HARMONIZING REQUIREMENTS FOR OILS, NOXIOUS LIQUID SUBSTANCES, AND HAZARDOUS SUBSTANCES IN SPILL PREPAREDNESS REGULATIONS[1]

Gary Yoshioka and Ellinor Coder
ICF Consulting, 9300 Lee Highway, Fairfax VA, 22031

Isabelle Morin and Mark Landry
Abt Associates, 55 Wheeler Street, Cambridge, MA, 02138

Barbara Davis and Lynn Beasley, EPA Oil Program
1200 Pennsylvania Ave., NW, Washington D.C., 20460

ABSTRACT

The U.S. Coast Guard (USCG) enforces regulations for vessel response plans and marine transportation-related facility response plans for oil. The U.S. Environmental Protection Agency (EPA) enforces similar regulations for response plans for non-transportation-related facilities. Proposed USCG rules would require response plans for hazardous substances designated under the authority of the Clean Water Act (CWA). Other USCG regulations implement provisions of the International Convention for the Prevention of Pollution from Ships, known as MARPOL 73/78. Annex I of MARPOL 73/78 addresses petroleum pollution, while Annex II identifies and addresses Noxious Liquid Substances (NLSs). The Coast Guard and Maritime Transportation Act of 2004 gives the USCG authority to require response plans for NLSs under the CWA. There is some overlap, however, in the substances that are listed as NLSs and those that are categorized as oils or designated as CWA hazardous substances. Adding NLSs to the list of substances requiring a response plan has several implications for spill prevention, preparedness, and response programs. Some facilities currently have response plans for oils and may have response plans for CWA hazardous substances in the future. Some NLSs may be hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and response plans for those NLSs must be consistent with spill notification and response requirements under CERCLA. EPA and USCG On-Scene Coordinators must consider these overlapping listings when deciding on the appropriate removal actions for discharges. Facility owners and operators will need to consider their existing response plans when preparing response plans for NLSs. Under the CWA all response plans must be consistent with the National Contingency Plan and Area Contingency Plans.

DISCUSSION

Introduction

This paper primarily focuses on requirements that apply to facilities, in particular *complexes*, which are facilities that are regulated by two or more federal agencies (e.g., transportation-related portion regulated by the U.S. Coast Guard (USCG) and non-transportation-related portion regulated by the U.S. Environmental Protection Agency (EPA)). The paper begins with background information on the relevant statutes and regulations, and on the relationship among lists of noxious liquid substances (NLSs) and other regulated substances.[2] The paper then summarizes the existing regulation of facilities that handle or store oils, hazardous substances, and NLSs. Finally, the paper outlines how recent changes in response planning rulemaking authority may affect regulatory programs and the objectives of coordinated facility preparedness and response.

Statutes and Regulatory Authority

The Oil Pollution Act of 1990 (OPA 90) amended section 311(j) of the Federal Water Pollution Control Act (Clean Water Act or CWA) to require the promulgation of regulations requiring the owner or operator of a tank vessel or facility to prepare and submit, ... "a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge, of oil or a hazardous substance." The requirement applies to all tank vessels and offshore facilities and to any onshore facility that, "because of its location, could reasonably be expected to cause substantial harm to the environment by discharging into or on the navigable waters, adjoining shorelines, or the exclusive economic zone."

Executive Order 12777 and a Memorandum of Understanding (MOU), dated July 1, 1994, between the EPA, the U.S. Department of Transportation (DOT), and the U.S. Department of Interior (DOI), delegate jurisdictional responsibility to EPA for non-transportation-related onshore and offshore facilities located landward of the coastline. The MOU delegates jurisdictional responsibility to the USCG for tank vessels and marine transportation-related facilities (MTR). Other agencies that have response planning rulemaking authority include the Minerals Management Service within DOI, which has authority for non-transportation-related offshore facilities located seaward of the coastline, and the Research and Special Programs Administration within DOT, which has authority for pipelines and rolling stock. EPA and the USCG have promulgated regulations under the CWA to require facility response plans (FRPs) for oil facilities (40 CFR part 112 and 33 CFR part 154). In March 2000, the USCG proposed similar requirements for response plans for marine transportation-related facilities that transfer hazardous substances in bulk to or from a vessel (65 FR 17416, March 31, 2000).

The Coast Guard and Maritime Transportation Act of 2004 (Pub.L.108-293, August 9, 2004) contains a provision authorizing the USCG to issue regulations requiring the owners or operators of vessels or facilities to prepare and submit response plans for responding to a discharge of an NLS. The statute amended section 311(j)(5) of the CWA by redesignating subparagraphs (B) through (H), as subparagraphs (C) through (I) respectively, and inserting a new paragraph (B):

> *"The Secretary of the Department in which the Coast Guard is operating may issue regulations which require an owner or operator of a tank vessel, a non-tank vessel, or a facility described in subparagraph (c) that transfers noxious liquid substances in bulk to or from a vessel to prepare and submit to the Secretary a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge, of a noxious liquid substance that is not designated as a hazardous substance or regulated as oil in any other law or regulation. For purpose of this paragraph, the term [noxious liquid substance] has the same meaning when that term is used in the MARPOL Protocol".*

A 1971 MOU between EPA and DOT defined non-transportation-related onshore and offshore facilities and transportation-related onshore and offshore facilities. As established in a 1994 MOU, the USCG has jurisdictional authority over the marine transportation-related portion of an oil onshore facility (36 FR 24081, July 1, 1994). Noting the relationship between oils and hazardous substances in OPA 90 and the CWA, the USCG recommended, in the preamble to its proposed rule for hazardous substance response planning, extending the 1994 MOU on oil facilities to also cover hazardous substance onshore facilities.

Noxious Liquid Substances and Their Relationship to Oils and Hazardous Substances

Hazardous Substances

Both CERCLA and the CWA regulate hazardous substances. The lists of substances regulated under each statute, however, are not identical. The CWA refers to hazardous substances in section 311(b)(2)(A), as "such elements and compounds, other than oil, which, when discharged in any quantity into or upon the navigable waters of the United State or adjoining shorelines... present an imminent and substantial danger to the public health or welfare..." EPA has designated 296 hazardous substances listed in 40 CFR 116.4 under section 311(b)(2)(A) of the CWA. The definition of hazardous substance in CERCLA includes these CWA hazardous substances by reference, in addition to substances listed under other statutory authorities, for a total of over 800 CERCLA hazardous substances listed in 40 CFR 302.4.

Oils

There is no similar list for oils in any statute or regulation in the Code of Federal Regulations. Instead, the term "oil" is broadly defined in the CWA and OPA 90. CWA section 311(a)(1) defines oil as "oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." OPA 90 adds to the CWA definition that oil ".. does not include any substance which is specifically listed or designated as a hazardous substance [under CERCLA] and which is subject to the provisions of that Act." Congress purposely excluded CERCLA hazardous substances from this later definition of oil to avoid an overlap of authority between OPA 90 and CERCLA.

In 40 CFR 110.3, EPA defines discharges of oil that may be harmful to include discharges that violate applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

The USCG identifies 156 substances it considers oils on its website.[3] The list includes petroleum oils, animal fats and vegetable oils, and other non-petroleum oils. Also included on the list are certain lube-oil additives since, according to the website, these substances may be shipped or stored in an oil medium. The USCG may add other substances to its list in the future if they are determined to have oil-like characteristics.

Noxious Liquid Substances

The International Maritime Organization (IMO) classifies certain substances carried in bulk as NLSs based on the hazard these substances pose to the environment, human health, or physical amenities. Annex II of MARPOL 73/78[4], contains a list of approximately 650 NLSs. The list of NLSs is updated periodically as IMO member countries evaluate new substances. U.S. navigation and shipping regulations reflect the NLS provisions in MARPOL 73/78.

The Coast Guard and Maritime Transportation Act of 2004, which amended the CWA to give the USCG authority to require FRPs for NLS facilities, does not apply to all NLSs. It excludes NLSs that are designated as CWA hazardous substances or regulated as oils.

Figure 1 illustrates the relationships between NLSs and other classes of substances defined in statutes. CWA hazardous substances are a subset of CERCLA hazardous substances, and several (76) are also NLSs. Other NLSs are CERCLA hazardous substances, but not CWA hazardous substances. There is also an overlap between NLSs and the list of substances the USCG considers oils. Certain NLSs are on the USCG list of oils as lube oil additives (e.g., calcium alkyl salicylate), while other NLSs that are seemingly oils are not included on the USCG list (e.g., rapeseed oil fatty acid methyl esters). Although the USCG list of oils does not contain any CWA hazardous substances, two CERCLA hazardous substances, which are also NLSs, are on the USCG list (hexane and creosote). Finally, some substances identified as NLSs are not designated as CWA hazardous substances, nor are they considered oils. For this paper, we refer to such substances as FRP-NLSs. Table 1 provides examples of substances in each category.

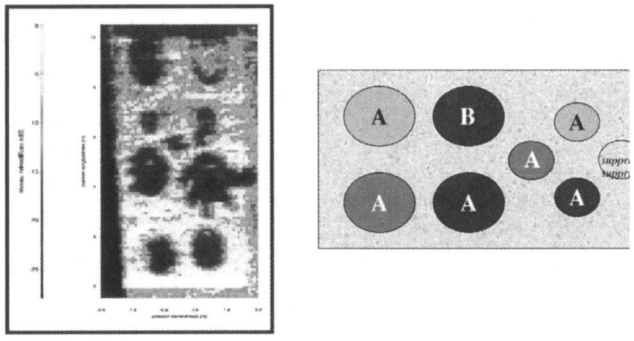

FIGURE 1: RELATIONSHIPS BETWEEN NLSS AND OTHER CLASSES OF SUBSTANCES DEFINED IN STATUTES

Table 1: Examples of overlap between categories of substances

Substance ###	NLS	CWA Hazardous Substance	CERCLA Hazardous Substance	USCG Oil	FRP Required or Potentially Required*
Acetochlor	#				3
Ammonium nitrate	#				3
Animal and fish oils	#			#	1
n–Butyl alcohol	#		#		3
Benzene	#	#	#		2
Butyl toluene	#				3
Camphor oil	#			#	1
Carbon tetrachloride	#	#	#		2
Chlorinated paraffins	#			#	1
Chloroform	#	#	#		2
Chlorotoluene	#				3
Creosote	#		#	#	1
Ethyl ether	#		#		3
Ethylbenzene	#	#	#		2
Ethylphenol	#				3
Hexane	#		#	#	1
Hydrochloric acid	#	#	#		2
Perchloroethylene	#		#		3
Rosin oil	#			#	1
Sulfuric acid	#	#	#		2
Styrene	#	#	#		2
Toluene	#	#	#		2
Tributyl phosphate	#				3
Turpentine	#			#	1
Vegetable oil	#			#	1
Xylene	#	#	#		2

* FRP Required or potentially required:
1: Currently facility owners or operators must prepare an oil FRP if applicability criteria are met.
2: When the CWA hazardous substance FRP rule is finalized, marine transportation-related facility owners or operators will need to prepare a CWA hazardous substance FRP if applicability criteria are met
3: When an NLS FRP rule is established, marine transportation-related facility owners or operators will need to prepare an NLS FRP if applicability criteria are met

Existing Response Planning Requirements for Oils, Hazardous Substances, and Noxious Liquid Substances

What response planning requirements for oil must a facility owner or operator follow?

EPA and the USCG have promulgated rules requiring the owner or operator of a facility or vessel that handles, stores, or transports oil to prepare and submit a response plan. Regulated facilities are those that could reasonably be expected to cause *substantial harm* to the environment. The existing EPA oil FRP regulation (40 CFR part 112) applies to non-transportation-related facilities that either: (1) store 42,000 gallons of oil and transfer oil over water, or (2) store 1,000,000 gallons of oil and meet an additional criterion (i.e., lack sufficient secondary containment, are located such as to cause harm to sensitive environment or affect a public drinking water intake, or have experienced a reportable discharge of 10,000 gallons or more in the last five years). The existing USCG regulation (33 CFR part 154) applies to MTR facilities defined as any onshore facility, including piping and structures used for the transfer of oil to or from a vessel, and to any deepwater port subject to regulation under 33 CFR part 150. A USCG-regulated onshore MTR facility is generally the trans-

portation-related portion of a complex, where EPA regulates the non-transportation-related portion.

The EPA and USCG oil FRP rules specify the required plan format and minimum response performance criteria to respond within a specified time frame to a worst-case discharge scenario. The owners or operators must evaluate the hazards posed by their facility and demonstrate in their plan that they have the necessary equipment either on site or readily accessible through a contract with a commercial response organization or through other approved means. They must also identify a qualified individual, provide training to their personnel, and carry out exercises or participate in unannounced drills.

The response plans must be consistent with the National Contingency Plan (NCP) and Area Contingency Plans (ACPs). To improve coordination of planning and response activities within the facility, and with public and commercial responders, facilities may use an integrated contingency plan (ICP, or "One Plan") approach to meet requirements of the USCG or EPA oil FRP regulations, along with those of other applicable preparedness and response planning regulations (Department of Transportation Pipeline Response Plan Regulation, Occupational Safety and Health Administration Emergency Action Plan Regulation and Process Safety Standard, EPA RCRA Contingency Planning Requirement, State requirements, etc.).

What response planning requirements for hazardous substances must a facility owner or operator follow?

The USCG proposed rule, entitled *Marine Transportation-Related Facility Response Plans for Hazardous Substances* (65 FR 17416, March 31, 2000) requires that the owners or operators of MTR facilities that could reasonably be expected to cause substantial or significant and substantial harm to the environment by releasing a hazardous substance into the navigable waters of the United States, prepare and submit hazardous substances response plans to minimize the impact of a hazardous substance discharge on human health and the environment. The facilities covered by the proposed rule are facilities handling in bulk one or more of the 296 chemicals that EPA designated as CWA hazardous substances.

Some facilities must already comply with existing regulations that require planning for responding to the discharge of certain substances. Eventual hazardous substance FRPs will need to be consistent with the provisions of other applicable regulations.

The EPA Risk Management Plan (RMP) regulation (40 CFR part 68), for instance, applies to facilities defined as "stationary sources" that handle, store, or use the substances in quantities above a specified threshold.[5] The RMP regulation covers 140 toxic and flammable, which include 29 of the 296 CWA hazardous substances. Plans developed to meet current RMP requirements may be useful in eventually preparing hazardous substance FRPs.

Additionally, EPA Emergency Planning and Notification regulations (40 CFR part 355), require that the owner or operator of a facility that has any of the listed "extremely hazardous substances" at or above a specified threshold planning quantity must: (1) notify the State Emergency Response Commission, (2) designate a facility emergency response coordinator to participate in the local emergency planning process, and (3) provide requested information to the Local Emergency Planning Committee for the development or implementation of the local emergency plan. The list of extremely hazardous substances includes 179 CWA hazardous substances, so owners and operators that eventually prepare FRPs to comply with the proposed USCG rules would need to consider those local emergency plans.

What are the response planning requirements for noxious liquid substances?

The existing USCG regulation at 33 CFR part 151 addresses NLS pollution. It includes requirements for certificates, operating procedures, control of discharge of residues, and reporting of spills. Although the existing rule applies to all NLSs, the provisions are limited to oceangoing ships. Certain NLSs are covered under the existing FRP rules for oil, or one of the existing (or proposed) preparedness regulations that apply to various classes of hazardous substances or other chemicals. The Coast Guard and Maritime Transportation Act of 2004 gives authority to the USCG to impose response planning requirements on vessels and certain USCG-regulated facilities for those NLSs that are neither CWA hazardous substances, nor regulated as oil.

Under the CWA, FRPs must be consistent with the requirements of the NCP and ACPs. Requirements in the NCP and in most ACPs, however, are different for responses to spills of oil, CWA hazardous substances, CERCLA hazardous substances, and pollutants or contaminants. A facility owner or operator may need to consider different requirements for different substances when describing spill notification and response planning in the FRP. Like oil discharges, reportable CERCLA hazardous substances releases must be reported to the National Response Center. An eventual response plan for FRP-NLSs may therefore need to provide different notification procedures for FRP-NLSs that are CERCLA hazardous substances and for those that are pollutants or contaminants.

Table 2 summarizes the exiting and proposed federal requirements for various classes of substances at facilities regulated by the USCG or by EPA. It also highlights possible FRP rules that could be developed under existing rulemaking authority.

Table 2: Summary of federal requirements applicable to oils, hazardous substances, and NLSs at facilities regulated by USCG or EPA

	CWA Hazardous substance	Oil	NLS that is neither a hazardous substance nor an oil (FRP-NLS)
EPA FRP (non-transportation related facilities)	EPA has authority for FRP rulemaking Certain substances are covered by RMP or Emergency Planning and Notification regulations	Final FRP rule (40 CFR 112)	
USCG FRP (marine transportation related facilities)	Proposed FRP rule (65 FR 17416)	Final FRP rule (33 CFR 154)	USCG has authority for FRP rulemaking

Impact on Regulated Facilities

Depending on whether, and how, the USCG decides to pursue response planning rulemaking for NLSs, such regulation could potentially result in different treatment in the parts of the complex regulated by EPA and the USCG (Figure 2). The two agencies have coordinated their current oil FRP requirements, and this is also essential for future FRP requirements. Lack of coordination could otherwise result in complex owners or operations needing to submit separate response plans for the transportation- and non-transportation-related portions, reflecting different response planning requirements for a hazardous substance release (if the USCG rule is finalized) or an FRP-NLS discharge. To ensure coordination and consistency of response between the various parts of a complex, the owner or operator may include in the FRP provisions to respond to a discharge of an FRP-NLS within the non-transportation-related portion of the facility, even though the substances are not covered by EPA regulations, and even though EPA reviews and approves the FRP. EPA and the USCG will need to work together to ensure consistent requirements for regulated facilities.

Impact on Liability and Response Funding

The amendments to the CWA made by the Coast Guard and Maritime Transportation Act of 2004 also raise questions regarding responsible party liability and the appropriate funding source that would apply to a discharge of an FRP-NLS. OPA 90 provides funding through the Oil Spill Liability Trust Fund (OSLTF) for response to an oil discharge, or substantial threat of an oil discharge, to a navigable water. CERCLA provides authority and funding (Superfund) to respond to releases of hazardous substances, and releases of "pollutants and contaminants" that pose an "imminent and substantial danger" to the public health or welfare or the environment. When the USCG develops its regulations for FRP-NLSs, response funding will be an issue that will need to addressed.

CONCLUSIONS

The Coast Guard and Maritime Transportation Act of 2004 could have significant implications for facility responsibilities, particularly for preparedness and response planning at complexes that are under the jurisdiction of both EPA and the USCG.

When the statute is implemented through regulation, a number of key questions will likely emerge:

- Which NLSs are "regulated as oil"?
- How can EPA and the USCG ensure coordination of preparedness and response plans at transportation- and non-transportation-related portions of complexes given than these portions may be subject to different requirements?
- How can EPA and the USCG achieve consistency in regulatory requirements during the development of the USCG FRP rules on FRP-NLSs (and hazardous substances) to assist owners and operators of non-transportation-related facilities in planning to respond to discharges of these same substances?
- What is the appropriate source of funding available to respond to discharges of FRP-NLSs?

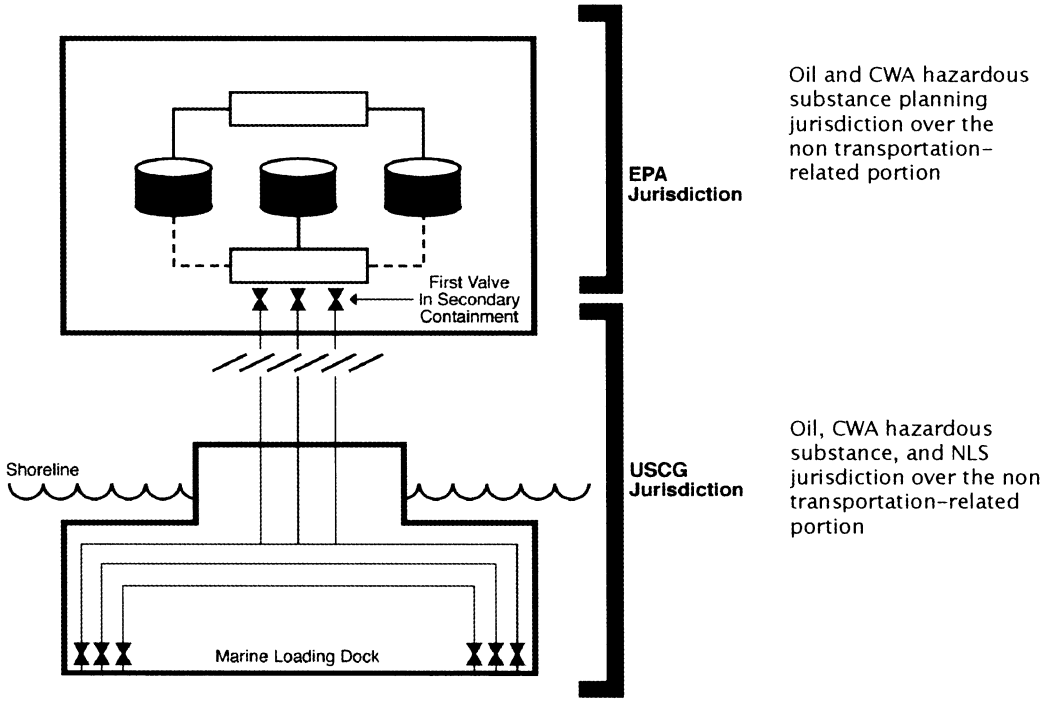

FIGURE 2: COMPLEX REGULATED BY EPA AND USCG

BIOGRAPHY

Gary Yoshioka, a project manager in the Emergency Management and Homeland Security Practice at ICF Consulting, has more than 35 years experience in the environmental field, including 25 years specializing in environmental regulatory analysis. He has provided consulting services to the U.S Environmental Protection Agency in the development of every major rulemaking on oil spill prevention planning and hazardous substance release reporting since 1985. Prior to joining ICF Consulting, he was a Senior Staff Scientist at the Johns Hopkins Applied Physics Laboratory and an assistant professor in the Department of Geography at the University of Maryland. He holds a J.D. from the University of Maryland School of Law and a Ph.D. in Geography and Environmental Engineering from the Johns Hopkins University.

ENDNOTES

1 Any opinions, findings, and recommendations expressed in this paper are solely those of the authors and do not necessarily reflect the views or policies of the United States Government or of the Environmental Protection Agency.
2 These other substances include CWA hazardous substances, which represent a subset of hazardous substances regulated under CERCLA, also referred to as the Superfund Program.
3 http://www.uscg.mil/vrp/faq/oil.shtml
4 The International Convention for the Prevention of Marine Pollution from Ships, as modified by the Protocol of 1978, and commonly referred to as MARPOL 73/78.
5 They include chemical manufacturers, refineries, utilities, and other facilities.