pollution Contingency Plan, 80 Fed. Reg. 3379 (proposed Jan. 22, 2015) (to be codified at 40 C.F.R. pt. 300.900-.920) [hereinafter Proposed Rule].

12. *See id*.; *see also* Deepwater Horizon Study Group, *The Macondo Blowout Environmental Report*, Center for Catastrophic Risk Management 1, 7 (2011), http://ccrm.berkeley.edu/pdfs_papers/DHSGWorkingPapersFeb16-2011/MacondoBlowoutEnvironmentalReport-TA_DHSG-Jan2011.pdf.

13. *See* Deepwater Horizon Study Group, *supra* note 12, at 2.

14. *See id*.; *see also* Charles W. Schmidt, *Between the Devil and the Deep Blue Sea: Dispersants in the Gulf of Mexico*, 118 ENVTL HEALTH PERSP. 338, 340 (2010).

15. *See* Deepwater Horizon Study Group, *supra* note 12, at 4.

properties, emulsifying it into droplets roughly ten microns in size.[16] These droplets become entrained in the water column where they eventually undergo various natural removal processes; most commonly, marine bacteria metabolize the oil.[17] In the meantime, dispersants expose a greater expanse of the marine environment—the water column—to oil, and when trapped underwater, oil's lighter, more volatile components, including benzene, toluene, ethylbenzene, and xylene, cannot evaporate.[18] Once settled in the anoxic and nutrient-limited seafloor sediments, dispersed oil can persist for years, causing chronic biological exposures that can reduce organisms' productive and reproductive output, which can, in turn, prevent an exposed population from recovering fully for decades.[19] This Comment focuses on dispersant application, the most controversial oil spill response and the technique with the least understood consequences.[20]

When choosing which response actions to accept and which to reject, the RRT, along with the AC or OSC, must weigh the potential benefits of intervention against possible collateral harms.[21] Under this "risk-based paradigm," a term coined by the Deepwater Horizon Study Group, the benefits of using chemical dispersants include shoreline protection, surface oil volume reduction, and accelerated microbial decomposition through oil emulsification and the resultant increase in surface area.[22] On the other hand, the likely harms include facilitation

16. *See id*. at 3; *see also* Schmidt, *supra* note 14, at 340.

17. *See* Deepwater Horizon Study Group, *supra* note 12, at 2; *see also* Schmidt, *supra* note 14, at 340.

18. *See* Deepwater Horizon Study Group, *supra* note 12, at 2.

19. *See* Charles H. Peterson et al., *A Tale of Two Spills: Novel Science and Policy Implications of an Emerging New Oil Spill Model*, 62 BIOSCIENCE 461, 461 (2012) (discussing, within the context of the Deepwater Horizon event, the need to modify laws and policies designed to protect ocean resources in order to accommodate deep oil drilling).

20. *See generally* John M. Cunningham et al., *Use of Dispersants in US: Perception or Reality?*, 1991 INT'L OIL SPILL CONFERENCE PROCEEDINGS 389, 392 (1991), http://ioscproceedings.org/doi/pdf/10.7901/2169-3358-1991-1-389 (examining recent U.S. oil spills in which responders evaluated whether or not to use dispersants, which are controversial).

21. *See* Peterson, *supra* note 19, at 463.

22. *See id*. at 464; *see also* Deepwater Horizon Study Group, *supra* note 12, at 3; Schmidt, *supra* note 14, at 340. Members of the Center for Catastrophic Risk Management at the University of California, Berkeley, formed the Deepwater Horizon Study Group.

of oil transport from the surface to the seafloor, increased exposure of oil to subsurface marine life, infiltration into the food chain and biomagnification (as zooplankton can mistake dispersed oil droplets in the water column for food), widespread mortality of pelagic and benthic organisms, creation of larger dispersed oil plumes of uncertain fate and environmental impact, addition of more toxins to the sea, and elimination of any possibility for recovery of the dispersed oil.[23]

Deepwater Horizon responders faced a spill of unprecedented magnitude and depth for which they lacked relevant data to create a well-informed response plan.[24] Responders needed accurate information about the ecological and health impacts of prolonged dispersant use.[25] The EPA, though, had not amended the NCP in the sixteen years prior, failing to require improved dispersant efficacy and toxicity testing protocols.[26] Much of the data that could have helped the RRT, AC, and OSC to evaluate the ecological harms caused by their chosen methodology still remain unknown. For example, the rate at which chemically dispersed oil binds to sediments, how quickly it breaks down, how undersea organisms ingest it and take it up, what by-products result when microbes degrade it, and whether the combination of a dispersant and oil may be more toxic to marine life than oil alone all remain unknown.[27] Responders also lacked, and still lack, information about potentially adverse health effects caused by dispersant use,[28] because it is difficult to separate the symptoms of oil exposure from those associated with

23. *See* Peterson, *supra* note 19, at 464; *see also* Deepwater Horizon Study Group, *supra* note 12, at 3; Schmidt, *supra* note 14, at 340.

24. *See* Peterson, *supra* note 19, at 462; *see also* Schmidt, *supra* note 14, at 340.

25. *See* Schmidt, *supra* note 14, at 340.

26. *See generally* National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. §§ 300.1-.901. (1994).

27. *See generally* Roberto Rico-Martinez et al., *Synergistic toxicity of Macondo crude oil and dispersant Corexit 9500A® to the Brachionis plicatilis species complex (Rotifera)*, 173 ENVTL. POLLUTION 5 (2013) (finding that when oil mixes with Corexit 9500A®, toxicity to *B. manjavacas* increases up to 52-fold, thus suggesting the toxicity from Corexit application was underestimated in the case of the Deepwater Horizon event); *see also* Schmidt, *supra* note 14, at 341.

28. *See generally* Gina M. Solomon, MD, MPH & Sarah Janssen, MD, PhD, MPH, *Health Effects of the Gulf Oil Spill*, 304 J. AM. MED. ASS'N. 1118 (2010) (using the Deepwater Horizon event to discuss the direct threats to human health from inhalation or dermal contact with oil and dispersant chemicals and the indirect threats to seafood safety and mental health).

dispersant exposure.[29] Responders did know, however, that dispersant exposure might enable oil to more easily penetrate the skin.[30]

Despite these unknowns, when evaluating the known trade-offs, the OSC—the United States Coast Guard in this instance (the Federal On Scene Coordinator or FOSC)—decided to include dispersant application in the early stages of the response plan.[31] Responders applied approximately one million gallons of dispersants to surface slicks and approximately three quarters of a million gallons, for the first time, subsea.[32] This use of dispersants raised many questions about the sufficiency of the information Subpart J requires the RRT, AC, and OSC to receive.[33]

To address this concern, the proposed revisions to Subpart J include new dispersant testing and listing requirements. Specifically, the EPA proposes to "[r]evise the efficacy testing methodology using a baffled flask test [(BFT)], establish new developmental and sub-chronic toxicity testing requirements, revise the acute toxicity testing methodologies, revise the listing criteria, and establish use limitations to saltwater environments."[34] This Paper comments on the reasonableness of the EPA's proposed amendments and, moreover, suggests that, in light of the NCP's mandate in Subpart D to apply a response methodology "most consistent with protecting public health and welfare and the environment,"[35] responders should authorize the use of dispersants only as a last resort, at least until the effects of dispersants are better understood.

II. BACKGROUND OF THE NCP PRODUCT SCHEDULE

The NCP establishes national response capabilities and promotes coordination among a hierarchy of responders and contingency plans for oil spills and hazardous substance

29. *See* Schmidt, *supra* note 14, at 342.

30. *See id*. at 324-25.

31. *See Revisions Needed*, *supra* note 3, at 4, 8.

32. Proposed Rule, *supra* note 11, at 3381.

33. *See generally Revisions Needed*, *supra* note 3 (commenting on the need for new testing procedures and response protocols in light of the Deepwater Horizon event).

34. Proposed Rule, *supra* note 11, at 3381.

35. National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300.310(b) (1994), *amended by* 33 U.S.C. § 1321 (2000)).

releases.[36] Either the Council on Environmental Quality (CEQ) or the EPA has modified the NCP in keeping with environmental disasters and legislative advancements.

In 1968, the oil tanker Torrey Canyon spilled more than thirty-seven million gallons of crude oil off the coast of England.[37] To prevent similar environmental damage from affecting the waters of the United States and to avoid repeating the operational mistakes that had occurred in England, the CEQ published the National Oil and Hazardous Materials Pollution Contingency Plan shortly thereafter.[38] This 1970 plan established a comprehensive system of spill containment and cleanup practices, favoring mechanical and other physical control measures over chemical technologies.[39] It permitted the use of dispersants only when other methods were deemed inadequate or infeasible and requirements for listing on the Product Schedule had been met.[40] The Product Schedule, Annex X–Schedule of Dispersants and other Chemicals to Treat Oil Spills, restricted dispersants from use in certain waters, such as those where the winds or currents would likely bring the dispersed oil mixtures to shorelines within twenty-four hours or those with major populations of fish or marine species.[41]

The CEQ renamed the plan the National Oil and Hazardous Substances Pollution Contingency Plan in 1971 and made other minor changes in 1972.[42]

The CEQ revised the NCP in 1973 as a result of the newly crafted Federal Water Pollution Control Act of 1972, more

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36. *See* Federal Water Pollution Control Act § 311(d)(2)(G), 33 U.S.C. § 1321(d)(2) (2014); *see also* 40 C.F.R. §§ 300.1-.901.

37. *See National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Overview,* U.S. EPA (Nov. 20, 2014), http://www2.epa.gov/emergency-response/national-oil-and-hazardous-substances-pollution-contingency-plan-ncp-overview [hereinafter *Overview*].

38. *Id.*; *See* National Oil and Hazardous Materials Pollution Contingency Plan, 35 Fed. Reg. 8508 (finalized June 2, 1970).

39. *See* 35 Fed. Reg. 8508.

40. *See id.*

41. *See* Proposed Rule, *supra* note 11, at 3382.

42. *See* National Oil and Hazardous Substances Pollution Contingency Plan, 36 Fed. Reg. 16215 (1971); *see also* National Oil and Hazardous Substances Pollution Contingency Plan, 36 Fed. Reg. 18411 (1972); National Oil and Hazardous Substances Pollution Contingency Plan, 37 Fed. Reg. 28208 (1972).

commonly known as the Clean Water Act (CWA).[43] Through Annex X, the CEQ, while still advocating the use of mechanical and other control measures, increased its tolerance of the use of dispersants.[44]

In 1975, the CEQ continued to advocate "the development and utilization of mechanical control methods to remove or mitigate oil," while providing procedures for authorization of the use of dispersants or other chemical agents in Annex X.[45] For listing on the Product Schedule, a dispersant manufacturer needed to submit the dispersant's shelf life, toxicity, and effectiveness.[46]

In response to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, the EPA amended the NCP in 1982.[47] Annex X became Subpart H of the revised NCP.[48] Subpart H granted OSCs the ability to authorize the use of listed dispersants to treat oil spills.[49] The EPA Administrator then gained the authority to permit the use of non-listed dispersants.[50]

The EPA amended Subpart H in 1984.[51] One change increased the OSC's authority, permitting the OSC to authorize the use of any product, including chemical agents not on the Schedule, when the OSC concluded that a product's use was necessary to prevent or substantially reduce hazard to human life.[52] The EPA also updated the testing and data requirements for listing on the Product Schedule and created a disclaimer, announcing that the listing of a product on the Schedule served as a confirmation that the listing criteria had

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43. *See* Federal Water Pollution Control Act of 1972, 33 U.S.C. § 1321(d). (1972); *see also* National Oil and Hazardous Substances Pollution Contingency Plan, 38 Fed. Reg. 21887 (1973).

44. *See* 38 Fed. Reg. 21887; *see* Proposed Rule, *supra* note 11, at 3382.

45. National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 1510 (1975) (regarding 40 Fed. Reg. 6282 (1975)).

46. *See id*.

47. *See* National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300 (1982) (regarding 47 Fed. Reg. 31180); *see also Overview*, *supra* note 37.

48. *See* 40 C.F.R. § 300; *see also* Proposed Rule, *supra* note 11, at 3383.

49. *See* 40 C.F.R. § 300.

50. *Id*.

51. *See id*. (regarding 49 Fed. Reg. 29192 (1984)).

52. *See id*.

been met, not as a recommendation for the use of that product.[53]

Responding to the Superfund Amendments and Reauthorization Act (SARA), the EPA made minor changes to the NCP in 1990, reformulating Subpart H as Subpart J–Use of Dispersants and Other Chemicals.[54]

Most recently, prompted by the Oil Pollution Act of 1990 (OPA), the EPA revised the NCP in 1994.[55] "The final rule significantly revised Subpart J to current regulatory requirements with respect to authorization of use, data requirements, dispersant effectiveness and toxicity testing protocols, [etc.]."[56] For the last twenty-one years, the EPA has not proposed any amendments to the NCP, until recently, when it partially responded to "*the political and social nullification of the NCP [that took place] during the Deepwater Horizon response*" by suggesting modifications to Subpart J.[57]

III. THE CURRENT RULE: SUBPART J OF THE 1994 NCP

By design, listing on the Product Schedule and the judgment of the RRT, AC, OSC, and RP determine which dispersants, if any, will be used to combat an oil spill.[58]

A. The EPA Sets Forth Twelve Criteria in Subpart J that a Submitter Must Complete in Order for the EPA to List a Dispersant on the Product Schedule

Subpart J details twelve requirements for listing on the Product Schedule: providing the dispersant name, brand, or trademark, if any; manufacturer, importer, or vendor contact information; distributor contact information; shelf life; handling and worker precautions for storage and field

53. *See id*.

54. *See* C.F.R. § 300 (1990) (regarding 55 FR 8666 (1990)); *see also* National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. §§ 300.900-.920 (1994), *amended by* 33 U.S.C. § 1321 (2000)).

55. 40 C.F.R. §§ 300.900-.920.

56. *See* Proposed Rule, *supra* note 11, at 3383.

57. *See* U.S.C.G., NATIONAL INCIDENT COMMANDER'S REPORT: MC252 DEEPWATER HORIZON, 1, 4 (2010), http://www.nrt.org/production/NRT/NRTWeb.nsf/AllAttachments ByTitle/SA-1065NICReport (emphasis in original) [hereinafter INCIDENT REPORT]; *see also* 40 C.F.R. §§ 300.900-.920; *see also* Proposed Rule, *supra* note 11.

58. *See* 40 C.F.R. §§ 300.910-915.

application; recommended application procedures, concentrations, and conditions; concentrations and upper limits of heavy metals, cyanide, and chlorinated hydrocarbons; contact information and qualifications of the testing laboratory; documentation of adherence to the 1991 or 1992 Annual Books of American Society for Testing and Materials standards; effectiveness results; toxicity results; and the chemical agent components.[59] The EPA will list any product whose submission packet meets these criteria, only reviewing a submission for completeness and not independently confirming test results.[60]

The last three criteria—providing a dispersant's efficacy, toxicity, and chemical components—are especially controversial and also important for the RRT and AC or OSC to know during the risk evaluation. Therefore, this Comment discusses these three criteria further here.

1. 1994 Effectiveness Testing

Under the 1994 NCP, effectiveness testing requires a dispersant manufacturer to perform a Swirling Flask Test (SFT).[61] For listing, a dispersant needs to attain an average effectiveness value of only forty-five percent (dispersing forty-five percent of the oil) when mixed with only two types of oil—Prudhoe Bay Crude and South Louisiana Crude—and saltwater at room temperature (twenty to twenty-three degrees Celsius).[62]

2. 1994 Toxicity Testing

Toxicity testing requires a dispersant manufacturer to determine the product's acute (short-term) toxicity by exposing the product to only two saltwater species, the inland silverside fish (*Menidia beryllina*) and the mysid shrimp (*Americamysis bahia*).[63] Manufacturers expose these two species to five concentrations of the product and also to one type of oil (No. 2

59. *See id.* § 300.915(a)(1)-(12).

60. *See Revisions Needed*, *supra* note 3, at 3; *see also* Cunningham, *supra* note 29, at 390.

61. *See* 40 C.F.R. § 300.915(a)(7).

62. *See id.* § 300 app. C.

63. *See id.* § 300.915(a)(8) app. C.

Fuel Oil), alone and in a 1:10 mixture of product to oil, for ninety-six hours and forty-eight hours, respectively.[64] At the end of this exposure period, a manufacturer calculates the concentration of product causing fifty percent lethality (LC_{50}) to the two test organisms and reports this number to the EPA.[65]

3. 1994 Confidential Business Information

Subpart J asks a manufacturer to "[i]temize by chemical name and percentage by weight each component of the total formulation";[66] however, manufacturers may assert claims of confidential business information (CBI), refusing to make this information public.[67] "Typically, manufacturers claim as CBI the chemical identity (e.g., chemical name and chemical abstracts number [CAS]) and concentration (weight percent) of each chemical component in the product along with information about the concentrations of those components in the product . . .."[68]

B. The OSC, RRT, and AC Determine Whether Responders Will Apply Dispersants During an Oil Spill Response

Through Subpart J of the 1994 NCP, the EPA welcomes the use of dispersants as an oil spill control measure.[69] Subpart J encourages RRTs and ACs to develop preauthorization plans, authorizing the use of certain listed dispersants in advance of an oil spill.[70] For spill situations not addressed by a preauthorization plan, Subpart J permits the OSC to authorize the use of listed dispersants or other chemical agents on an oil discharge.[71] The OSC may also authorize the use of any dispersant or other chemical agent not listed on the Product Schedule without obtaining concurrences from the EPA representative to the RRT or from the affected states'

64. *See id.* § 300 app. C.
65. *See id.*
66. *See* 40 C.F.R. § 300.915(a)(10).
67. *See* Proposed Rule, *supra* note 11, at 3413.
68. *See id.*
69. *See generally* 40 C.F.R. § 300.910.
70. *See id.* § 300.910(a).
71. *See id.* § 300.910(b).

representatives to the RRT if the OSC judges that the use of the product is necessary to prevent or substantially reduce a hazard to human life.[72]

The OSC, in coordination with the RRT and AC, will authorize the chosen response protocol, deciding between mechanical collection, in-situ burning, dispersant or other chemical agent application, or a combination of methods.[73] According to the EPA Office of Inspector General, "[t]he decision to use dispersants involves tradeoffs between decreasing risks to water surface and shoreline habitats, and increasing potential risks to organisms in the water column and on the sea floor."[74] If the RRT and AC or OSC authorize(s) the use of dispersants on an oil spill, practical considerations, such as product availability, weather conditions, oil type, and the discharge situation will influence which specific product the RP applies.[75]

IV. DISPERSANT APPLICATION DURING THE DEEPWATER HORIZON OIL SPILL

On April 20, 2010, ignited gases from API Well No. 60–817–44169 (the Macondo well) caused the Deepwater Horizon mobile offshore drilling unit, owned and managed by Transocean and contracted by BP p.l.c., to explode and catch fire forty-two miles off the coast of Louisiana.[76] An estimated four million barrels of oil spilled into the Gulf of Mexico over the next eighty-seven days, until BP sealed the Macondo well on July 15, 2010.[77] Response technologies included containment and recovery methods, such as the use of absorbent booms, skimmers, and oil-water separators; in-situ burning; and the application of chemical dispersants.[78]

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72. *See id*. § 300.910(d).

73. *See id*. § 300.910; *see also* Proposed Rule, *supra* note 11, at 3384.

74. *Revisions Needed*, *supra* note 3, at 3.

75. *See* Proposed Rule, *supra* note 11, at 3395.

76. *See Revisions Needed*, *supra* note 3, at 4; *see also* Deepwater Horizon Study Group, *supra* note 12, at 2; Schmidt, *supra* note 14, at 339.

77. *See In re Oil Spill by Oil Rig Deepwater Horizon in Gulf of Mexico, on Apr. 20, 2010*, No. MDL 2179, 2015 WL 225421, at *22 (E.D. La. Jan. 15, 2015) (finding four million barrels of oil released from the reservoir in the Gulf of Mexico during the Deepwater Horizon event); *see also* Deepwater Horizon Study Group, *supra* note 12, at 2.

78. *See* Deepwater Horizon Study Group, *supra* note 12, at 7-8.

The FOSC ordered responders to apply dispersants at the surface two days after the explosion and directly at the wellhead—an unprecedented decision—eight days after that.[79] "Approximately one million gallons of dispersants over a three month period were deployed on surface slicks over thousands of square miles of the Gulf, and approximately three quarters of a million gallons of dispersants were, for the first time, injected directly into the oil gushing from the well riser."[80]

Responders used Corexit EC9527A® and then Corexit EC9500A® when stockpiles of the first diminished.[81] The Material Safety Data Sheet (MSDS) for Corexit EC9527A, which was listed on the Product Schedule in 1978, indicates that it contains the solvent 2-butoxyethanol, which may cause skin or gastrointestinal irritation, hemolysis, or kidney or liver damage.[82] Corexit EC9500A, which was listed on the Product Schedule in 1994, contains petroleum distillates akin to kerosene instead of 2-butoxyethanol.[83] Both products used organic sulfonic acid salt for the surfactant and propylene glycol as the stabilizer.[84] The Product Schedule indicated that Corexit EC9527A had efficacy results averaging 50.4 percent, and Corexit EC9500A's averaged results equaled fifty percent.[85] Corexit EC9527A®'s toxicity results showed that it had a LC_{50} of 14.57 parts per million (ppm) for *Menidia beryllina* and 24.14 for *Americamysis bahia.* When mixed with No. 2 Fuel Oil, the toxicity levels lowered to 4.49 ppm for *Menidia beryllina* and 6.60 ppm for *Americamysis bahia.*[86] Corexit EC9500A presented with a LC_{50} toxicity to *Menidia beryllina* of 25.20 ppm and 32.23 ppm to *Americamysis bahia.* When mixed with No. 2 Fuel Oil, the toxicity to *Menidia beryllina* was 2.61 ppm and 3.40 ppm to *Americamysis bahia.*[87]

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79. *See Revisions Needed*, *supra* note 3, at 4; *see also* Schmidt, *supra* note 14, at 340.

80. Proposed Rule, *supra* note 11, at 3381.

81. *See Revisions Needed*, *supra* note 3, at 4, 8.

82. *See* Schmidt, *supra* note 14, at 342; *see also* BP, *Regional Oil Spill Response Plan* 019560 (2009), http://housedocs.house.gov/energycommerce./Docs_06152010/BP.Oil.Spill.Response.Plan.pdf.

83. *See id.*

84. *See id.*

85. *See Revisions Needed*, *supra* note 3, at 8.

86. *See Emergency Response: Corexit EC9527A*, U.S. EPA (Dec. 31, 2014), http://www2.epa.gov/emergency-response/corexitr-ec9527a.

87. *See Emergency Response: Corexit EC9500A*, U.S. EPA (Dec. 31, 2014),

Practical considerations influenced the decision to use the Corexit products specifically. The Region 6 preauthorization plan was out of date at the time of the spill, as the RRT and AC had not updated it to reflect deepwater drilling trends or lessons learned during a 2002 Spill of National Significance exercise.[88] The preauthorization plan also lacked stringency and specificity, allowing the OSC to authorize the use of any dispersant listed on the Product Schedule that the OSC considered appropriate.[89] The EPA and the FOSC therefore placed the decision in BP's hands, requiring it, as the RP, to identify an appropriate dispersant.[90] BP requested to use the Corexit product, for which its Gulf of Mexico Regional Oil Spill Plan expressed a preference.[91] After conducting additional toxicity testing,[92] and in response to concerns, the EPA and the FOSC shortly thereafter issued a second addendum to a Joint Directive, requiring BP to select and apply a less toxic but equally effective product within twenty-four hours.[93] BP responded that Corexit was the only product available in sufficient quantities within the imposed twenty-four hour window, so a change in product did not take place.[94]

V. PROPOSED AMENDMENTS TO NCP SUBPART J

In keeping with the Schedule's history of modification after an environmental disaster, the EPA proposed amendments to Subpart J of the NCP in order to incorporate lessons learned from the Deepwater Horizon oil spill response.[95] The EPA seeks to redefine dispersants as "typically mixtures of solvents,

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http://www2.epa.gov/emergency-response/corexitr-ec9500a.

88. *See Revisions Needed*, *supra* note 3, at 14.

89. *See* REGIONAL RESPONSE TEAM VI, FOSC DISPERSANT PRE-APPROVAL GUIDELINES AND CHECKLIST 1 (2001), http://www.glo.texas.gov/ost/spill-response-resources/rrtvi/rrt6.pdf.

90. *See Revisions Needed*, *supra* note 3, at 13.

91. *See* BP, *supra* note 82, at 019560.

92. *See* Kilduff, *infra* note 147, at 394. In August, after BP capped the Macondo well, the EPA conducted a second round of toxicity testing. *See* U.S. EPA OIG, *supra* note 3, at 5.

93. *See* U.S. EPA, DISPERSANT MONITORING AND ASSESSMENT DIRECTIVE add. 2 (May 20, 2010), *available at* http://www.epa.gov/bpspill/dispersants/directive-addendum2.pdf.

94. *See Revisions Needed*, *supra* note 3, at 13.

95. *See* Proposed Rule, *supra* note 11, at 3381.

surfactants, and additives that promote the formation of small droplets of oil in the water column by reducing the oil-water interfacial tension" and to make other changes affecting a product's eligibility for listing and authorization of use.[96]

This Paper comments on the Agency's proposals for the following revised sections of Subpart J: section 300.915, which details data and information requirements for listing on the Product Schedule, focusing here on efficacy and toxicity testing; proposed section 300.950, newly limiting the submission of CBI claims; proposed section 300.970, which newly provides grounds for the removal of a product from the Schedule; and section 300.910, addressing the authorization of an agent for use in response to a spill.[97]

A. The EPA's Proposed Requirements for Listing Under Section 300.915 May Still Not Provide the OSC, RRT, and AC with Sufficient Information

In proposed section 300.915, the EPA seeks to increase the criteria for listing outlined in Subpart J from twelve to twenty-one.[98] While the EPA's amendments modernize the efficacy and toxicity testing protocols, the EPA could still strengthen these listing criteria so as to provide responders with the best information possible when weighing the environmental and health tradeoffs associated with the application of dispersants.

1. 2015 Effectiveness Testing

In its January 2015 proposed amendments, the EPA suggests changing the effectiveness testing method.[99] First, the

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96. *Id*. at 3422.

97. *See id*. at 3422-3427.

98. *See id*. at 3424-25 (regarding section 300.915). One of these proposals—the requirement that manufacturers provide the estimated annual dispersant production volume, the average and maximum daily production volumes, and the timeframe needed to meet that maximum volume—will help to ensure responders do not sacrifice environmental and health concerns as a result of production limitations. *See id*. at 3425; *see generally Response to Corrective Action Plan for OIG Report No. 11-P-0534, Revisions Needed to National Contingency Plan Based on Deepwater Horizon Oil Spill, August 25, 2011*, U.S. EPA OIG (2012), http://www.epa.gov/oig/reports/2013/11-P-0534_IG_Comment_on_Response_(OSWER-2nd).pdf (acknowledging in memorandum form U.S. EPA OSWER's recommendations for amending the NCP in light of the Deepwater Horizon event) [hereinafter *Response to Corrective Action Plan*].

99. *See* Proposed Rule, *supra* note 11, at 3403.

EPA proposes switching from the SFT to the BFT.[100] Second, the EPA proposes that manufacturers use Alaska North Slope and Intermediate Fuel Oil as the test oils instead of Prudhoe Bay Crude and South Louisiana Crude.[101] Third, the Agency suggests that a manufacturer must test the product's effectiveness at two temperatures, five degrees Celsius and twenty-five degrees Celsius, to reflect surface and subsea temperatures.[102] Fourth, the EPA proposes increasing the efficacy value required for listing such that a dispersant would need to demonstrate that the lower ninety-five percent confidence level (LCL_{95}) of six replicate flasks meets the following criteria: at five degrees Celsius, a product must disperse at least seventy percent of Alaska North Slope and at least fifty-five percent of Intermediate Fuel Oil and at twenty-five degrees Celsius, a product must disperse at least seventy-five percent of Alaska North Slope and least sixty-five percent of Intermediate Fuel Oil.[103] If a dispersant could not demonstrate for each oil and temperature at the LCL_{95} effectiveness values greater than or equal to these percentages, the EPA would not list the product on the Schedule.[104]

Addressing these proposals in turn, first, the change from the SFT to the BFT is overdue. The EPA discovered over a decade ago that the SFT was susceptible to human error and identified the BFT—a more reproducible testing procedure—as "the most appropriate efficacy testing protocol."[105] The EPA should also develop an action plan for more quickly incorporating future scientific advancements into the NCP and regional preauthorization plans.[106]

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100. *See id.*

101. *See id.*

102. *See id.*

103. *See id.*

104. *See id.* at 3425 (regarding section 300.915).

105. Competing priorities and changes in management, however, prevented the EPA from revising Subpart J to reflect this scientific understanding before the Deepwater Horizon oil spill. *See Revisions Needed*, *supra* note 3, at 8;.*see also* Albert D. Venosa & Edith Holder, *Laboratory–Scale Testing of Dispersant Effectiveness of 20 Oils Using the Baffled Flask Test*, U.S. EPA 1, 1 (2011), http://www.bsee.gov/Technology-and-Research/Oil-Spill-Response-Research/Reports/600-699/666AA/ (supporting the superiority of the BFT).

106. *See Revisions Needed*, *supra* note 3, at 11.

Second, while Alaska North Slope and Intermediate Fuel Oil represent a wider range of characteristics than the current test oils, the RRT and AC or OSC should mandate that the RP must test the efficacy of the particular dispersant it has identified for use on a spill with regards to the specific oil spilled before authorizing its use. Otherwise, the efficacy testing results have only a general meaning from which responders must extrapolate when assessing potential harms.

Third, by requiring testing at both surface and subsea temperatures, the efficacy testing data provided to the RRT and AC or OSC will be more informative. Prior to authorizing the use of a particular dispersant, however, at the time of the spill, the RRT and AC or OSC should require the RP to test some dispersants' efficacy under actual field conditions, including using accurate saline, nutrient load, and temperature measurements, in order to determine the most effective product for that spill.

Further, the EPA should require a manufacturer to test a product's efficacy in shallow or shoreline waters, which are often less saline. The initial Schedule disallowed the use of dispersants along shorelines or in waters less than one hundred feet deep, "except when used to prevent or substantially reduce the hazard to human life or limb."[107] But here, where the EPA leaves open the potentiality for the authorization of the use of dispersants in shallow or shoreline waters, prior testing should at least reflect those conditions so that the RRT, AC, and OSC may properly understand the trade-offs at issue.

Fourth, the EPA should provide greater justification for why it will accept an efficacy of only fifty-five percent for Intermediate Fuel Oil at five degrees Celsius. This threshold value, lower than the others the EPA proposes, represents an increase of only ten percentage points from the threshold value required by the 1994 Subpart J.

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107. National Oil and Hazardous Materials Pollution Contingency Plan, 35 Fed. Reg. 8508 (1970).

2. 2015 Toxicity Testing

The EPA also recommends revising the dispersant toxicity testing procedure.[108] First, the EPA proposes amending Subpart J to require submitters to use Alaska North Slope and Intermediate Fuel Oil as the test oils for acute toxicity testing, instead of the currently used No. 2 Fuel Oil.[109] The test species will continue to be *Menidia beryllina* and *Americamysis bahia.*[110] Second, the EPA proposes to conduct the oil-only acute toxicity test for the two test oils, rather than requiring the dispersant submitters to provide this data. Third, the EPA suggests implementing a threshold for the lethal concentration: the lower bound of the LC_{50} ninety-five percent confidence interval greater than or equal to ten ppm.[111] Under this scheme, "LC_{50} values ranging from 10 ppm to 100 ppm are classified as slightly toxic[,] and above 100 ppm[,] substances are considered acutely nontoxic to aquatic organisms."[112] Fourth, the EPA proposes to require both a sea urchin development assay to assess the adverse effects of a dispersant product on the development processes of fish and invertebrates and a sub-chronic assay performed on *Menidia beryllina* and *Americamysis bahia* for seven days to estimate chronic toxicity.[113] Both of these tests would also have assigned threshold values.[114]

Again taking these proposals in turn, first, the EPA reasonably switches to Alaska North Slope and Intermediate Fuel Oil because these oils exhibit a wider range of characteristics than No. 2 Fuel Oil.[115] This change would also make the toxicity testing procedure congruous with the dispersant testing procedure.[116] As stated earlier, however, the EPA should mandate that the RP test the toxicity of dispersant it has identified for use on a spill with regards to the specific

108. *See* Proposed Rule, *supra* note 11, at 3404.
109. *See id.*
110. *See id.* at 3425 (regarding section 300.915).
111. *See id.* at 3404-05.
112. *See id.* at 3405.
113. *See* Proposed Rule, *supra* note 11, at 3405.
114. *See id.*
115. *See id.* at 3404.
116. *See id.* at 3403-04.

oil spilled and under realistic conditions before the RRT and AC or OSC authorize that dispersant's use. Otherwise, the toxicity testing results have little meaning to the responder weighing the potential harms of use versus non-use.[117]

Similarly, instead of requiring a dispersant product's toxicity to be evaluated with regards to only two saltwater species, the EPA should consider requiring testing against more species. The Agency could mandate that before authorization of a dispersant occurs, the RP must test that dispersant on geographically and ecologically representative species, including pelagic and benthic species affected by subsea dispersant application, because LC_{50} values for dispersants and dispersed oil-water mixtures vary widely among different species.[118] The EPA could also consider requiring RPs to evaluate a product's toxicity to metabolizing bacteria and ecologically or economically important species of concern.[119]

Second, the EPA's decision to conduct the oil-only acute toxicity tests itself and to publish the results intends to reduce manufacturers' testing costs.[120] Unless one of these two oils is spilled, however, this oil-only information will not provide much use to the public or response teams. Also, having the Agency conduct the oil-only tests may create a missed opportunity for detecting anomalies in manufacturers' submitted data.[121] Instead, before authorizing the shipment or production of oil in waters of the United States, the NCP could require the owner of the oil to test that oil's toxicity on organisms representative of the ecosystems through which the oil will pass. This way, when a spill occurs, responders will

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117. *See generally Response to Corrective Action Plan, supra* note 98 (responding to the U.S. EPA OSWER's recommendations to improve the NCP).

118. Schmidt, *supra* note 14, at 343. The EPA expresses concern with placing the costs of developing and performing these tests on the dispersant manufacturer instead of the end-user, but the manufacturer can compensate for these additional costs by raising the sale price. *See* Proposed Rule, *supra* note 11, at 3406.

119. *See* Petition for Rulemaking Under the Clean Water Act, 33 U.S.C. § 1321(d)(2)(G) and the Administrative Procedures Act Title 5. Sec. 553(e) to Amend National Contingency Plan (NCP) Product Schedule (November 14, 2014), http://www.rikiott.com/dispersants/peoples-petition-to-ban-dispersants/

[hereinafter *Petition*].

120. *See* Proposed Rule, *supra* note 11, at 3406.

121. *See id*. at 3405.

have accurate and timely oil-only toxicity information for use in the risk/benefit assessment.

Third, the EPA provides a rational explanation for its suggested threshold values.[122] It recommends the lower bound of the confidence interval (CI), recognizing the following:

> [T]he CI should not contain any values less than or equal to 10 ppm since theoretically, the LC_{50} can fall anywhere within the CI. By using the lower CI, the Agency [provides] a conservative decision criterion for acute toxicity, and by proposing a greater than or equal to 10 ppm threshold level, it [establishes] an adequate safety margin without being overly restrictive.[123]

Fourth, based on the critical need identified during the Deepwater Horizon event to understand potential adverse developmental and long-term effects of oil dispersants on fish and invertebrate species,[124] the EPA reasonably adds embryogenesis and sub-chronic assays to the listing criteria. Rather than exposing test species to sustained concentrations, in order to better mimic the effects of tidal cycles, the EPA should consider requiring "spiked/declining" chronic exposure tests.[125] Also, although the EPA suggests testing the dispersant alone and the dispersant mixed with each of the two test oils when determining acute toxicity, the EPA only suggests testing the dispersant alone when determining developmental toxicity and sub-chronic effects. The Agency should explain why a manufacturer need not perform these tests on the mixed solution of dispersant and saltwater, especially when literature suggests the combination may be more lethal than either alone.[126]

Lastly, the CWA, as amended by the OPA, dictates that the NCP must include a Product Schedule that identifies the quantities of dispersant product that can be used safely in waters of the United States.[127] Under section 300.910(a)(1),

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122. *See id.*

123. *See id.*

124. *See id.*

125. *See* Schmidt, *supra* note 14, at 343.

126. *See generally* Rico-Martinez, *supra* note 27 (suggesting based on research that Corexit combined with oil increases the toxicity).

127. *See* Federal Water Pollution Control Act § 311(d)(2)(G), 33 U.S.C. § 1321(d)(2)(G)(iii) (2014).

preauthorization plans must limit the quantity of product that responders can apply to spilled oil.[128] Because no such requirement exists when a preauthorization plan is not in place, in keeping with CWA, the EPA should add another criterion to section 300.915, requiring manufacturers to suggest a safe quantity of product that responders can apply to a given area over a certain period of time.[129]

B. The EPA's Newly Proposed Section 300.950 Limits CBI Claims for the Public's Benefit

Recognizing after the Deepwater Horizon event that the public has a right to know about chemicals discharged into the environment, the EPA proposes limitations to a manufacturer's ability to make a CBI claim in its submission package.[130] Under section 300.950 of the Agency's proposed amendments, a manufacturer may only claim concentrations of chemical components, microbiological cultures, enzymes, or nutrients; otherwise, the EPA will not list the dispersant on the Product Schedule.[131] The Agency will make all other information public.[132]

Because certain chemicals are more toxic to the environment than others, the EPA could consider identifying certain chemical components for which the public has a right to know the concentrations, rather than allowing manufacturers to avoid detailing the concentrations of every chemical used. This trade-off would provide the public with greater information while still enabling manufacturers to protect their trade secrets.

128. *See* Proposed Rule, *supra* note 11, at 3422 (regarding section 300.910).

129. *See* 33 U.S.C. § 1321(d)(2)(G)(iii); *see also* Proposed Rule, *supra* note 11, at 3424 (regarding section 300.915).

130. *See* Proposed Rule, *supra* note 11, at 3413.

131. *See id.* at 3413, 3426 (regarding section 300.950).

132. *See id.*

C. Under Newly Proposed Section 300.970, the EPA Strengthens the Relevance of the Product Schedule by Providing for the Removal of Dispersants

The EPA proposes adding a section for removing products from the Schedule, section 300.970.[133] This proposed section identifies the following examples as causes for removal: misleading or inaccurate statements regarding the composition or use of the product to remove or control oil discharges, alterations to the product without proper notification, failure to publish the disclaimer that the EPA does not endorse the product, or the discovery of information concerning potentially adverse effects of the product to human health or the environment.[134] The proposed section does not limit the EPA to these causes, provided the Agency notifies the manufacturer of its reasons for removing the product and allows for an appeal.[135]

The EPA should also consider adding a provision explicitly permitting the public to petition for the removal of dispersants despite any time restrictions.[136] For example, if a product fails to perform in the field, or creates greater health risks to humans or the environment than anticipated, removal from the Product Schedule may eventually be proper.[137]

D. The EPA Clarifies the Requirements for Authorizing an Agent for Use in Response to a Spill Under Section 300.910 But Could Make This Section Stricter

The EPA suggests amending section 300.910, which details the requirements for the authorization of a product for use on an oil spill.[138] Specifically, the EPA seeks to revise paragraphs

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133. *See id.* at 3427 (regarding section 300.970).

134. *See id*. at 3416.

135. *See* Proposed Rule, *supra* note 11, at 3427 (regarding section 300.970).

136. *See generally Alaska Cmty. Action on Toxics et al. v. U.S. Envtl. Prot. Agency et al. and American Petroleum Inst*., 943 F. Supp. 2d 96 (D.D.C. 2013), *appeal dismissed*, No. 13-5209, 2014 WL 2178666 (D.C. Cir. Apr. 30, 2014) (holding petitioners' allegations that the EPA has failed to meet its requirements under the Clean Water Act with regards to Subpart J of the NCP time-barred in light of jurisdictional requirement 28 U.S.C. § 2401(a)).

137. *See Petition*, *supra* note 119.

138. *See* Proposed Rule, *supra* note 11, at 3422 (regarding section 300.910).

(a) through (f) and to add paragraphs (g), (h), and (i).[139] Many of these proposed changes clarify the intent of the 1994 Subpart J,[140] but a few substantive changes warrant discussion here.

For example, the EPA proposes to remove the qualifier "when developing preauthorization plans" from section 300.910(f) (section 300.910(g) in the proposed January 2015 version), thereby clarifying that RRTs have the authority to require supplementary efficacy and toxicity testing at any time.[141] This provision, though clearer, is still discretionary. The EPA should instead consider requiring RRTs and ACs to order supplementary testing before the OSC authorizes a RP to use a particular dispersant, unless relevant, incident-specific data already exists.

The Agency also proposes to mandate that RRTs and/or ACs must review, and revise as needed, preauthorization plans at least every five years or after a major spill.[142] This review requirement "intends to ensure that preauthorization plans are actively maintained and updated to reflect revisions to the Schedule."[143] In light of the political delay that kept the Agency from requiring the BFT prior to the Deepwater Horizon event, the EPA should consider adding "major technological or scientific advancements for oil recovery or dispersion" as another prong triggering the review/revision requirement.

Lastly, section 300.910(e) of the 1994 Subpart J prohibits the use of sinking agents.[144] Proposed section 300.910(e), on the other hand, crafts an exception, permitting the use of sinking agents when the OSC judges it necessary.[145] This change begs the question whether dispersants applied subsea have the same effect as sinking agents, and if so, whether their subsea use is proper without the requirement that responders

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139. *See id.* at 3387.

140. *See id.* at 3387-89.

141. *Id.* at 3393.

142. *See id.* at 3423 (regarding section 300.910).

143. Proposed Rule, *supra* note 11, at 3389.

144. *See* National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300.910(e) (1994), *amended by* 33 U.S.C. § 1321 (2000).

145. *See* Proposed Rule, *supra* note 11, at 3423 (regarding section 300.910).

first exhaust all other options for recovery.[146] Because the international petroleum industry has directed its marine exploration and oil production activities to deep (i.e., greater than 305 meters) and ultra-deep (i.e., greater than 500 meters) fields in the Gulf of Mexico,[147] urgency exists to ensure that the NCP properly accounts for these deep-drilling activities that will likely require a subsea response.[148]

VI. CONCLUSION

Subpart D of the NCP, which the January 2015 proposed amendments would leave intact, explains the operational procedures for removing oil.[149] It announces that response actions may include, but are not limited to, source and spread control or salvage operations, placement of physical barriers to deter the spread of the oil, and the use of chemicals and other materials in accordance with Subpart J.[150] It commands that "[o]f the numerous chemical or physical methods that may be used, the chosen methods shall be the most consistent with protecting public health and welfare and the environment."[151] The EPA should therefore consider adding a provision to Subpart J that states a preference for containment and recovery technologies over in-situ burning and chemical dispersant application.[152] These physical technologies remove oil, do not increase toxicity, and do not prolong the exposure of crude oil to the marine environment,[153] whereas in-situ burning exposes responders to grave health risks,[154] and

146. *See* Catherine Kilduff and Jaclyn Lopez, *Dispersants: The Lesser of Two Evils or a Cure Worse than the Disease?*, 16 OCEAN & COASTAL L.J. 375, 393 (2011); *see also* Deepwater Horizon Study Group, *supra* note 12, at 3 (citing Joye, S. B. et al., *Soot and Slime: Burning and Microbial Metabolism Altered and Transported Macondo Oil from the Sea Surface to the Seafloor*. (forthcoming)).

147. *See* Peterson, *supra* note 19, at 462.

148. *See id*.

149. *See* 40 C.F.R. § 300.310(a).

150. *See id*.

151. *Id*.

152. *See* Schmidt, *supra* note 14, at 340; *see also* Deepwater Horizon Study Group, *supra* note 12, at 3.

153. *See* Deepwater Horizon Study Group, *supra* note 12, at 3, 8.

154. *See id*. at 3-4.

dispersed oil has the potential to threaten oceanic ecosystems for years.[155]

Accordingly, similar to the original (1970) NCP, the EPA should consider setting forth a two-phased response protocol in Subpart J.[156] The Deepwater Horizon Study Group suggests that during the first stage of oil recovery, responders should use containment booms to capture the spilled oil and skimmers and absorbent booms to recover it.[157] If reached, the second stage should begin only after an informed weighing of the tradeoffs—based on data obtained from tests using the spilled oil type and under representative conditions. This indicates responders cannot protect the public health and welfare and the environment without the use of alternative technologies, such as when the spilled oil presents an imminent threat to shoreline ecosystems.[158] Only once responders reach this consensus should they add the technologies of in-situ burning and chemical dispersant application.[159]

155. *See* Schmidt, *supra* note 14, at 344.

156. *See* National Oil and Hazardous Materials Pollution Contingency Plan, 35 Fed. Reg. 8508 (1970); *see also* Deepwater Horizon Study Group, *supra* note 12, at 9.

157. *See* Deepwater Horizon Study Group, *supra* note 12, at 9.

158. *See* National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300.910(a) (1994), *amended by* 33 U.S.C. § 1321 (2000)); *see also* Deepwater Horizon Study Group, *supra* note 12, at 9; *see also* Incident Report, *supra* note 57, at 17.

159. *See* Deepwater Horizon Study Group, *supra* note 12, at 9; *see also* Incident Report, *supra* note 57, at 17.