

**Clean Water Act Hazardous Substances Facility Response Plan Regulations:
Technical Background Document**

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Contents

1	Introduction.....	1
1.1	Background	1
1.2	Organization of Document.....	3
2	Analysis of Existing Regulatory Programs	4
2.1	Analysis Methodology	4
2.1.1	Program Elements Reviewed	4
2.1.2	Regulations Reviewed.....	4
2.2	Analysis Summary	8
2.3	EPA Regulatory Programs	19
2.3.1	America’s Water Infrastructure Act of 2018 Amendments to Section 1433 of the Safe Drinking Water Act (AWIA) (42 U.S.C. 300i-2)	19
2.3.2	Chemical Accident Prevention Provisions, Risk Management Plan (40 CFR part 68)	20
2.3.3	Emergency Planning and Community Right-to-Know Act (EPCRA)	21
2.3.4	National Pollutant Discharge Elimination System (NPDES)	25
2.3.5	Oil Pollution Prevention Regulations	27
2.3.6	Pesticide Regulations	30
2.3.7	Criteria for Classification of Solid Waste Disposal Facilities and Practices Subpart D— Standards for the Disposal of Coal Combustion Residuals (CCRs) in Landfills and Surface Impoundments (40 CFR part 257).....	32
2.3.8	Resource Conservation and Recovery Act (RCRA)	34
2.3.9	Technical Standards and Corrective Action Requirements for Owners and Operators of USTs (40 CFR part 280).....	36
2.3.10	Toxic Substance Control Act: Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40 CFR part 761)	38
2.4	Other Federal Regulations	39
2.4.1	MSHA Regulations (30 CFR parts 46-50).....	39
2.4.2	OSHA Regulations	42
2.4.3	PHMSA Hazardous Materials Regulations (49 CFR parts 171-179)	44
2.4.4	SMCRA (30 CFR parts 700-999).....	45
2.4.5	United States Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) (6 CFR part 27)	46
2.5	State Regulations	47
2.5.1	California	48
2.5.2	Delaware	50
2.5.3	Florida	52
2.5.4	Indiana	53
2.5.5	Louisiana	55
2.5.6	Maine	56
2.5.7	Michigan.....	57
2.5.8	Nevada	58
2.5.9	New Jersey	60
2.5.10	New York	61
2.5.11	Oregon	64

2.5.12	Pennsylvania	65
2.5.13	West Virginia	66
2.6	Industry Standards	68
2.6.1	American Chemistry Council (ACC) Responsible Care (RC) 14001 Technical Specification Standard	68
2.6.2	American National Standards Institute (ANSI)/American Petroleum Institute (API) Recommended Practice (RP) 754	69
2.6.3	National Fire Protection Association (NFPA) and the International Code Council (ICC) 70	
3	Review of Existing Modeling Programs	74
3.1	Approach	74
3.2	Findings	74
3.2.1	Equations Identified in EPA Technical Support Document for Water Quality-Based Toxics Control (1991)	74
3.2.2	Modeling Tools	76
4	Toxicity Endpoints Review	81
4.1	Approach	81
4.2	Findings	81
Appendix A – Regulatory Text Relevant to CWA Hazardous Substance Facility Response Regulations for EPA Programs		87
A.1	America’s Water Infrastructure Act of 2018 Amendments to Section 1433 of the Safe Drinking Water Act (AWIA) (42 U.S.C. 300i-2)	87
A.1.1	Plans for Responding to Worst Case Discharge	87
A.1.2	Identifies and Ensures Removal and Mitigation Personnel and Equipment	88
A.1.3	Updated Periodically	89
A.2	Chemical Accident Prevention Provisions, Risk Management Plan	89
A.2.1	Plans for Responding to Worst Case Discharge	89
A.2.2	Consistent with NCP and ACP	94
A.2.3	Identifies the Qualified Individual and Requires Communications	94
A.2.4	Identifies and Ensures Removal and Mitigation Personnel and Equipment	95
A.2.5	Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions	95
A.2.6	Updated Periodically	99
A.2.7	Resubmitted for Approval of Each Significant Change	101
A.3	Emergency Planning Notification and Emergency Release Notification (40 CFR part 355)	101
A.3.1	Identifies the Qualified Individual and Requires Communications	101
A.4	Hazardous Chemical Reporting: Community Right to Know (40 CFR part 370)	103
A.4.1	Identifies the Qualified Individual and Requires Communications	103
A.5	National Pollutant Discharge Elimination System (40 CFR part 122)	104
A.5.1	Plans for Responding to Worst Case Discharge	104
A.6	General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR part 403)	
	105	
A.6.1	Plans for Responding to Worst Case Discharge	105
A.6.2	Identifies the Qualified Individual and Requires Communications	106

A.6.3	Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions.....	106
A.7	Oil Pollution Prevention Regulations	107
A.7.1	Consistent with NCP and ACP	107
A.7.2	Identifies the Qualified Individual and Requires Communications	107
A.7.3	Updated Periodically	109
A.8	Pesticide Management and Disposal (40 CFR part 165).....	110
A.8.1	Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions.....	110
A.9	Pesticide Agricultural Worker Protection Standard (40 CFR part 170)	111
A.9.1	Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions.....	111
A.10	Criteria for Classification of Solid Waste Disposal Facilities and Practices Subpart D—Standards for the Disposal of CCRs in Landfills and Surface Impoundments (40 CFR part 257)	112
A.10.1	Plans for Responding to Worst Case Discharge	112
A.10.2	Identifies the Qualified Individual and Requires Communication.....	113
A.10.3	Updated Periodically	114
A.10.4	Resubmitted for Approval of Each Significant Change	115
A.11	RCRA Standards Applicable to Generators of Hazardous Waste (40 CFR part 262).....	116
A.11.1	Plans for Responding to Worst Case Discharge	116
A.11.2	Consistent with NCP and ACP	120
A.11.3	Identifies the Qualified Individual and Requires Communications	120
A.11.4	Identify and Ensure Removal and Mitigation Personnel and Equipment	122
A.11.5	Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions.....	123
A.11.6	Updated Periodically	125
A.11.7	Resubmitted for Approval of Each Significant Change	125
A.12	RCRA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF) (40 CFR part 264 & part 265)	125
A.12.1	Plan for Responding to Worst Case Discharge	125
A.12.2	Consistent with NCP and ACP	127
A.12.3	Identifies the Qualified Individual and Requires Communications	128
A.12.4	Identify and Ensure Removal and Mitigation Personnel and Equipment	130
A.12.5	Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions.....	136
A.12.6	Updated Periodically	141
A.12.7	Resubmitted for Approval of Each Significant Change	141
A.13	Toxic Substance Control Act (TSCA): Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40 CFR part 761)	142
A.13.1	Consistent with NCP and ACP	142

Tables

Table 2-1: State Regulations Reviewed	6
---	---

Table 2-2: Summary of Industry Standards Reviewed	8
---	---

Table 2-3: Matrix Comparing EPA Programs Reviewed to the CWA Hazardous Substance Facility Response Plan Required Program Elements	10
Table 2-4: Matrix Comparing Other Federal Programs Reviewed to the CWA Hazardous Substance Facility Response Plan Required Program Elements	12
Table 2-5: Matrix Comparing State Regulatory Programs Reviewed to the CWA Hazardous Substance Facility Response Plan Required Program Elements	13
Table 2-6: Matrix Comparing Industry Standard Programs to the CWA Hazardous Substance Facility Response Plan Required Program Elements	18
Table 2-7: Summary of AWIA Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements.....	19
Table 2-8: Summary of RMP Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements.....	21
Table 2-9: Summary of Emergency Planning Notification and Emergency Release Notification Rule, Hazardous Chemical Reporting Rule, and Toxic Chemical Release Reporting Rule Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	24
Table 2-10: Summary of NPDES (40 CFR part 122) and National Pollutant Discharge Pretreatment Standards Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	27
Table 2-11: Summary of Oil Pollution Prevention SPCC Rule and Oil Pollution Prevention FRP Rule Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	30
Table 2-12: Summary of Pesticide Regulations Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	32
Table 2-13: Summary of CCR Provisions Relevant to CWA Hazardous Substance FRP Required Program Elements	33
Table 2-14: Summary of RCRA Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements.....	35
Table 2-15: Summary of UST Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements.....	37
Table 2-16: Summary of TSCA PCBs Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements.....	39
Table 2-17: Summary of Regulatory Citations for OSHA’s HAZWOPER Regulation Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	43
Table 2-18: Summary of Regulatory Citations for CFATS Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	46
Table 2-19: Summary of California Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	49
Table 2-20: Summary of Delaware Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	51
Table 2-21: Summary of Florida Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	53
Table 2-22: Summary of Indiana Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	55
Table 2-23: Summary of Louisiana Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Elements	56

Table 2-24: Summary of Maine Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	57
Table 2-25: Summary of Michigan Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	58
Table 2-26: Summary of Nevada Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	60
Table 2-27: Summary of New Jersey Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	61
Table 2-28: Summary of New York Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	63
Table 2-29: Summary of Oregon Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	65
Table 2-30: Summary of Pennsylvania Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	66
Table 2-31: Summary of West Virginia Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	67
Table 2-32: Summary of Industry Standard Citations for ACC RC14001 Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	68
Table 2-33: Summary of Industry Standard Citations for ANSI/API RP-754 Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	69
Table 2-34: Summary of Industry Standard Citations for NFPA 1 – Fire Code Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	71
Table 2-35: Summary of Industry Standard Citations for NFPA 30 – Flammable and Combustible Liquids Code Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements.....	72
Table 2-36: Summary of Industry Standard Citations for NFPA 400 – Hazardous Materials Code Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements	73
Table 3-1: Summary of Modeling Tools Evaluated for Potential Use for Planning Distance Calculations..	79
Table 4-1: Toxic Endpoints.....	85

Figures

Figure 2-1: Oil Pollution Prevention FRP Rule Applicability Flow Chart (Attachment C-1, Appendix C 40 CFR 112.20.).....	29
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Acronyms

ACC	American Chemistry Council
ACP	Area Contingency Plans
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals
AIHA	American Industrial Hygiene Association
ANSI	American National Standards Institute
APA	Administrative Procedure Act
API	American Petroleum Institute
AST	Aboveground storage tank
AT123D	Analytical Transient 1-, 2-, and 3-Dimensional Simulation of Waste Transport in the Aquifer System
ATSDR	Agency for Toxic Substances and Disease Registry
AWIA	America's Water Infrastructure Act
BASINS	Better Assessment Science Integrating Point & Non-Point Sources Model
CAA	Clean Air Act
CAL FIRE	California Department of Forestry and Fire Protection
CalARP	California Accidental Release Prevention
CAPP	Chemical Accident Prevention Program
CCC	Criterion continuous concentration
CCR	Coal Combustion Residuals
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFATS	Chemical Facility Anti-Terrorism Standards
CFR	Code of Federal Regulations
CIAC	Chemistry Industry Association of Canada
CISA	Cybersecurity and Infrastructure Security Agency
CMC	Criterion maximum concentration
COI	Chemicals of Interest
CUPA	Certified Unified Program Agencies
CWA	Clean Water Act
CWP	Composite wood products
DHS	U.S. Department of Homeland Security
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
EAP	Emergency Action Plan(s)
E-FAST	Exposure and Fate Assessment Screening Tool
EHS	Extremely Hazardous Substance
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPI	Estimation Program Interface
ERP	Emergency Response Plan
ERPG	Emergency Response Planning Guidelines
EXAMS	Exposure Analysis Modeling System
FIAM	Formaldehyde Indoor Air Model
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FRP	Facility Response Plan
FWSE	Fish, wildlife, and sensitive environments
GIS	Geographical Information System

HAZWOPER	Hazardous Waste Operations and Emergency Response
HMIS	Hazardous Material Inventory Statements
HMMP	Hazardous Material Management Plan
HSCTM2D	Hydrodynamic, Sediment, and Contaminant Transport Model
ICC	International Code Council
ICWater	Incident Command Tool for Drinking Water Protection
IDLH	Immediately Dangerous to Life or Health
IGEMS	Internet Geographical Exposure Modeling System
IRIS	Integrated Risk Information System
ISCST3	Industrial Source Complex Short-Term
ISO	International Organization for Standardization
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
LEPC	Local Emergency Planning Committee
MCL	Maximum contaminant levels
MRL	Minimum Risk Levels
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NCP	National Contingency Plan
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
OFSM	Office of the State Fire Marshal
OPA 90	Oil Pollution Act of 1990
OSC	On-Scene Coordinator
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PAL	Provisional Advisory Levels for Hazardous Agents
PCBs	Polychlorinated Biphenyls
PEC	Probable effects concentration
PHMSA	Pipeline and Hazardous Materials Safety Administration
POTW	Publicly Owned Treatment Works
PSM	Process Safety Management of Highly Hazardous Chemicals
QI	Qualified Individual
RA	Regional Administrator
RAGAGEP	Recognized and generally accepted good engineering practices
RC	Responsible Care
RCRA	Resource Conservation and Recovery Act
RfC	Reference concentration
RfD	Reference dose
RMP	Risk Management Program
RP	Recommended practice
SDS	Safety Data Sheet
SDWA	Safe Drinking Water Act
SERC	State Emergency Response Commission
SMCRA	Surface Mining Control and Reclamation Act of 1977
SPCC	Spill Prevention, Control, and Countermeasures

SQG	Sediment Quality Guidelines
SRO	Spill Response Organization
STQ	Screening threshold quantity
TEC	Threshold effects concentration
TEPC	Tribal Emergency Planning Committee
TERC	Tribal Emergency Response Commission
TQP	Threshold planning quantity
TRI	Toxic Release Inventory
TRIM	Total Risk Integrated Methodology
TSCA	Toxic Substance Control Act
TSDF	Treatment, Storage, and Disposal Facilities
USCG	U.S. Coast Guard
UST	Underground storage tanks
ZCC	Zone of Critical Concern
ZPC	Zone of Peripheral Concern

1 Introduction

This Technical Background Document summarizes analyses completed in support of the Clean Water Act (CWA) Hazardous Substance Facility Response Plan (FRP) final rule.

1.1 Background

Section 311(j)(5) of the CWA directs the President to issue regulations “which require an owner or operator of a tank vessel or facility . . . to prepare and submit to the President 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.” (33 U.S.C. 1321). A facility is determined to be “. . . [an] 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.” EPA was delegated the authority to regulate non-transportation-related onshore and offshore facilities landward of the coastline, under section 311(j)(5) of the CWA.¹

Specifically, these plans must:

- Plan for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a CWA hazardous substance (CWA section 311(j)(5)(A));
- Be consistent with the National Contingency Plan (NCP) and Area Contingency Plans (ACP) (CWA section 311(j)(5)(D)(i));
- Identify the qualified individual (QI) having full authority to implement removal actions and require immediate communications between that individual and the appropriate federal official and the persons providing personnel and equipment (CWA section 311(j)(5)(D)(ii));
- Identify, and ensure by contract or other means approved by the President, the availability of private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge (CWA section 311(j)(5)(D)(iii));
- Describe the training, equipment testing, periodic unannounced drills, and response actions of persons at the facility, to be carried out under the plan to ensure the safety of the facility and to mitigate or prevent the discharge, or the substantial threat of a discharge (CWA section 311(j)(5)(D)(iv));
- Be updated periodically (CWA section 311 section (j)(5)(D)(v)); and
- Be resubmitted for approval of each significant change (CWA section 311 (j)(5)(D)(vi));

The term “hazardous substance” is defined in CWA section 311(a)(14). CWA section 311(b)(2)(A) authorizes regulations designating CWA hazardous substance, which when discharged in any quantity

¹ Under E.O. 12777 (56 FR 54757; October 18, 1991), EPA was delegated the authority to regulate non-transportation-related onshore facilities and non-transportation related offshore facilities landward of the coastline. DOT has delegated authority for transportation-related facilities and the U.S. Coast Guard (USCG) has authority for marine transportation-related facilities and tank vessels. Section 2(i) of E.O. 12777 allows for further delegation between the agencies as later done in a February 3, 1994 MOU between EPA, DOI, and DOT. DOI redelegated CWA section 311(j)(5) authority to regulate non-transportation related offshore facilities landward of the coastline to EPA. This MOU applies to both oil and hazardous substance facilities.

into jurisdictional waters,² present an imminent and substantial danger to the public health or welfare, including, but not limited to, fish, shellfish, wildlife, shorelines, and beaches. Once a chemical is designated as a CWA hazardous substance, the quantity which may be harmful when discharged is established under the authority of CWA section 311(b)(4). In March 1978, EPA designated a list of CWA hazardous substances in 40 CFR part 116. EPA established reportable quantities (RQs) for those substances in 40 CFR part 117 in August 1979 (see, for example, 43 FR 10474, March 13, 1978; 44 FR 50766, August 29, 1979). The RQs are the categories of quantities EPA deemed may be harmful based on acute aquatic toxicity and set in 40 CFR 117.3. In 1985, EPA amended 40 CFR part 117 to make reportable quantities adjusted under CERCLA the applicable reportable quantities for hazardous substances pursuant to CWA section 311 (50 FR 13456, April 4, 1985). In this action, EPA established a methodology for adjusting RQs, which established “primary criteria” as aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, and chronic toxicity. EPA subsequently established a methodology for including potential carcinogenicity as a “primary criterion” (see, for example, 54 FR 33418, August 14, 1989 and 54 FR 33426, August 14, 1989).

On March 21, 2019, the Natural Resources Defense Council, Clean Water Action, and the Environmental Justice Health Alliance for Chemical Policy Reform filed suit in the United States District Court for the Southern District of New York alleging violations of the CWA section 311(j)(5)(A)(i) and the Administrative Procedure Act (APA).³ The first claim alleged that EPA failed to issue “regulations mandated by the [CWA] requiring non-transportation-related substantial-harm facilities to plan, prevent, mitigate and respond to worst case spills of hazardous substances . . . constitutes a failure to perform a non-discretionary duty or act in violation of the [CWA].” The second claim alleged, “EPA’s failure to issue these regulations constitute[d] agency action unlawfully withheld contrary to and in violation of the [APA] and the [CWA].” The plaintiffs requested an order from the Court to compel EPA to promulgate Hazardous Substance Worst Case Discharge Planning Regulations. Following EPA’s Answer, filed on June 4, 2019, Plaintiffs and EPA entered discussions regarding a potential resolution of the lawsuit.

The plaintiffs and EPA entered into a consent decree on March 12, 2020 that resolved the case.⁴ The consent decree required that within two years (24 months) of entry into the consent decree, or by

² CWA section 311(b)(3) provides that the discharge of oil or hazardous substances (i) into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone, or (ii) in connection with activities under the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.) or the Deepwater Port Act of 1974 (33 U.S.C. 1501 et seq.); or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States [including resources under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.)], in such quantities as may be harmful as determined by the President under paragraph (4) of this subsection, is prohibited, except (A) in the case of such discharges into the waters of the contiguous zone or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson-Stevens Fishery Conservation and Management Act), where permitted under the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973, and (B) where permitted in such quantities and at times and locations or under such circumstances or conditions as the President may, by regulation, determine not to be harmful.

³ Complaint for Declaratory and Injunctive Relief, *Env’tl Justice Health Alliance for Chem. Policy Reform v. EPA*, No. 19-cv-2516 (S.D.N.Y. March 21, 2019)

⁴ *Env’tl Justice Health Alliance for Chem. Policy Reform v. EPA*, No. 1:19-cv-02516-VM, Document 32 (S.D.N.Y., filed March 12, 2020)

March 12, 2022, EPA to sign a notice of proposed rulemaking pertaining to the issuance of the Hazardous Substance Worst Case Discharge Planning Regulations. That consent decree also required that EPA sign a notice taking final action within an additional two and half years, or 30 months of publication of the proposal. On March 28, 2022, EPA proposed to require planning for worst case discharges of CWA hazardous substances for onshore non-transportation-related facilities that could reasonably be expected to cause substantial harm to the environment by discharging CWA hazardous substances into or on the navigable waters, adjoining shorelines, or exclusive economic zone, with a 60-day comment period (40 CFR Parts 118 and 300), which was extended 60 days for a total of 120 days.

1.2 Organization of Document

The remainder of this document is organized as follows:

- Chapter 2 contains an analysis of existing relevant regulatory programs and industry standards to determine the extent of overlap with CWA hazardous substance worst case discharge planning program elements required by the CWA. EPA reviewed regulations issued by EPA, other federal agencies, and states, as well as industry standards.
- Chapter 3 contains a review of existing modeling programs and tools related to chemical transport over water and land. EPA evaluated these models to assess their potential for use to calculate planning distance, a requirement in the final rule.
- Chapter 4 contains a review of human toxicity endpoint options for public receptors including: EPA Integrated Risk Information System (IRIS) reference doses (Rfd) or reference concentrations (RfC), National Institute for Occupational Safety and Health's (NIOSH) Immediately Dangerous to Life or Health (IDLH), Acute Exposure Guideline Levels for Airborne Chemicals (AEGs), Emergency Response Planning Guidelines (ERPGs), Minimum Risk Levels (MRLs), and Provisional Advisory Levels for Hazardous Agents (PALs). EPA assessed these toxic endpoints for their potential use as a criterion for determining the ability to cause injury to public receptors.
- Appendix A contains the regulatory text for EPA regulatory programs that are relevant to the final CWA Hazardous Substance FRP Regulations.

2 Analysis of Existing Regulatory Programs

2.1 Analysis Methodology

To inform the degree to which worse case discharges of hazardous substances are regulated by existing regulations, the Agency analyzed the current federal and state regulatory framework as well as industry standards for overlap with CWA hazardous substance worst case discharge planning provisions required by CWA section 311(j)(5). Section 2.1.1 describes the program elements reviewed and Section 2.1.2 describes the EPA, other federal agency, and state regulations reviewed, as well as the industry standards reviewed.

2.1.1 Program Elements Reviewed

As discussed in Section 2.1, EPA analyzed the existing federal and state regulatory framework as well as industry standards to assess the potential overlap with CWA hazardous substance worst case discharge planning provisions for FRPs required by CWA section 311(j)(5). EPA examined the following program elements required for response plans by CWA section 311(j)(5)(D):

- Must be consistent with the NCP and ACPs;
- Must identify the QI having full authority to implement removal actions, and require immediate communications between that individual and the appropriate federal official and the persons providing personnel and equipment;
- Must identify, and ensure by contract or other means approved by the President the availability of private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge;
- Must describe the training, equipment testing, periodic unannounced drills, and response actions of persons at the facility, to be carried out under the plan to ensure the safety of the facility and to mitigate or prevent the discharge, or the substantial threat of a discharge;
- Must be updated periodically; and
- Must be resubmitted for approval of each significant change.

EPA evaluated whether each of the regulations described in Section 2.1.2 contained requirements pertaining to any of the above program elements.

2.1.2 Regulations Reviewed

EPA Regulatory Programs

EPA reviewed 16 EPA regulatory programs, 10 regulatory programs from other federal agencies, and 27 state regulatory programs to determine the extent to which each program contained requirements pertaining to the program elements described in Section 2.1.1. Additionally, EPA reviewed industry standards.

Specifically, EPA reviewed the following EPA regulatory programs that contain requirements under the above program elements:

- *America's Water Infrastructure Act (AWIA) of 2018 Amendments to Section 1433 of the Safe Drinking Water Act (SDWA)* (42 U.S.C. 300i-2)
- *Chemical Accident Prevention Provisions*
 - Risk Management Plan (RMP) Rule (40 CFR part 68, Subpart G)
- *Emergency Planning and Community Right to Know Act (EPCRA) Regulations*
 - Emergency Planning Notification and Emergency Release Notification (40 CFR part 355)
 - Hazardous Chemical Reporting: Community Right-to-Know (40 CFR part 370)
 - Toxic Chemical Release Reporting: Community Right-to-Know (40 CFR part 372)
- *National Pollutant Discharge Elimination System (NPDES) Regulations*
 - NPDES (40 CFR part 122)
 - General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR part 403)
- *Oil Pollution Prevention Regulations*
 - Subpart A, Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils, Spill Prevention, Control, and Countermeasure (SPCC) (40 CFR Subpart B 112.8-11)
 - Subpart D, Response Requirements, Facility Response Plan (FRP) (40 CFR 112.20 and 112.21, Appendices C-F)
- *Pesticide Regulations*
 - Pesticide Management and Disposal (40 CFR part 165)
 - Pesticide Agricultural Worker Protection Standard (40 CFR part 170)
- *Resource Conservation and Recovery Act (RCRA) Regulations*
 - Criteria for Classification of Solid Waste Disposal Facilities and Practices Subpart D, Standards for the Disposal of Coal Combustion Residuals (CCR) in Landfills and Surface Impoundments (40 CFR part 257)
 - RCRA Standards Applicable to Generators of Hazardous Waste (40 CFR part 262)
 - RCRA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF) (40 CFR parts 264 & 265)
 - Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) (40 CFR part 280)
- *Toxic Substances Control Act (TSCA) Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions* (40 CFR part 761)

Other Federal Regulations

EPA reviewed the following other federal regulations:

- *Mine Safety and Health Administration (MSHA) Regulations*
 - Training and Retraining of Miners Engaged in Shell Dredging or Employed at Sand, Gravel, Surface Stone, Surface Clay, Colloidal Phosphate, or Surface Limestone Mines (Training, Sand and Gravel Mines) (30 CFR part 46)
 - Hazard Communication (HazCom) (30 CFR part 47)
 - Training and Retraining of Miners (Training) (30 CFR part 48)

- Notification, Investigation, Reports and Records of Accidents, Injuries, Illnesses, Employment, and Coal Production in Mines (Accident Notification) (30 CFR part 50)
- *Occupational Safety and Health Administration (OSHA) Regulations*
 - Hazardous Waste Operations and Emergency Response (HAZWOPER) (29 CFR 1910.120)
 - Process Safety Management of Highly Hazardous Chemicals (PSM) (29 CFR 1910.119)
 - Emergency Action Plans (EAPs) (29 CFR 1910.38)
 - OSHA Hazard Communication Standard (HazCom) (29 CFR 1910.1200)
- *Pipeline and Hazardous Materials Safety Administration (PHMSA) Hazardous Materials Regulations (49 CFR parts 171–179)*
- *Surface Mining Control and Reclamation Act of 1977 (SMCRA) Mineral Resources, Office of Surface Mining Reclamation and Enforcement, Department of the Interior (30 CFR parts 700–999)*
- *United States Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) (6 CFR part 27)*

State Regulations

EPA identified 27 state regulatory programs with requirements potentially comparable to the program elements described in Section 2.1.1. The regulations generally fall into the following four categories:

- Discharge prevention program
- Emergency response planning program
- Aboveground Storage Tank (AST) regulation
- Fire code

Because states regulate state-designated hazardous substances through different means and authorizing bodies, the scope, purpose, and type of the regulatory programs vary significantly. Table 2-1 provides a snapshot of the general purpose of the 27 regulatory programs, noting that some regulations have multiple purposes that may not all be depicted in the table. In some cases, the purpose listed here may not be the primary purpose of the regulation.

Table 2-1: State Regulations Reviewed

State	State Regulation	Mission of Regulatory Program			
		Fire Code	AST	Prevention Program for Discharges	Contingency Plan and Emergency Response
CA	<i>Hazardous Material Release Reporting, Inventory, and Response Plans (19 CCR 2620–2671)</i>				✓
	<i>California Accidental Release Prevention Program (CalARP) (19 CCR 2735–2785)</i>			✓	
	<i>Hazardous Material Management Plan (HMMP) and Hazardous Material Inventory Statements (HMIS) (California Fire Code) (CCR Part 9 of Title 24)</i>	✓			
DE	<i>Aboveground Storage Tanks (DE Title 7 Reg. 1352)</i>		✓		
FL	<i>Pollutant Discharge Prevention and Control Act (Chapter 376)</i>			✓	✓
	<i>Storage Tank Program</i>		✓		

State	State Regulation	Mission of Regulatory Program			
		Fire Code	AST	Prevention Program for Discharges	Contingency Plan and Emergency Response
GA	<i>Rules and Regulations for Flammable and Combustible Liquids (GA R&R 120-3-11)</i>	✓			
	<i>Criteria for Water Supply Watersheds (GRR 391-3-16-.01) and Groundwater Recharge Areas (GRR 391-3-16-.02(3)(d))</i>	*	*	*	*
IL	<i>Storage, Transportation, Sale and Use of Gasoline and Volatile Oils: Rules and Regulations Relating to General Storage (Title 41, Part 160)</i>		✓		
IN	<i>Spills, Reporting, Containment, and Response (327 IAC 2-6.1)</i>				✓
	<i>Secondary Containment of Aboveground Storage Tanks Containing Hazardous Materials (327 IAC 2-10)</i>		✓		
KS	<i>Aboveground storage tank</i>		✓		
KY	<i>Wild rivers change of use permit standards. (400 KAR 4:140(15))</i>			✓	
LA	<i>Emergency Notification Procedures (LAC 33:I. Chapter 39)</i>				✓
	<i>Spill Prevention and Control (LAC 33:IX Chapter 9)</i>			✓	✓
ME	<i>Facility Emergency Response Plans (ERP) (37-B MRSA 795)</i>				✓
MA	<i>Permit and Inspection Requirements of Aboveground Storage Tanks of More Than Ten Thousand Gallons Capacity (502 CMR 5.00)</i>		✓		
	<i>Massachusetts Contingency Plan (310 CMR 40)</i>				✓
MI	<i>Spillage of Oil and Polluting Materials (Mich. Admin. Code R324)</i>			✓	
MN	<i>Aboveground Storage of Liquid Substances (Minn. R. 7151)</i>		✓		
NV	<i>Chemical Accident Prevention Program (CAPP)</i>			✓	
NJ	<i>Discharges of Petroleum and Other Hazardous Substances Rules (N.J.A.C. 7:1E)</i>			✓	✓
NY	<i>Hazardous Substances Identification, Release Prohibition, and Release Reporting; Handling and Storage of Hazardous Substances (6 NYCRR parts 596-599)</i>				✓
OR	<i>Oil and Hazardous Materials Emergency Response Requirements (OAR 340-142)</i>				✓
PA	<i>Administration of the Storage Tank and Spill Prevention Program (25 Pa. Code 245)</i>		✓	✓	
SC	<i>South Carolina Pollution Control Act</i>	*	*	*	*
WV	<i>Aboveground Storage Tanks (W. Va. C.S.R. 47-63)</i>		✓		
* Regulatory program's mission falls outside of these categories.					

Industry Standards

EPA reviewed six industry standards, shown in Table 2-2.

Table 2-2: Summary of Industry Standards Reviewed

Industry Standard	Substances Regulated
ACC RC14001: 2015 Technical Specification	N/A
ANSI/API RP-754 3 rd Edition: Process Safety Performance Indicators for the Refining and Petrochemical Industries	Petrochemical industry materials
NFPA 1: Fire Code <i>Chapter 60 (Hazardous Materials) and Chapter 66 (Flammable and Combustible Liquids)</i>	Hazardous materials, flammable and combustible liquids
NFPA 30: Flammable and Combustible Liquids Code	Flammable and combustible liquids
NFPA 400: Hazardous Materials Code	Hazardous materials
NFPA 1620: Standard for Pre-Incident Planning	Hazardous materials

2.2 Analysis Summary

After reviewing relevant regulations from EPA, other federal agencies, and states, EPA found that there are no existing federal programs that cover all the required CWA section 311 section (j)(5) program elements for all CWA hazardous substances. EPA additionally found that state coverage is an inconsistent patchwork and cannot be relied upon for worst case discharge planning.

EPA Regulatory Programs

Table 2-3 summarizes the extent to which the EPA regulatory programs reviewed have provisions relevant to the requirements in CWA section 311(j)(5). EPA identified the following key takeaways:

- There are few existing EPA programs that cover all the required CWA section 311 (j)(5) program elements for all CWA hazardous substances.
- Facilities with oil FRPs or RMPs may have significant overlap for the required program elements.
- As discussed in the Regulatory Impact Analysis: Clean Water Act Hazardous Substances Worst Case Discharge Planning Regulations,⁵ PCBs account for majority of CWA hazardous substance spills in the National Response Center (NRC) database from 2010-2019. PCBs are regulated under TSCA; however, TSCA PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40 CFR part 761) generally do not have provisions relevant to the requirements in CWA section 311(j)(5). PCBs are usually found in mineral oil, and therefore would be covered under the Oil Pollution Prevention SPCC regulations. However, they are typically not stored in large enough amounts for facilities with PCBs onsite to become subject to the Oil Pollution Prevention FRP rule requirements.
- RCRA hazardous waste regulations are comprehensive for CWA hazardous substances present as waste for USTs, TSDF, and large quantity generators (LQG).

⁵ See Table 3-1 of the Regulatory Impact Analysis: Clean Water Act Hazardous Substances Worst Case Discharge Planning Regulations, Docket ID: EPA-HQ-OLEM-2021-0585.

Other Federal Regulations

Table 2-4 summarizes the extent to which the other federal regulatory programs reviewed have provisions relevant to the requirements in CWA section 311(j)(5). As shown in the table, these regulations largely do not contain provisions relevant to the requirements in CWA section 311(j)(5).

State Regulations

Table 2-5 summarizes the extent to which the state regulatory programs reviewed have provisions relevant to the requirements in CWA section 311(j)(5). Overall, EPA found that state coverage is an inconsistent patchwork and cannot be relied upon for worst case discharge planning.

Industry Standards

Table 2-6 summarizes the extent to which the industry standards reviewed have provisions relevant to the requirements in CWA section 311(j)(5). Industry standards are voluntary and do not provide comprehensive coverage of CWA hazardous substance FRP program elements.

Table 2-3: Matrix Comparing EPA Programs Reviewed to the CWA Hazardous Substance Facility Response Plan Required Program Elements

Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and requires communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment testing, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change.
America's Water Infrastructure Act of 2018 Amendments to Section 1433 of the Safe Drinking Water Act (42 U.S.C. 300i-2)	*	●	○	○	●	○	●	○
Chemical Accident Prevention Provisions, RMP (40 CFR part 68)	30	●	●	●	●	●	●	●
Emergency Planning Notification and Emergency Release Notification (40 CFR part 355)	66	○	○	●	○	○	○	○
Hazardous Chemical Reporting (40 CFR part 370)	296	○	○	●	○	○	○	○
Toxic Chemical Release Reporting: Community Right-to-Know (40 CFR part 372)	184	○	○	○	○	○	○	○
NPDES (40 CFR part 122)	*	●	○	○	○	○	○	○
NPDES General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR part 403)	*	●	○	●	○	●	○	○
Oil Pollution Prevention SPCC (40 CFR part 112)	*	○	○	○	○	○	○	○
Oil Pollution Prevention FRP (40 CFR 112.20 and 112.21)	*	○	●	●	○	○	●	○
Pesticide Management and Disposal (40 CFR part 165)	*	○	○	○	○	●	○	○
Pesticide Agricultural Worker Protection Standard (40 CFR part 170)	*	○	○	○	○	●	○	○

Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and requires communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment testing, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change.
Standards for the Disposal of CCR in Landfills and Surface Impoundments (40 CFR part 257)	*	●	○	●	○	○	●	●
RCRA Standards Applicable to Generators of Hazardous Wastes (40 CFR part 262)	*	●	●	●	●	●	●	●
Large Quantity Generators		●	●	●	●	●	●	●
Small Quantity Generators		●	○	●	●	●	○	○
Very Small Quantity Generators		○	○	○	○	○	○	○
RCRA Standards for Owners and Operators of Hazardous Waste TSDF (40 CFR parts 264 & 265)	*	●	●	●	●	●	●	● (264) ● (265)
Technical Standards and Corrective Action Requirements for Owners and Operators of USTs (40 CFR part 280)	296	○	○	○	○	○	○	○
TSCA PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40 CFR part 761)	1	○	●	○	○	○	○	○
Legend: ○ = No requirements relevant to CWA section 311 (j)(5) requirements; ● = Partial requirements relevant to CWA section 311 (j)(5) requirements; ● = Requirements relevant to CWA section 311 (j)(5) requirements; *= Applicability of regulation is determined by criteria other than the identity of the chemical.								

Table 2-4: Matrix Comparing Other Federal Programs Reviewed to the CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and requires communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment testing, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change.
MSHA Regulations (30 CFR parts 46-50)	○	○	○	○	○	○	○
OSHA HAZWOPER (29 CFR 1910.120)	◐	○	○	○	◐	◐	○
OSHA Process Safety Management (29 CFR 1910.119)	○	○	○	○	○	○	○
OSHA EAP (29 CFR 1910.38)	○	○	○	○	○	○	○
PHMSA Hazardous Materials Regulations (49 CFR parts 171-179)	○	○	○	○	○	○	○
SMCRA (30 CFR parts 700-999)	○	○	○	○	○	○	○
US DHS CFATS (6 CFR part 27)	◐	○	○	○	◐	○	○
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements							

Table 2-5: Matrix Comparing State Regulatory Programs Reviewed to the CWA Hazardous Substance Facility Response Plan Required Program Elements

State	Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and required communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment training, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change
California	Hazardous Material Release Reporting, Inventory, and Response Plans (19 CCR 2620–2671)	N/A	○	○	○	○	○	○	○
	CalARP Program (19 CCR 2735–2785)	65	●	○	○	●	●	●	●
	HMMP and HMIS (California Fire Code) (CCR part 9 of Title 24)	N/A	●	○	●	●	●	○	○
Delaware	Aboveground Storage Tanks (DE Title 7 Reg. 1352)	296	●	○	●	●	○	●	●
Florida	Pollutant Discharge Prevention and Control Act (Chapter 376)	N/A	●	○	○	●	●	●	○
	Storage Tank Program	4	●	○	○	●	●	●	○

State	Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and required communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment training, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change
Georgia	Rules and Regulations for Flammable and Combustible Liquids (GA R&R 120-3-11)	N/A	○	○	○	○	○	○	○
	Criteria for Water Supply Watersheds (GRR 391-3-16-.01) and Groundwater Recharge Areas (GRR 391-3-16-.02(3)(d))	N/A	○	○	○	○	○	○	○
Illinois	Storage, Transportation, Sale and Use of Gasoline and Volatile Oils: Rules and Regulations Relating to General Storage (Title 41, part 160)	N/A	○	○	○	○	○	○	○
Indiana	Spills, Reporting, Containment, and Response (327 IAC 2-6.1)	296	○	○	●	●	○	○	○
	Secondary Containment of Aboveground Storage Tanks Containing Hazardous Materials (327 IAC 2-10)	296	●	○	●	●	○	●	●

State	Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and required communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment training, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change
Kansas	Aboveground storage tank	296	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kentucky	Wild rivers change of use permit standards. (400 KAR 4:140(15))	N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Louisiana	Emergency Notification Procedures (LAC 33:I.Chapter 39)	N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Spill Prevention and Control (LAC 33:IX Chapter 9)	296	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maine	Facility Emergency Response Plans (37-B MRSA 795)	66	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Massachusetts	Permit and Inspection Requirements of Aboveground Storage Tanks of More Than Ten Thousand Gallons Capacity (502 CMR 5.00)	N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Massachusetts Contingency Plan (310 CMR 40)	N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Michigan	Spillage of Oil and Polluting Materials (Mich. Admin. Code R324)	295	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

State	Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and required communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment training, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change
Minnesota	Aboveground Storage of Liquid Substances (Minn. R. 7151)	N/A	○	○	○	○	○	○	○
Nevada	CAPP	9	●	○	●	○	●	●	○
New Jersey	Discharges of Petroleum and Other Hazardous Substances Rules (N.J.A.C. 7:1E)	295	●	○	●	●	●	●	●
New York	Hazardous Substances Identification, Release Prohibition, and Release Reporting; Handling and Storage of Hazardous Substances (6 NYCRR parts 596-599)	294	○	○	○	○	●	○	○
Oregon	Oil and Hazardous Materials Emergency Response Requirements (OAR 340-142)	296	●	○	○	●	●	○	○
Pennsylvania	Administration of the Storage Tank and Spill Prevention Program (25 Pa. Code 245)	296	●	○	●	●	○	○	●

State	Regulation	# of CWA HS	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and required communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment training, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change
South Carolina	South Carolina Pollution Control Act	N/A	○	○	○	○	○	○	○
West Virginia	Aboveground Storage Tanks (W. Va. C.S.R. 47-63)	296	●	○	◐	●	◐	●	●
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311 (j)(5) requirements									

Table 2-6: Matrix Comparing Industry Standard Programs to the CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Plans for responding to CWA hazardous substance worst case discharge	Consistent with NCP and ACP	Identifies the Qualified Individual and requires communications	Identifies and ensures removal and mitigation personnel and equipment	Describes training, equipment testing, periodic unannounced drills, and response actions	Updated periodically	Resubmitted for approval of each significant change.
ACC RC14001: 2015 Technical Specification	●	○	●	●	●	●	○
ANSI/API RP-754 3rd Edition: Process Safety Performance	●	○	○	○	●	○	○
NFPA 1 - Fire Code	●	○	●	●	●	●	●
NFPA 30 - Flammable and Combustible Liquids Code	●	○	●	●	●	○	○
NFPA 400 - Hazardous Materials Code	●	○	●	○	●	○	●
NFPA 1620- Standard for Pre-Incident Planning	○	○	○	○	○	○	○
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ● = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311 (j)(5) requirements							

2.3 EPA Regulatory Programs

This section summarizes the EPA regulatory programs reviewed and identifies the requirements in each regulatory program that are relevant to CWA section 311(j)(5) requirements.

2.3.1 America's Water Infrastructure Act of 2018 Amendments to Section 1433 of the Safe Drinking Water Act (AWIA) (42 U.S.C. 300i-2)

2.3.1.1 *Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans*

Overview: On October 23, 2018, AWIA was signed into law. AWIA section 2013 requires community (drinking) water systems serving more than 3,300 people to develop or update risk assessments and emergency response plans (ERPs). The law specifies the components that the risk assessments and ERPs must address and establishes deadlines by which water systems must certify to EPA completion of the risk assessment and ERP.

Applicability criteria: AWIA section 2013 requires community (drinking) water systems serving more than 3,300 people to develop or update risk assessments and ERPs.

Equipment or operations at which requirements apply: The requirements apply at the drinking water facility-level.

Number/extent of CWA hazardous substance coverage: The applicability of this regulation is determined by criteria other than the identity of the chemical.

2.3.1.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-7 summarizes the requirements identified in AWIA that are relevant to CWA section 311(j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

Table 2-7: Summary of AWIA Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	AWIA	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	Sec. 2013
Consistent with NCP and ACP	○	N/A
Identifies the Qualified Individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	●	Sec. 2013
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A

Program Element	AWIA	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Updated periodically	◐	Sec. 2013
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.3.2 Chemical Accident Prevention Provisions, Risk Management Plan (40 CFR part 68)

2.3.2.1 Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans

Overview: The Chemical Accident Prevention Provisions, also known as the RMP Rule, require facilities that use certain listed, regulated substances to develop and implement a risk management plan based on a risk management program (RMP) developed at the facility. The RMP Rule is authorized by the Clean Air Act (CAA). The plan must identify the potential effects of a chemical accident, identify steps the facility is taking to prevent an accident, and spell out emergency response procedures should an accident occur. Regulated facilities must submit a single RMP for all covered processes at the facility; these plans must be revised and resubmitted at least every five years.

Applicability criteria: The RMP requirements apply to facilities (stationary sources) that manufacture, use, store, move onsite, or otherwise handle more than a threshold quantity of a regulated substance in a process. The 140 RMP-regulated substances, and their threshold quantities, are listed at 40 CFR 68.130. The list includes 77 acutely toxic chemicals that can cause serious health effects or death from short-term exposures, as well as 63 flammable gases and highly volatile flammable liquids that have the potential to form vapor clouds and explode or burn if released. The rule defines three program levels based on the processes' relative potential for public impacts and the level of effort needed to prevent accidents. For each program level, the rule defines requirements that reflect the level of risk and effort associated with the processes at that level. As a result, different facilities covered by the regulation may have different requirements depending on their processes.

Number/extent of CWA hazardous substance coverage: Thirty of the 296 CWA hazardous substances are covered by RMP.

2.3.2.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-8 summarizes the requirements identified in the RMP regulation that are relevant to CWA section 311(j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

Table 2-8: Summary of RMP Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	RMP	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	68.12; 68.20; 68.25; 68.28; 68.93
Consistent with NCP and ACP	●	68.95
Identifies the qualified individual and required communications	○	68.15; 68.95
Identifies and ensures removal and mitigation personnel and equipment	○	68.95
Describes training, equipment testing, periodic unannounced drills, and response actions	○	68.54; 68.56; 68.71; 68.73; 68.93; 68.96
Updated periodically	●	68.36; 68.95; 68.190; 68.195
Resubmitted for approval of each significant change	●	68.36; 68.190
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.3.3 Emergency Planning and Community Right-to-Know Act (EPCRA)

2.3.3.1 Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans

2.3.3.1.1 Emergency Planning Notification and Emergency Release Notification (40 CFR part 355)

Overview: The Emergency Planning Notification and Emergency Release Notification Rule requires regulated facilities to provide information necessary for developing and implementing local ERPs. It also requires emergency notification in the event of a release of a regulated chemical. The facility owner/operator must designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator. Emergency planning notification and emergency release notification are provided State Emergency Response Commission (SERC) or Tribal Response Committee (TERC) and Local Emergency Planning Committee (LEPC) or Tribal Emergency Planning Committee (TEPC) (40 CFR 355.20, 40 CFR 355.42).

Applicability criteria: The emergency planning notification requirements in 40 CFR part 355 apply to facilities with an Extremely Hazardous Substance (EHS) onsite in amounts equal to or greater than its designated threshold planning quantity (TPQ). EHSs are defined in Appendices A and B of 40 CFR part 355. There are 355 EHSs. Of these, 66 substances are designated as CWA hazardous substances.

The emergency release notification requirements in 40 CFR part 355 apply to facilities that produce, use, or store a hazardous chemical and release a reportable quantity of either an EHS or a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance as defined by CERCLA. All CWA hazardous substances are defined as CERCLA hazardous substances.

Equipment or operations at which requirements apply: These requirements apply to an entire facility.

Number/extent of CWA hazardous substance coverage: As discussed above, 66 EHSs are also designated as CWA hazardous substances, and all CWA hazardous substances are defined as CERCLA hazardous substances.

2.3.3.1.2 Hazardous Chemical Reporting: Community Right to Know (40 CFR part 370)

Overview: The Hazardous Chemical Reporting Rule establishes reporting requirements for facilities to provide state, tribal, and local officials with information on hazardous chemicals present at the facility. The information submitted by the facilities must also be made available to the public.

Applicability criteria: This rule applies to facilities that are required by the OSHA Hazard Communication Standard (HazCom) regulation to have a Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) available, and handle or store hazardous chemicals in quantities that equal or exceed the following thresholds⁶:

- For EHSs, either 500 pounds or the TPQ, whichever is lower. EHSs are defined in Appendices A and B of 40 CFR part 355.
- For all other hazardous chemicals, 10,000 pounds. A hazardous chemical is defined by OSHA's HazCom at 29 CFR 1910.1200(b)(2) as "any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency." Section 1910.1200(c) defines chemical as "any substance, or mixture of substances."⁷ This definition includes all CWA hazardous substances.

Equipment or operations at which requirements apply: The Hazardous Chemical Reporting Rule requirements in 40 CFR part 370 apply to individual chemicals rather than process equipment. For example, regulated facilities must submit an MSDS or SDS for the subject chemicals to the LEPC or TEPC, TERC or SERC, and the local fire department as described in § 370.30-33. Facilities are also required to submit a hazardous chemical inventory form (also known as "Tier II") by March 1 annually, for covered chemicals.

Number/extent of CWA hazardous substance coverage: All CWA hazardous substances are covered by this regulation, provided the thresholds discussed above are met.

2.3.3.1.3 Toxic Chemical Release Reporting: Community Right to Know (40 CFR part 372)

Overview: The Toxics Release Inventory (TRI) Program was established under EPCRA, which Congress promulgated to provide information to the public about the presence and release of toxic and

⁶ See 40 CFR 370.10.

⁷ Section 1910.1200(b)(6) provides categories for which this section does not apply, including "any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency" and "any hazardous substance as such term is defined by the CERCLA (42 U.S.C. 9601 et seq.) when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with Environmental Protection Agency regulations." Coverage of OSHA HazCom is further discussed in "Hazard Communication: Hazard Classification Guidance for Manufacturers, Importers, and Employers"; OSHA 3844-02- 2016; <https://www.osha.gov/Publications/OSHA3844.pdf>.

hazardous chemicals in their communities. As of 2021, the TRI Program covers 770 individual chemicals and 33 chemical categories.⁸

U.S. facilities in certain industry sectors must report annually how much of each chemical is released to the environment and/or managed through recycling, energy recovery and treatment. A "release" of a chemical means that it is emitted to the air or water, or placed in some type of land disposal.⁹ Among other information, facilities subject to TRI are required to report the total aggregate onsite releases of TRI chemicals to the environment for each calendar year, which includes discharges to water bodies. Additionally, facilities also report, as a range code in pounds, the maximum amount of the TRI chemical onsite at any time during the calendar year (maximum amount onsite).

Applicability Criteria: A facility is required to report to the TRI program if it is in a covered industry sector and exceeds the established employee and chemical thresholds. In addition, EPA has extended TRI reporting requirements to specific facilities.

Equipment or operations at which requirements apply: Covered facilities submit a reporting form to the TRI program for each chemical for which they exceed the applicable chemical threshold.

Number/extent of CWA hazardous substance coverage: 184 CWA hazardous substances are reportable under TRI.

2.3.3.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

⁸ <https://www.epa.gov/toxics-release-inventory-tri-program/what-toxics-release-inventory#What%20are%20TRI%20toxic%20chemicals?>

⁹ Ibid.

Table 2-9 summarizes the requirements identified in the EPCRA regulations reviewed that are relevant to CWA section 311 (j)(5) requirements. As shown in the table, EPA did not identify any relevant requirements in the Toxic Chemical Release Reporting Regulations. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311 (j)(5) requirements.

Table 2-9: Summary of Emergency Planning Notification and Emergency Release Notification Rule, Hazardous Chemical Reporting Rule, and Toxic Chemical Release Reporting Rule Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

EPCRA Regulations	Emergency Planning Notification and Emergency Release Notification Rule		Hazardous Chemical Reporting Rule		Toxic Chemical Release Reporting	
Program Element	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A	○	N/A	○	N/A
Consistent with NCP and ACP	○	N/A	○	N/A	○	N/A
Identifies the qualified individual and requires communications	◐	355.20	◐	370.41; 370.42	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A	○	N/A	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A	○	N/A	○	N/A
Updated periodically	○	N/A	○	N/A	○	N/A
Resubmitted for approval of each significant change	○	N/A	○	N/A	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements						

2.3.4 National Pollutant Discharge Elimination System (NPDES)

2.3.4.1 *Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans*

2.3.4.1.1 *National Pollutant Discharge Elimination System (NPDES) (40 CFR part 122)*

Overview: The CWA NPDES Permit Program, authorized by the CWA, controls water pollution by regulating point sources¹⁰ that discharge pollutants into waters of the United States. An NPDES permit establishes limits on what can be discharged, monitoring and reporting requirements, and other provisions to protect water quality. In essence, the permit translates general requirements of the CWA into specific provisions tailored to the operations of the facility discharging pollutants.¹¹ A NPDES general permit may be written to establish requirements that apply to eligible facilities with similar operations and types of discharges that obtain authorization to discharge under the general permit.

Applicability criteria: The NPDES program requires permits for the discharge of “pollutants” from any point source into waters of the United States. The term “pollutant” is defined at 40 CFR 122.2 as “dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials [except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)], heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.” The definition of pollutant is considered to include any CWA hazardous substance.

Equipment or operations at which requirements apply: The permit’s requirements apply to discharges at the facility level for pollutants.

Number/extent of CWA hazardous substance coverage: The applicability of this regulation is determined by criteria other than the identity of the chemical. However, the definition of pollutant is considered to include any CWA hazardous substance.

2.3.4.1.2 *General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR part 403)*

The national pretreatment program is a component of the CWA NPDES program. It is a cooperative effort of federal, state, and local environmental regulatory agencies established to protect water quality. Similar to how EPA authorizes state, tribal, and territorial governments to perform permitting, administrative, and enforcement tasks for discharges to surface waters under the NPDES program, EPA and states with authorized CWA NPDES pretreatment authority approve local municipalities to perform permitting, administrative, and enforcement tasks for discharges into the municipalities’ publicly owned treatment works (POTWs). The program is designed to:

- Protect POTWs’ infrastructure, and
- Reduce conventional and toxic pollutant levels discharged by industries and other nondomestic wastewater sources into municipal sewer systems and into the environment.¹²

EPA first promulgated the general pretreatment regulations, codified in 40 CFR part 403, in 1978. These regulations have been updated many times since then, but most recently in 2005 in a “Streamlining

¹⁰ Point sources are discrete conveyances such as pipes or man-made ditches. See CWA section 502(14); 40 CFR 122.2.

¹¹ <https://www.epa.gov/npdes/npdes-permit-basics>.

¹² <https://www.epa.gov/npdes/national-pretreatment-program>

Rule.” In addition to the requirements in part 403, national categorical pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users of POTWs in specific industrial subcategories are found under the appropriate subpart of 40 CFR chapter I, subchapter N.

As part of the requirements in 40 CFR part 403, POTWs are required to evaluate whether each Significant Industrial User needs a plan or other action to control Slug Discharges (see 40 CFR 403.8(f)(2)(vi)). A Slug Discharge is defined as any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, local limits, or Permit conditions. For Industrial Users identified as significant prior to November 14, 2005, this evaluation must have been conducted at least once by October 14, 2006; additional Significant Industrial Users must be evaluated within one year of being designated a Significant Industrial User. If the POTW decides that a slug control plan is needed, the pretreatment regulations outline three required elements with additional elements based onsite-specific determinations.

EPA also issued a Control of Slug Loadings to POTWs Guidance Manual¹³ which provides detailed information on how to evaluate industrial users to determine whether they need slug control plans as well as help POTWs decide which measures are necessary for different industrial users and which kinds of response measures are useful for specific situations.

Applicability criteria: The General Pretreatment Regulations apply to:

- (1) Pollutants from non-domestic sources covered by CWA Pretreatment Standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs;
- (2) POTWs which receive wastewater from sources subject to CWA National Pretreatment Standards;
- (3) States which have or are applying for CWA NPDES programs approved in accordance with section 402 of the CWA; and
- (4) Any new or existing source subject to CWA Pretreatment Standards. CWA National Pretreatment Standards do not apply to sources which Discharge to a sewer which is not connected to a POTW Treatment Plant (see 40 CFR 403.1(b)).

Equipment or operations at which requirements apply: The requirements for Significant Industrial Users related to a plan or other action to control Slug Discharges apply to the facility-level.

Number/extent of CWA hazardous substance coverage: The applicability of this regulation is determined by criteria other than the identity of the chemical.

2.3.4.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-10 summarizes the requirements identified in the NPDES regulations reviewed that are relevant to CWA section 311(j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

¹³ <https://www3.epa.gov/npdes/pubs/owm021.pdf>

Table 2-10: Summary of NPDES (40 CFR part 122) and National Pollutant Discharge Pretreatment Standards Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	NPDES		General Pretreatment Regulations	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	122.26	●	403.8
Consistent with NCP and ACP	○	N/A	○	N/A
Identifies the qualified individual and requires communications	○	N/A	●	403.8
Identifies and ensures removal and mitigation personnel and equipment	○	N/A	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A	●	403.8
Updated periodically	○	N/A	○	N/A
Resubmitted for approval of each significant change	○	N/A	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ● = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.3.5 Oil Pollution Prevention Regulations

2.3.5.1 Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans

2.3.5.1.1 Subpart A, Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils, SPCC (40 CFR part 112)

Overview: This portion of the Oil Pollution Prevention SPCC rule (Subparts A through C of 40 CFR part 112), authorized by the CWA, is designed to protect public health, public welfare, and the environment from potential harmful effects of oil discharges to navigable waters¹⁴ or adjoining shorelines.¹⁵ The Oil

¹⁴ The federal register uses the term “navigable waters” instead of “waters of the United States.”

¹⁵ Section 311(j)(1)(C) of the CWA, 33 U.S.C. 1251, requires the President to issue regulations establishing procedures, methods, equipment, and other requirements to prevent discharges of oil from vessels and facilities and to contain such discharges. The President has delegated the authority to regulate non-transportation-related onshore facilities under section 311(j)(1)(C) of the Act to EPA. By E.O., the President has delegated similar authority over transportation-related onshore facilities, deepwater ports, and vessels to DOT. DOI was delegated authority over other offshore facilities, including associated pipelines. Under E.O. 12777(b)(1), the DOI has redelegated the authority to regulate non-transportation-related offshore facilities landward of the coast line to EPA. [See 40 CFR

Pollution Prevention SPCC rule requires the owner or operator of non-transportation-related onshore or offshore facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters or adjoining shorelines to develop and implement SPCC Plans. The Oil Pollution Prevention SPCC regulation includes several elements to prevent oil spills, including a facility diagram, discharge prevention measures, discharge or drainage controls, oil discharge predictions, secondary containment or diversionary structures, requirements for inspections, transfer procedures, personnel training, and a five-year plan review.

Applicability criteria: The Oil Pollution Prevention SPCC rule applies to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which, due to its location, could reasonably be expected to discharge oil in quantities that may be harmful. The rule applies to facilities with an aboveground storage capacity of more than 1,320 gallons of oil, or a completely buried storage capacity of more than 42,000 gallons of oil. The rule has a number of exemptions, such as an exemption for any equipment, or operation or a vessel or transportation-related onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation (DOT) or the U.S. Department of the Interior (DOI).

While the Oil Pollution Prevention SPCC rule applies only to oil, it regulates oil mixed with other substances, including a CWA hazardous substance. The definition of oil can be found in 40 CFR 112.2: “Oil means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.”

Equipment or operations at which requirements apply: Some Oil Pollution Prevention SPCC rule requirements apply facility-wide and some apply to specific equipment. For example, 40 CFR 112.7(f) requires that all oil-handling personnel must be trained in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the facility SPCC Plan. Alternatively, the integrity testing and inspection provisions found at 40 CFR 112.8(c)(6) apply to bulk storage containers, valves, and piping.

Number/extent of CWA hazardous substance coverage: The Oil Pollution Prevention SPCC rule covers oil and oil mixed with other substances, including hazardous substances.

2.3.5.1.2 Subpart D, Response Requirements, FRP (40 CFR 112.20 and 112.21)

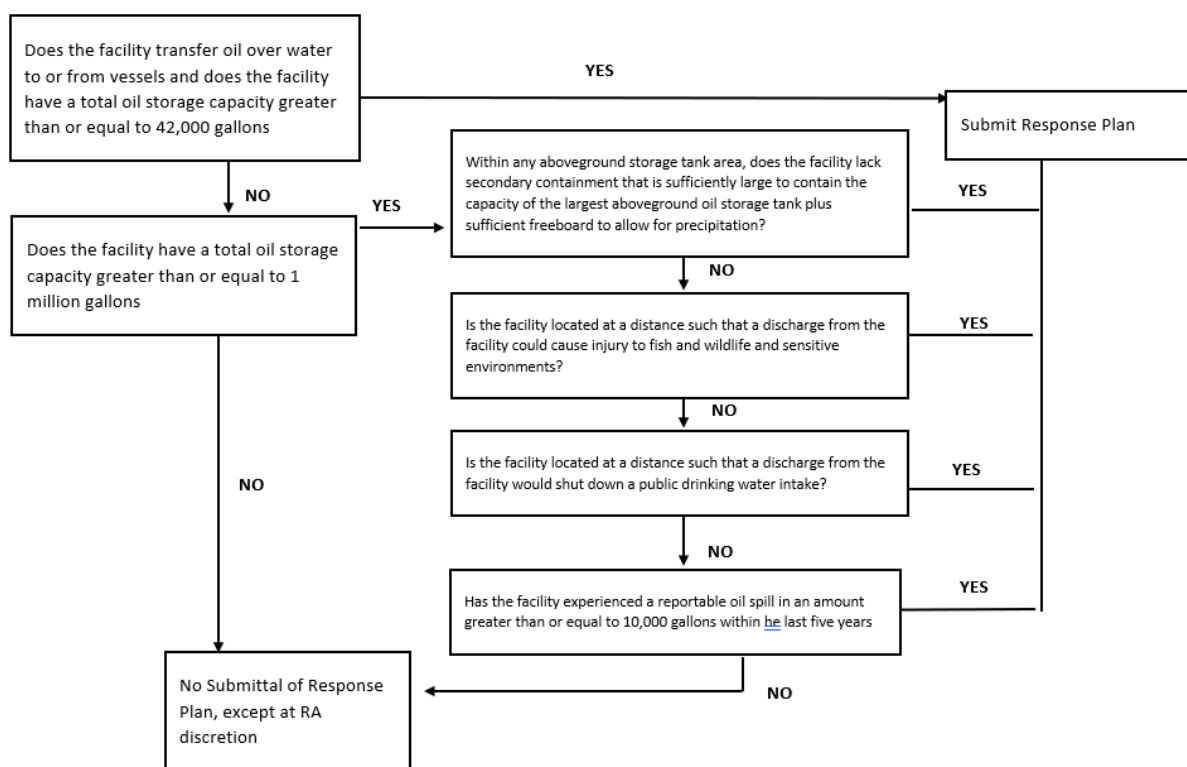
Overview: The Oil Pollution Prevention FRP rule requires certain facilities that store and use oil to prepare and submit an FRP that demonstrates a facility's preparedness to respond to a worst case oil discharge or substantial threat of such a discharge. The Oil Pollution Prevention FRP rule has the same CWA section 311(j)(5) statutory authority as this action and covers oil and hazardous substances mixed

part 112 Appendix B for the MOU among EPA, DOI, and DOT effective February 3, 1994. See 40 CFR part 112 Appendix A for the definitions of non-transportation-related and transportation-related facilities established in an MOU on November 24, 1971 (36 FR 24080)].

with oil (e.g., benzene in gasoline). Facilities that could cause "significant and substantial harm" are required to have their plans approved by an EPA Regional Administrator (RA).

Applicability Criteria: The Oil Pollution Prevention FRP rule applicability criteria are summarized in the diagram below:

Figure 2-1: Oil Pollution Prevention FRP Rule Applicability Flow Chart (Attachment C-1, Appendix C 40 CFR 112.20.)



Equipment or operations at which requirements apply: The Oil Pollution Prevention FRP rule applies at the facility-level.

Number/extent of CWA hazardous substance coverage: The Oil Pollution Prevention FRP rule applies to oil of any kind or in any form, as defined in 40 CFR 112.2, and oil mixed with other substances, including hazardous substances.

2.3.5.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-11 summarizes the requirements identified in the Oil Pollution Prevention SPCC and FRP regulations that are relevant to CWA section 311(j)(5) requirements. As shown in the table, EPA did not identify any relevant requirements for the Oil Pollution Prevention SPCC regulation. For the Oil Pollution Prevention FRP program, EPA identified three requirements relevant to CWA section 311(j)(5) requirements for hazardous substances. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

Table 2-11: Summary of Oil Pollution Prevention SPCC Rule and Oil Pollution Prevention FRP Rule Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	SPCC		FRP	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A	○	N/A
Consistent with NCP and ACP	○	N/A	◐	112.20
Identifies the qualified individual and requires communications	○	N/A	◐	112.20
Identifies and ensures removal and mitigation personnel and equipment	○	N/A	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A	○	N/A
Updated periodically	○	N/A	◐	112.20
Resubmitted for approval of each significant change	○	N/A	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.3.6 Pesticide Regulations

2.3.6.1 Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans

2.3.6.1.1 Pesticide Management and Disposal (40 CFR part 165)

The Pesticide Management and Disposal regulation establishes standards for pesticide containers and repackaging as well as label instructions to ensure the safe use, reuse, disposal, and adequate cleaning of the containers. Pesticide registrants and refillers (who are often distributors or retailers) must comply with the regulations and pesticide users must follow the label instructions for cleaning and handling empty containers.¹⁶ Specifically, the Pesticide Management Regulation at Part 165 establishes standards and requirements for pesticide containers, repackaging pesticides, and pesticide containment structures (40 CFR 165.1). Twenty-one states are authorized to implement their own pesticide containment regulations that are equivalent to, or more protective than, the federal containment regulations in 40 CFR part 165.

Applicability criteria: The requirements apply to chemicals that meet the definition of pesticide. Pesticide is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) section 2(u)¹⁷ as “(1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating

¹⁶ OSHA and EPA MOU from April 2012 Regarding Labeling and SDSs under FIFRA: <https://www.epa.gov/sites/production/files/2014-04/documents/pr2012-1.pdf>.

¹⁷ 7 U.S.C. 136(u).

any pest, (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant, and (3) any nitrogen stabilizer,” with some minor exceptions.

Equipment or operations at which requirements apply: Most requirements in 40 CFR part 165 apply to containers; pesticide manufacturers, distributors, and retailers are responsible for meeting these requirements. For example, 40 CFR 165.25(a) and 165.45(a) require pesticide containers to meet certain DOT packaging requirements even if the pesticide is not a DOT hazardous material. Similarly, 40 CFR 165.65(e) requires visual inspection of a refillable container before repackaging a pesticide product into it, to determine whether the container meets the necessary criteria with respect to continued container integrity, required markings, and openings.

The regulation also includes requirements that apply to the area where stationary containers are stored and/or pesticide dispensing areas. For example, 40 CFR 165.85 provides design and capacity requirements for secondary containment structures at these areas. The requirements at 40 CFR 165.90(a)(1) further state that containment structures must be managed “in a manner that prevents pesticides or materials containment pesticides from escaping from the containment structure.”

Number/extent of CWA hazardous substance coverage: The applicability of this regulation is determined by criteria other than the identity of the chemical. However, 109 designated CWA hazardous substances may be used as pesticides subject to the 40 CFR part 165 FIFRA requirements.

2.3.6.1.2 Pesticide Agricultural Worker Protection Standard (40 CFR part 170)

FIFRA regulates worker safety primarily through use directions and precautions on the pesticide label and labelling. In addition, agricultural use is subject to the FIFRA Worker Protection Standards in 40 CFR part 170. Farms, forests, nurseries, and greenhouses that handle pesticides used to produce agricultural plant crops must adopt workplace practices designed to reduce or eliminate exposure to pesticides and must follow procedures for responding to exposure-related emergencies.

Applicability criteria: The Worker Protection Standard requirements apply to agricultural pesticides that bear on their label a statement requiring compliance with the Worker Protection Standard. As discussed above, pesticide is defined at FIFRA section 2(u)¹⁸ as “(1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant, and (3) any nitrogen stabilizer,” with some minor exceptions.

Equipment or operations at which requirements apply: The Worker Protection Standard requirements in 40 CFR part 170 apply to agricultural employers of pesticide workers and handlers. For example, 40 CFR 170.501 requires employers to provide training to all pesticide handlers (who mix, load, and apply agricultural pesticides) every 12 months.

Number/extent of CWA hazardous substance coverage: The applicability of this regulation is determined by criteria other than the identity of the chemical. However, 109 designated CWA hazardous substances may be used as pesticides subject to the 40 CFR part 165 FIFRA requirements.

¹⁸ Ibid.

2.3.6.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-12 summarizes the requirements identified in the pesticide regulations that are relevant to CWA section 311(j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

Table 2-12: Summary of Pesticide Regulations Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Pesticide Regulations	Pesticide Management and Disposal		Pesticide Agricultural Worker Protection	
Program Element	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A	○	N/A
Consistent with NCP and ACP	○	N/A	○	N/A
Identifies the qualified individual and requires communications	○	N/A	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	165.90	◐	170.23; 170.501
Updated periodically	○	N/A	○	N/A
Resubmitted for approval of each significant change	○	N/A	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.3.7 Criteria for Classification of Solid Waste Disposal Facilities and Practices Subpart D—Standards for the Disposal of Coal Combustion Residuals (CCRs) in Landfills and Surface Impoundments (40 CFR part 257)

2.3.7.1 Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans

Overview: These regulations provide a comprehensive set of requirements for the safe disposal of CCRs, commonly known as coal ash, from coal-fired power plants. The rule establishes technical requirements for CCR landfills and surface impoundments under subtitle D of RCRA, the nation's primary law for regulating solid waste.

The CCR rule addresses the risks from coal ash disposal: leaking of contaminants into ground water, blowing of contaminants into the air as dust, and the catastrophic failure of coal ash surface impoundments. Additionally, the rule sets out recordkeeping and reporting requirements as well as the requirement for each facility to establish and post specific information to a publicly accessible website. This rule also supports the responsible recycling of CCRs by distinguishing safe, beneficial use from disposal. This regulation applies to owners and operators of new and existing landfills and surface impoundments that dispose or otherwise engage in solid waste management of CCR generated from the combustion of coal at electric utilities and independent power producers.

Applicability criteria: The regulation applies to existing and new CCR landfills and surface impoundments, including lateral expansions of any existing unit.

Equipment or operations at which requirements apply: The requirements apply at the landfill and surface impoundment level.

Number/extent of CWA hazardous substance coverage: The applicability of this regulation is determined by criteria other than the identity of the chemical.

2.3.7.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-13 summarizes the requirements identified in the CCRs regulation that are relevant to CWA section 311(j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

Table 2-13: Summary of CCR Provisions Relevant to CWA Hazardous Substance FRP Required Program Elements

Program Element	CCRs	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	◐	257.73; 257.74
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	●	257.73; 257.74
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A
Updated periodically	●	257.73; 257.74
Resubmitted for approval of each significant change	◐	257.73; 257.74
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.3.8 Resource Conservation and Recovery Act (RCRA)

2.3.8.1 *Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans*

2.3.8.1.1 *RCRA Standards Applicable to Generators of Hazardous Waste (40 CFR part 262)*

Overview: The regulations pertaining to RCRA Generators at 40 CFR part 262 establish cradle-to-grave hazardous waste management standards for generators of hazardous waste as defined by 40 CFR 260.10. These generator regulations ensure that hazardous waste is appropriately identified and handled in a manner that protects human health and the environment, while minimizing interference with daily business operations.

The regulations set forth a process for generators of solid waste to determine if their wastes are hazardous, and for generator category determination (based on the amount of hazardous waste generated each month). RCRA compliance entails manifest requirements, pre-transport (e.g., packaging, labeling) requirements, and recordkeeping and reporting requirements for both small and large quantity generators. Some generators are also subject to preparedness, prevention, and emergency response requirements.

Applicability criteria: The RCRA generators regulations apply to generators of hazardous waste. Hazardous wastes, defined in 40 CFR 261.3, may include specifically “listed” hazardous wastes or “characteristic” hazardous wastes evaluated based on four criteria (ignitability, corrosivity, reactivity, and toxicity). Some listed hazardous wastes are CWA hazardous substances (e.g., toluene), and some CWA hazardous substances would meet the criteria for characteristic hazardous wastes at certain concentrations if the CWA hazardous substance are present as waste. RCRA regulations apply only to solid and hazardous waste (as opposed to raw materials or intermediate products). RCRA establishes different requirements for very small, small, and large quantity generators of hazardous waste.

Number/extent of CWA hazardous substance coverage: 79 of the 296 CWA hazardous substance are “listed” hazardous wastes in 40 CFR 261.3. These 79 CWA hazardous substances are regulated by the RCRA generators regulations if the CWA hazardous substance is present as a waste. As discussed above, additional CWA hazardous substance may meet the criteria for characteristic hazardous wastes at certain concentrations or if they otherwise exhibit one of the hazardous waste characteristics if the CWA hazardous substance are present as waste.

2.3.8.1.2 *RCRA Standards for Owners and Operators of Hazardous Waste TSDF (40 CFR part 264 & part 265)*

Overview: The purpose of the RCRA TSDF Standards is to establish minimum national standards for the acceptable management of hazardous waste. 40 CFR part 264 applies to permitted TSDFs, while part 265 applies to interim status facilities. Both parts 264 and 265 provide general facility and unit-specific operating requirements to assure that a facility is operated in a manner that is protective of human health and the environment.

Applicability criteria: The standards apply to owners and operators of facilities that treat, store, or dispose¹⁹ of hazardous waste. A facility includes all contiguous land, structures, and appurtenances on or in the land used for treating, storing, or disposing of hazardous waste.

Equipment or operations at which requirements apply: The standards in 40 CFR parts 264 and 265 include facility-wide requirements, such as good housekeeping provisions, as well as unit-specific design and operating criteria. A single facility may consist of several types of operational units (e.g., containers, tank systems, surface impoundments, waste piles, landfills, incinerators). The unit-specific technical requirements are designed to prevent the release of hazardous waste into the environment. For example, 40 CFR 264.175 includes container-specific requirements governing design and operating requirements for storage area containment systems.

Number/extent of CWA hazardous substance coverage: See the discussion in Section 2.3.8.1.1.

2.3.8.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-14 summarizes the requirements identified in the RCRA regulations reviewed that are relevant to CWA section 311 (j)(5) requirements. The following subsections include the regulatory text for the citations identified as relevant to CWA section 311 (j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311 (j)(5) requirements.

Table 2-14: Summary of RCRA Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Generators Regulation ²⁰ (40 CFR part 262)		TSDF Regulations (40 CFR part 264 & part 265)	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	262.260; 262.261	●	<u>part 264:</u> 264.51; 264.52 <u>part 265:</u> 265.51; 265.52
Consistent with NCP and ACP	●	262.261	●	<u>part 264:</u> 264.52 <u>part 265:</u> 265.52
Identifies the qualified individual and requires communications	●	262.261; 262.264; 262.265	●	<u>part 264:</u> 264.52; 264.55; 264.56 <u>part 265:</u> 265.52; 265.55; 265.56
Identifies and ensures removal and mitigation personnel and equipment	●	262.261	●	<u>part 264:</u> 264.52; 264.196; 264.223; 264.227; 264.253; 264.304; 264.602 <u>part 265:</u> 265.52; 265.196; 265.224; 265.259; 265.303

¹⁹ The terms "facility," "treat," "store," and "dispose" all have specific definitions found in 40 CFR 260.10.

²⁰ Only Large Quantity Generators are required to have RCRA contingency plans.

Program Element	Generators Regulation ²⁰ (40 CFR part 262)		TSDF Regulations (40 CFR part 264 & part 265)	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Describes training, equipment testing, periodic unannounced drills, and response actions	○	262.17; 262.253	○	<u>part 264</u> : 264.15; 264.16; 264.33; 264.34 <u>part 265</u> : 265.15; 265.16; 265.31; 265.33; 265.34
Updated periodically	●	262.263	●	<u>part 264</u> : 264.54
Resubmitted for approval of each significant change	○	262.262	● (264) ○ (265)	<u>part 265</u> : 265.53
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ● = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.3.9 Technical Standards and Corrective Action Requirements for Owners and Operators of USTs (40 CFR part 280)

2.3.9.1 Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans

Overview: UST regulations, authorized by RCRA, are intended to reduce the chance of releases from USTs, detect leaks and spills when they do occur, and secure a prompt cleanup.²¹ The regulations require owners and operators to properly install UST systems and protect their USTs from spills, overfills, and corrosion; they also require correct filling practices to be followed. In addition, owners and operators must report new UST systems, suspected releases, and UST system closures; and they must keep records of operation and maintenance.

Applicability criteria: These requirements are specific to UST systems greater than 110 gallons in capacity that store either petroleum or CERCLA hazardous substances. All designated CWA hazardous substances are also defined as CERCLA hazardous substances.

Specific parts of the regulation (e.g., 40 CFR 280.42) apply to hazardous substance UST systems, which are defined in 40 CFR 280.12 as “an underground storage tank system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.” A petroleum UST system is defined in 40 CFR 280.12 as “an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances.

²¹ 40 CFR part 280 also contains UST requirements related to financial responsibility; see <https://www.epa.gov/ust/learn-about-underground-storage-tanks-usts#who>.

Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.”

Equipment or operations at which requirements apply: Some requirements apply to equipment. For example, the compatibility requirements at 40 CFR 280.32 state that UST systems must be made of or lined with materials that are compatible with the substance stored in the UST system. Other requirements apply to areas or processes. For example, areas directly surrounding the tanks are protected by requirements such as the spill and overfill control measures in 40 CFR 280.30, which calls for the constant monitoring of transfer operations.

Number/extent of CWA hazardous substance coverage: As discussed above, these requirements are specific to UST systems greater than 110 gallons in capacity that store either petroleum or CERCLA hazardous substances. All designated CWA hazardous substances are also defined as CERCLA hazardous substances.

2.3.9.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-15 summarizes the requirements identified in the UST regulations that are relevant to CWA section 311(j)(5) requirements.

Table 2-15: Summary of UST Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	UST	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.3.10 Toxic Substance Control Act: Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40 CFR part 761)

2.3.10.1 *Overview of Regulatory Program and Relevance to CWA Hazardous Substance Facility Response Plans*

Overview: TSCA provides EPA with the authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA specifically addresses the production, importation, processing, distribution in commerce, use, and disposal of PCBs. TSCA PCB regulations are codified at 40 CFR part 761. General requirements for handling PCB materials and equipment include: identifying and labeling the material (40 CFR 761.Subpart C); notifying EPA (40 CFR 761.205); properly storing the material (40 CFR 761.65); and properly disposing of the material (40 CFR 761.60-761.63, 761.70-761.75).

Applicability criteria: The requirements in Part 761 apply to all persons who manufacture, process, distribute in commerce, use, or dispose of PCBs or PCB Items. Substances that are regulated by this part include but are not limited to: dielectric fluids; solvents; oils; waste oils; heat transfer fluids; hydraulic fluids; paints or coatings; sludges; slurries; sediments; dredge spoils; soils; materials containing PCBs as a result of spills; and other chemical substances or combinations of substances, including impurities and byproducts and any byproduct, intermediate, or impurity manufactured at any point in a process. (See 40 CFR 761.1(b)(1).)

Most provisions in this part apply only if PCBs are present in concentrations above a specified level. For example, Storage and Disposal requirements codified in Subpart D state that spills and other uncontrolled discharges of PCBs at concentrations of ≥ 50 ppm constitute the disposal of PCBs. (See 40 CFR 761.50(a)(4).)

Equipment or operations at which requirements apply: PCB storage requirements apply to PCBs and PCB Items which have been removed from service and designated for disposal. PCB storage requirements also apply to any PCB liquids (50 ppm or greater) in PCB Containers which are being stored for authorized servicing of electrical equipment. Facilities being used for the storage of PCBs and PCB items designated for disposal must comply with the following storage unit requirements (40 CFR 761.65): adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items; adequate flooring that has continuous curbing with a minimum six inch high curb; a unit with no drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area; floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, non-porous surface; and the unit cannot be located at a site that is below the 100-year flood water elevation.

The regulations include PCB labeling requirements applicable to equipment or items that contain a PCB concentration greater than 50 ppm, and notification requirements applicable to companies or persons storing, transporting, or disposing of PCBs or conducting PCB research and development.

Number/extent of CWA hazardous substance coverage: The TSCA PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions cover one CWA hazardous substance, PCBs.

2.3.10.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-16 summarizes the requirements identified in the TSCA PCB regulations that are relevant to CWA section 311(j)(5) requirements. Appendix A includes the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

Table 2-16: Summary of TSCA PCBs Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	TSCA PCBs	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A
Consistent with NCP and ACP	◐	761.125
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.4 Other Federal Regulations

This section summarizes non-EPA federal regulatory program reviewed and identifies the requirements in each regulatory program relevant to CWA section 311 (j)(5) requirements.

2.4.1 MSHA Regulations (30 CFR parts 46-50)

2.4.1.1 Overview of Regulatory Programs Reviewed

The MSHA regulations, authorized by the Federal Mine Safety and Health Act (Mine Act), are health and safety standards for the protection of life and prevention of injuries in the Nation's mines. Several MSHA provisions contain requirements that address FRP program elements. The sections reviewed include training, hazard communication, as well as safety and health standards for surface and underground mines.

2.4.1.1.1 MSHA Training and Retraining of Miners Engaged in Shell Dredging or Employed at Sand, Gravel, Surface Stone, Surface Clay, Colloidal Phosphate, or Surface Limestone Mines (Training, Sand, and Gravel Mines) (30 CFR part 46)

Overview: Part 46 of these regulations require training for a subset of miners engaged in shell dredging or employed at sand, gravel, surface stone, surface clay, colloidal phosphate, or surface limestone mines. The purpose of this part is to set forth mandatory requirements for training and retraining of these miners.

Applicability criteria: All mines engaged in shell dredging or sand, gravel, surface stone, surface clay, colloidal phosphate, or surface limestone mines.

Equipment or operations at which requirements apply: Requirements in the rule apply to applicable sites (i.e., mines) that employ miners or independent contractors. For example, 30 CFR 46.5 requires that employers provide new miners with four hours of initial hazard training and 24 hours of training within 90 days.

2.4.1.1.2 MSHA Hazard Communication (HazCom) (30 CFR part 47)

Overview: Part 47 of these regulations addresses hazard communication. The purpose of this part is to reduce injuries and illnesses by ensuring that each operator identifies the chemicals at the mine; determines which chemicals are hazardous; establishes a HazCom program; and informs each miner who can be exposed, and other onsite operators whose miners can be exposed, about chemical hazards and appropriate protective measures.

Applicability criteria: These regulations apply to hazardous chemicals, defined differently for chemicals brought to the mine, chemicals produced at the mine, and chemical mixtures produced at the mine. These definitions, found in 30 CFR 47.21, use bases including 29 CFR part 1910, and EPA judges they include some CWA hazardous substances:

(a) Chemical brought to the mine – The chemical is hazardous when its MSDS or container label indicates it is a physical or health hazard; or the operator may choose to evaluate the chemical using the criteria in paragraphs (b) and (c) of this table.

(b) Chemical produced at the mine – The chemical is hazardous if any one of the following that it is a hazard:

(1) Available evidence concerning its physical or health hazards.

(2) MSHA standards in 30 CFR chapter I.

(3) OSHA, 29 CFR part 1910, subpart Z, Toxic and Hazardous Substances.

(4) American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices (2001).

(5) U.S. Department of Health and Human Services, National Toxicology Program (NTP), Ninth Annual Report on Carcinogens, January 2001.

(6) International Agency for Research on Cancer (IARC), Monographs and related supplements, Volumes 1 through 77.

(c) Mixture produced at the mine – (1) If a mixture has been tested as a whole to determine its hazards, use the results of that testing.

(2) If a mixture has not been tested as a whole to determine its hazards—

- (i) Use available, scientifically valid evidence to determine its physical hazard potential;
 - (ii) Assume that it presents the same health hazard as a non-carcinogenic component that makes up 1% or more (by weight or volume) of the mixture; and
 - (iii) Assume that it presents a carcinogenic health hazard if a component considered carcinogenic by NTP or IARC makes up 0.1% or more (by weight or volume) of the mixture.
- (3) If evidence indicates that a component could be released from a mixture in a concentration that could present a health risk to miners, assume that the mixture presents the same hazard

Equipment or operations at which requirements apply: Requirements in the rule apply to a site (i.e., mine). For example, 30 CFR 47.2 requires training miners on information about the physical and health hazards of chemicals in the miner's work area and the protective measures the miner can take against these hazards. Furthermore, 30 CFR 47.21 requires that the operator evaluate each chemical brought or produced on the mine property to determine if it is hazardous.

2.4.1.1.3 MSHA Training and Retraining of Miners (30 CFR part 48)

Overview: Part 48 of these regulations require training and retraining for miners in surface and underground mines.

Applicability criteria: As described in 30 CFR 48.21, these provisions include the mandatory requirements for surface (Subpart B) and underground (Subpart A) mines. This part does not apply to miners already covered by 30 CFR part 46.

Equipment or operations at which requirements apply: Requirements in the rule apply to sites (i.e., mines) that employ miners or independent contractors. For example, 30 CFR 48.23 requires operators of surface mines to establish training plans and submit them to MSHA for approval.

2.4.1.1.4 MSHA Notification, Investigation, Reports and Records of Accidents, Injuries, Illnesses, Employment, and Coal Production in Mines (Accident Notification) (30 CFR part 50)

Overview: Part 50 of these regulations sets forth requirements for operators to immediately notify MSHA of accidents and for operators to investigate accidents. This part includes provisions for accident reporting data elements and implements MSHA's authority to investigate accidents, injuries, and illnesses occurring in mines.

Applicability criteria: Accident is defined in 30 CFR 50.2 broadly and includes "An unplanned inundation of a mine by liquid or gas" as well as "An injury to an individual at a mine which has a reasonable potential to cause death." Therefore, the discharge of CWA hazardous substance is likely included in the scope of this part, and operators of mines would be subject to accident investigation and reporting requirements.

Equipment or operations at which requirements apply: Requirements in this rule apply to operators of mines, and therefore all mining operations are subject when an applicable accident occurs.

2.4.1.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

EPA did not identify any relevant requirements.

2.4.2 OSHA Regulations

2.4.2.1 Overview of Regulatory Programs Reviewed

Several OSHA regulations, authorized by the Occupational Safety and Health (OSH) Act, apply to CWA hazardous substances. The four regulatory programs reviewed are EAP, PSM, HAZWOPER, and the Hazard Communication Standard.

2.4.2.1.1 OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) (29 CFR 1910.120)

Overview: Part of OSHA's OSH Standards, Subpart H (Hazardous Materials), the HAZWOPER standard establishes procedures for clean-up operations involving hazardous waste. These standards cover employees involved in clean-up operations of hazardous substances (as used by OSHA at 29 CFR 1910.120) at uncontrolled hazardous waste sites; corrective actions involving clean-up procedures at sites covered by RCRA; voluntary clean-up operations at sites recognized as uncontrolled hazardous waste sites; operations involving hazardous waste that are conducted at treatment, storage, and disposal facilities; and emergency response operations for hazardous substance releases or substantial threats of releases.

Applicability criteria: The standard defines hazardous substance at 29 CFR 1910.120(a)(2)(iv), and includes all CERCLA hazardous substances, which also includes all CWA hazardous substances. Hazardous substances also include biologic agents, substances listed by the DOT as hazardous materials, and hazardous waste. Hazardous waste is defined in 29 CFR 1910.120(a)(2)(iv)(D) as "[a] waste or combination of wastes as defined in 40 CFR 261.3, or (B) [t]hose substances defined as hazardous wastes in 49 CFR 171.8." The applicability of this standard is dependent on the type of facility and involvement in clean-up operations. Facilities whose employees are involved in clean-up and emergency response operations are subject to the ERP requirements in 29 CFR 1910.120(q). Facilities where employees are not involved in clean-up and emergency response operations are required to comply with the EAP requirements in 29 CFR 1910.38.

Equipment or operations at which requirements apply: The standard has some facility-wide provisions (e.g., 29 CFR 1910.120(b)(4) requires employers to implement a written safety and health program that includes an organizational structure, a safety and health training program, and standard operating procedures for safety and health).

2.4.2.1.2 OSHA Process Safety Management of Highly Hazardous Chemicals (PSM) (29 CFR 1910.119)

Overview: Part of OSHA's OSH Standards, Subpart H (Hazardous Materials), this standard is intended to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals (releases which may result in toxic, fire, or explosion hazards). The standard contains requirements for the management of hazards associated with regulated processes, and establishes a comprehensive management program that integrates technologies, procedures, and management practices.

Applicability criteria: The regulation applies to processes that involve designated substances at or above the specified threshold quantities and category 1 flammable gases (as defined in 1910.1200(c)) or flammable liquids with a flashpoint below 100 °F (37.8 °C). Regulated substances, which include highly hazardous substances (as used in Appendix A), toxics, and reactives, are listed in Appendix A. There are 20 CWA hazardous substances on this list.

Equipment or operations at which requirements apply: The requirements apply to all equipment and operations of a covered process. For example, 29 CFR 1910.119(e) requires that the employer conduct a process hazard analysis on the processes covered by the standard; these analyses must be appropriate to the complexity of the process. Furthermore, 29 CFR 1910.119(j) sets forth requirements for mechanical integrity that apply to specific process equipment. For example, 29 CFR 1910.119(j)(4) describes the required inspections and testing on the process equipment.

2.4.2.1.3 OSHA Emergency Action Plans (EAP) (29 CFR 1910.38)

Overview: The OSHA EAP describes the minimum elements of an EAP whenever an OSHA standard requires such a plan.

Applicability criteria: The regulation applies to facilities subject to other OSHA regulatory programs. The substances regulated would be defined by that standard.

Equipment or operations at which requirements apply: The requirements of the standard apply to facilities that are involved in regulated processes. For example, 29 CFR 1910.119 requires employers to establish an EAP in accordance with this section that includes procedures for handling releases.

2.4.2.1.4 OSHA Hazard Communication Standard (HazCom) (29 CFR 1910.1200)

The Hazard Communication Standard (HazCom) describes procedures for communicating potential chemical hazards with employees.

Applicability criteria: This standard applies to all chemical manufacturers and importers as well as all employers who use or store chemicals. Chemical is defined in 29 CFR 1910.1200(b)(2) as “any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.” Because the OSHA HazCom applies to a broad universe of chemicals, EPA believes that all CWA hazardous substances are included in this definition.

Equipment or Operations at Which Requirements Apply: Requirements in this standard apply to employers whose employees may be exposed to any chemical under normal conditions of use or in a foreseeable emergency. These requirements are facility-wide and do not apply to, nor do they exempt, particular operations or equipment.

2.4.2.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-17 includes regulatory text citations from OSHA regulatory programs relevant to CWA requirements for CWA Hazardous Substance Facility Response Plans. EPA did not identify any relevant requirements in OSHA’s EAP, PSM, or Hazard Communication Standard regulations.

Table 2-17: Summary of Regulatory Citations for OSHA’s HAZWOPER Regulation Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	OSHA HAZWOPER	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	•	29 CFR 1910.120

Program Element	OSHA HAZWOPER	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	29 CFR 1910.120
Updated periodically	◐	29 CFR 1910.120
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.4.3 PHMSA Hazardous Materials Regulations (49 CFR parts 171-179)

2.4.3.1 Overview of Regulatory Programs Reviewed

Overview: DOT's PHMSA is responsible for regulating and ensuring the safe and secure movement of hazardous materials to industry and consumers by all modes of transportation, including pipelines. These regulations, which are authorized by the Transportation of Hazardous Material Law, govern safety aspects, including security, of the transportation of hazardous materials. While transportation, including pipelines, is not within EPA's jurisdiction for CWA section 311 (j)(5)(D)²² as delegated by E.O. 12777, the package integrity requirements may result in spill prevention benefits before the package is in transit or after it has reached its destination. The regulations include requirements for facilities that prepare materials for shipping, including requirements related to selecting and filling hazardous material packaging, labeling hazardous material packages, providing hazardous material emergency response information, and loading and unloading hazardous material.

Applicability criteria: The regulations apply to persons who transport hazardous materials in commerce or who cause hazardous materials to be transported in commerce; as well as to manufacturers of packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce. Hazardous material is defined in 49 CFR 171.8 as a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce; and has designated as hazardous under section 5103 of federal hazardous materials transportation law

²² Under E.O. 12777(b)(1), DOI has redelegated the authority to regulate non-transportation-related offshore facilities landward of the coast line to EPA (see 40 CFR part 112, Appendix B). An (MOU between DOT and EPA (36 FR 24080, November 24, 1971) established the definitions of transportation- and non-transportation-related facilities. An MOU among EPA, DOI, and DOT, effective February 3, 1994, has redelegated the responsibility to regulate certain offshore facilities from DOI to EPA.

(49 U.S.C. 5103). The term includes hazardous substances (as used in 49 CFR parts 171-179), hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR part 173.

Equipment or operations at which requirements apply: Requirements apply to packages, persons, and to manufacturers (facilities). For example, 49 CFR 173.24 provides standards under which packages used for the shipment of hazardous materials must be designed, constructed, maintained, filled, its contents so limited, and closed. 49 CFR 172.600 prescribes requirements for providing and maintaining emergency response information during transportation and at facilities where hazardous materials are loaded for transportation, stored incidental to transportation, or otherwise handled during any phase of transportation.

2.4.3.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

EPA did not identify any relevant requirements from PHMSA's Hazardous Materials Regulations.

2.4.4 SMCRA (30 CFR parts 700-999)

2.4.4.1 Overview of Regulatory Programs Reviewed

Overview: DOI's Office of Surface Mining Reclamation and Enforcement implements the SMCRA of 1977. The regulations in Chapter VII of 30 CFR, consisting of parts 700 through 999, establish the procedures through which the Act is implemented. Subchapter K (parts 810 through 828) provides the Permanent Program Performance Standards, and the minimum performance standards and design requirements to be adopted and implemented under a state regulatory program for coal exploration and surface coal mining and reclamation operations. According to 30 CFR 810.2, the objective of these requirements is to ensure that coal exploration and surface coal mining and reclamation operations are conducted in manners that are compatible with the environmental, social, and aesthetic needs of the Nation.

Applicability criteria: These regulations apply to all coal exploration and surface coal mining and reclamation operations. Additional parts of the regulation apply to underground mining activities conducted under regulatory programs, and certain special categories of surface coal mining and reclamation operations. There are no chemical-specific applicability criteria.

Equipment or operations at which requirements apply: Performance standards are established according to type of mine (e.g., coal exploration, surface mining activities, underground mining activities). The requirements apply to mines and substances. For example, for coal mine waste from surface mining activities, 30 CFR 816.81(c) disposal facilities must be constructed using current, prudent engineering practices and the design must be certified by a qualified registered Professional Engineer (PE).

2.4.4.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

EPA did not identify any relevant requirements.

2.4.5 United States Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) (6 CFR part 27)

2.4.5.1 Overview of Regulatory Programs Reviewed

Overview: The CFATS program under the DHS Cybersecurity and Infrastructure Security Agency (CISA) identifies and regulates high-risk facilities to ensure they have security measures in place to reduce the risk that certain hazardous chemicals are weaponized by terrorists. Under CFATS, a chemical facility is any establishment or individual that possesses or plans to possess any of the more than 300 chemicals of interest (COI) in Appendix A²³ at or above the listed screening threshold quantity (STQ). These facilities must report their chemicals to CISA via an online survey, known as a Top-Screen. CISA uses the Top-Screen information a facility submits to determine if the facility is considered high-risk and must develop a security plan.

Applicability Criteria: Under CFATS, a chemical facility is any establishment or individual that possesses or plans to possess any of the more than 300 COI in Appendix A at or above the listed STQ.

Number/extent of CWA hazardous substance coverage: Forty-one COIs are also CWA hazardous substances.

2.4.5.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-18 includes regulatory text citations from the CFATS regulatory program relevant to CWA requirements for CWA hazardous substance FRPs.

Table 2-18: Summary of Regulatory Citations for CFATS Provisions Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	CFATS	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	6 CFR 27.230
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	●	6 CFR 27.230

²³ <https://www.cisa.gov/publication/appendix-final-rule>

Program Element	CFATS	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5 State Regulations

As discussed in Section 2.1.2, EPA reviewed several state programs to identify potentially relevant requirements. The following state programs did not have any requirements relevant to CWA section 311(j)(5).

- California
 - Hazardous Material Release Reporting, Inventory, and Response Plans (19 CCR parts 2620–2671)²⁴
- Georgia
 - Rules and Regulations for Flammable and Combustible Liquids (GA R&R 120-3-11)²⁵
 - Criteria for Water Supply Watersheds (GRR 391-3-16-.01) and Groundwater Recharge Areas (GRR 391-3-16-.02(3)(d))²⁶
- Illinois
 - Storage, Transportation, Sale and Use of Gasoline and Volatile Oils: Rules and Regulations Relating to General Storage (Title 41, part 160)²⁷
- Kansas
 - Aboveground Storage Tank²⁸
- Kentucky
 - Wild rivers change of use permit standards. (400 KAR 4:140(15))²⁹
- Louisiana
 - Emergency Notification Procedures (LAC 33:I.Chapter 39)³⁰
- Massachusetts
 - Permit and Inspection Requirements of AST of More Than Ten Thousand Gallons Capacity (502 CMR 5.00)³¹

²⁴

[https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I58E13FD0D45111DEA95CA4428EC25FA0&originationContext=documenttoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I58E13FD0D45111DEA95CA4428EC25FA0&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default))

²⁵ <http://rules.sos.ga.gov/GAC/120-3-11>

²⁶ <http://rules.sos.ga.gov/gac/391-3-16>

²⁷ <https://www.ilga.gov/commission/jcar/admincode/041/04100160sections.html>

²⁸ <https://www.kdhe.ks.gov/DocumentCenter/View/9029/Overview-of-Aboveground-Storage-Tanks-PDF?bidId=>

²⁹ <https://apps.legislature.ky.gov/law/kar/400/004/140.pdf>

³⁰ <https://www.deq.louisiana.gov/page/written-notification-procedures>

³¹ <https://www.mass.gov/doc/502-cmr-5-permit-and-inspection-requirements-of-above-ground-storage-tanks-of-more-than-ten/download>

- Massachusetts Contingency Plan (310 CMR 40)³²
- Minnesota
 - Aboveground Storage of Liquid Substances (Minn. R. 7151)³³
- South Carolina
 - South Carolina Pollution Control Act³⁴

The following subsections include information for the state programs where EPA identified relevant requirements.

2.5.1 California

2.5.1.1 *Overview of Regulatory Programs Reviewed*

California regulates state-designated hazardous waste and hazardous materials by a Unified Program that ensures consistency throughout the state in regard to administrative requirements, permits, inspections, and enforcement. The California Environmental Protection Agency (CalEPA) oversees the statewide implementation of the Unified Program and its 81 certified local government agencies, known as Certified Unified Program Agencies (CUPAs), which apply regulatory standards established by five different state agencies.³⁵ EPA identified the following environmental and emergency management programs within the Unified Program to have requirements relevant to CWA section 311(j)(5):

- CalARP Program
- HMMP and HMIS (California Fire Code)

2.5.1.1.1 *California Accidental Release Prevention (CalARP) Program (19 CCR parts 2735–2785)*

Overview: The purpose of the CalARP Program is to prevent accidental releases of substances (as defined in the California regulation) that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. Businesses that handle more than a threshold quantity of a regulated substance are required to develop an RMP. An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential.³⁶

Applicability criteria: The rule applies to owners and operators of stationary sources³⁷ with more than a threshold quantity of a regulated substance in a process. Regulated substances are listed in tables in § 2770.5. Various requirements apply, depending on the quantity of the substance handled.

Equipment or operations at which requirements apply: The requirements apply to processes. For example, § 2735.5 states that the RMP shall include a regulation that reflects all covered processes.

³² <https://www.mass.gov/doc/310-cmr-400000-massachusetts-contingency-plan-mcp-1/download>

³³ <https://www.revisor.mn.gov/rules/pdf/7151/2014-01-18%2009:33:03+00:00>

³⁴ <https://www.scstatehouse.gov/code/t48c001.php>

³⁵ <https://calepa.ca.gov/cupa/>

³⁶ <https://dtsc.ca.gov/california-accidental-release-prevention-program-calarp-fact-sheet/>

³⁷ “Stationary source” means any buildings, structures, equipment, installations, or substances emitting stationary activities that belong to the same industrial group, are located on one or more contiguous properties, are under the control of the same person (or persons under common control), and from which an accidental release may occur. The rule provides additional information on what a stationary source is and is not, at § 2735.3(rrr).

2.5.1.1.2 HMMP and HMIS (California Fire Code)

Overview: The California Department of Forestry and Fire Protection (CAL FIRE) Office of the State Fire Marshal (OSFM) is responsible for ensuring the implementation of the California Fire Code HMMP and HMIS of the Unified Program (required in Chapter 50 of the Fire Code). The purpose of the fire code element is to enhance the coordination and communication among the CUPA, participating agencies (PAs), fire agencies, and business stakeholders.³⁸ Appendix H of the California Fire Code provides instructions for preparing HMMPs and HMISs.

Applicability criteria: California Fire Code Chapter 50 applies to all hazardous materials, with exceptions noted in § 5001.1. According to Chapter 2, the California Fire Code (Definitions), hazardous materials are defined as “those chemicals or substances which are physical hazards or health hazards as defined and classified in this chapter, whether the materials are in usable or waste condition.” A physical hazard is “a chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer (solid or liquid), oxidizing gas, pyrophoric (solid, liquid or gas), unstable (reactive) material (solid, liquid or gas) or water-reactive material (solid or liquid).” A health hazard is “a classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term ‘health hazard’ includes chemicals that are toxic, highly toxic and corrosive.”

Equipment or operations at which requirements apply: Requirements apply to procedures. For example, H3.2.8 describes the employee training required for the HMMP.

2.5.1.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-19: Summary of California Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	CalARP		HMMP and HMIS (California Fire Code)	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation
Plans for responding to CWA hazardous substance worst case discharge	●	19 CCR 2735.5	●	CCR part 9 of Title 24, Ch. 50 § 5001
Consistent with NCP and ACP	○	N/A	○	N/A
Identifies the qualified individual and requires communications	○	N/A	●	CCR part 9 of Title 24, Ch. 50 § 5003
Identifies and ensures removal and mitigation personnel and equipment	●	19 CCR 2765.2	●	CCR part 9 of Title 24 Ch. 50 § H4

³⁸ <https://osfm.fire.ca.gov/divisions/pipeline-safety-and-cupa/certified-unified-program-agency-cupa/hazardous-materials-management-plan-and-hazardous-materials-inventory-statement/>

Program Element	CalARP		HMMP and HMIS (California Fire Code)	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	19 CCR 2745.8	◐	CCR part 9 of Title 24 § H3
Updated periodically	●	19 CCR 2765.2	○	N/A
Resubmitted for approval of each significant change	●	19 CCR 2765.2	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.5.2 Delaware

2.5.2.1 Overview of Regulatory Programs Reviewed

2.5.2.1.1 AST regulations (Title 7:1352)

Overview: Delaware’s AST regulations are intended to address existing and potential sources of pollution that may result from ASTs. To ensure the prevention and early detection of a release of a state regulated substance should one occur, new ASTs are required to meet acceptable design and installation criteria, and existing ASTs are required to be retrofitted by a schedule set forth to comparable standards. AST design criteria promulgated under these regulations will minimize the risk of regulated substances impacting the environment. Release confirmation and remediation standards are set forth to require the clean-up of any release that does occur.

Applicability criteria: ASTs are defined by the regulation as a single aboveground containment vessel having a capacity of greater than 250 gallons and currently or previously having contained regulated substances on or after January 1, 1992. A “regulated substance” is defined as a liquid or gas that: contains one percent (1%) or more of a hazardous substance as defined in CERCLA and any amendments thereto; or contains 0.1 percent (0.1%) or more of a carcinogen as defined by EPA in the IRIS April 2002 and as updated; or is a petroleum product, or contains one percent (1%) or more of a petroleum product, or was originally derived from a petroleum or petroleum containing product including crude oil or any fraction thereof, which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute); or contains heating fuel as defined in this part; or is a substance determined by the Secretary through regulation to present a risk to public health or welfare or the environment if released into the environment.

An AST includes all ancillary aboveground pipes and dispensing systems up to the first permanently installed point of isolation, and all ancillary underground pipes and dispensing systems. The regulation provides several exclusions to the definition of the term “AST” that limit the regulation’s applicability.³⁹

Equipment or operations at which requirements apply: Requirements apply to equipment (e.g., tanks). For example, Section 8.1.2 requires that overfill equipment be installed on all ASTs constructed after the date of promulgation of the regulations.

2.5.2.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-20: Summary of Delaware Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	AST	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	DE Title 7 Reg. 1352 7.0
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	●	DE Title 7 Reg. 1352 7.1.1.8
Identifies and ensures removal and mitigation personnel and equipment	●	DE Title 7 Reg. 1352 7.0
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A
Updated periodically	●	DE Title 7 Reg. 1352 7.1.3

³⁹ The term “AST,” under Delaware’s regulation, does not include any of the following: septic tank; pipeline facility (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968 as amended [49 U.S.C. 1671 et seq.], or the Hazardous Liquid Pipeline Safety Act of 1979 as amended [49 U.S.C. 2001 et seq.]; or pipelines regulated pursuant to 33 U.S.C. and 49 CFR part 195 Transportation of Hazardous Liquids by Pipeline; or pipelines regulated pursuant to 46 U.S.C. and 33 CFR part 154. Facilities transferring oil or hazardous material in bulk and 33 CFR part 156 oil and hazardous material transfer operations; surface impoundment, pit, pond, or lagoon; liquid trap or associated gathering lines directly related to oil or gas production or gathering operations; flow through process tank that contains a regulated substance or substances and that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of material during the operation of the process. Flow through process tanks include, but are not limited to, seal tanks, surge tanks, bleed tanks, check and delay tanks, phase separator tanks, or tanks in which physical or chemical change of a material is accomplished. A flow through process tank does not include (1) a tank that is used for the storage of material before its introduction into a production process; (2) a tank that is used for storage of products or by-products from the production process; (3) a tank that is used only to recirculate material; or (4) a tank that stores fuels for combustion subsequently used to provide heat for a process or transformers, regulators, and breakers used for the sole purpose of electrical power distribution and transmission; containment vessels operated as part of a publicly owned treatment works as defined pursuant to Title 7 Del.C. Ch. 60, Environmental Controls, § 6002 and regulated pursuant to Title 7 Del.C. Ch. 60, Environmental Controls, § 6003 or used for the storage and conveyance of wastewater to a treatment plant regulated in accordance with the requirements of the CWA; or an AST that has met the requirements of permanent closure in accordance with these regulations.

Program Element	AST	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Resubmitted for approval of each significant change	●	DE Title 7 Reg. 1352 7.1.3
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.3 Florida

2.5.3.1 Overview of Regulatory Programs Reviewed

2.5.3.1.1 Pollutant Discharge Prevention and Control Act (Chapter 376)

Overview: Florida's Pollutant Discharge Prevention and Control Act provides requirements related to the transfer of pollutants between vessels, onshore facilities and vessels, offshore facilities and vessels, and terminal facilities within the state of Florida and Florida waters.⁴⁰ This act outlines requirements to deal with hazards and damage posed by transfers of pollutants and requires the containment and removal of pollutants.

Applicability criteria: The act requires that any ship operating in Florida waters that has a storage capacity of 10,000 gallons of pollutants as fuel or cargo must have in writing a ship-specific discharge prevention and control contingency plan. The act also requires that every owner or operator of a terminal facility (onshore and offshore facilities, deepwater ports, pipelines, etc.) must have a discharge prevention and response certificate to legally operate in Florida. To obtain the certificate, the terminal facilities must provide information related to containment and removal equipment at the facility and terms of agreement and operation plan of any discharge cleanup organization to which the owner or operator of the facility belongs.⁴¹

Equipment or operations at which requirements apply: The requirements apply to vessels that transport substances across waters and terminal facilities. Terminal facilities are defined as a structure, motor vehicle, pipeline, or any equipment capable of being used for pumping, storing, handling, or transferring pollutants over, under, or across any waters.

2.5.3.1.2 Storage Tank Program

Overview: Florida's Storage Tank Program provides requirements for sources of pollution from AST that store regulated substances.

Applicability criteria: This rule applies to facilities and storage tank systems installed after January 11, 2017 that contain regulated substances with AST capacities greater than 550 gallons. Owners and operators of facilities containing only mineral acid storage tank systems and owners and operators of mineral acid storage tank systems with capacities of greater than 110 gallons containing mineral acids are only required to comply with rule 62-762.891. There are several exemptions to applicability listed in 62-762.301.⁴²

⁴⁰ [Chapter 376 - 2011 Florida Statutes - The Florida Senate \(flsenate.gov\)](http://www.flsenate.gov/Chapter376-2011-Florida-Statutes)

⁴¹ <https://edis.ifas.ufl.edu/publication/FE585>

⁴² [62-762.301: Applicability - Florida Administrative Rules, Law, Code, Register - FAC, FAR, eRulemaking \(flrules.org\)](http://www.flrules.org/government/government_rules/62-762.301-Applicability-Florida-Administrative-Rules-Law-Code-Register-FAC-FAR-eRulemaking)

Equipment or operations at which requirements apply: Requirements apply to owners and operators of facilities with AST.

2.5.3.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-21: Summary of Florida Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Pollutant Discharge Prevention and Control Act		Storage Tank Program	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	376.051	●	62-762.891
Consistent with NCP and ACP	○	N/A	○	N/A
Identifies the qualified individual and requires communications	○	N/A	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	●	376.065	●	62-762.891
Describes training, equipment testing, periodic unannounced drills, and response actions	●	376.0705	●	62-762.891
Updated periodically	●	376.065	●	62-762.891
Resubmitted for approval of each significant change	○	N/A	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ● = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.5.4 Indiana

2.5.4.1 Overview of Regulatory Programs Reviewed

2.5.4.1.1 Secondary Containment of Aboveground Storage Tanks (AST) Containing Hazardous Materials (327 IAC 2-10)

Overview: This rule provides requirements related to the reporting, containment, and response to state-designated hazardous substances spills.

Applicability criteria: This rule applies to the reporting and containment of, and the response to, those spills of hazardous substances, EHS, petroleum, and objectionable substances that are of a quantity, type, and present in duration and location as to damage the waters of the state. “Hazardous substance” is defined in 42 U.S.C. 9601(14). “Extremely hazardous substance” means a substance identified pursuant to 42 U.S.C. 11002 and 11004 (40 CFR part 355 Appendix A). “Objectionable substances” is

defined in 327 IAC 2-6.1-4(11) and means substances that are (1) of a quantity and a type and (2) present for a duration and in a location so as to damage waters of the state. This definition excludes hazardous substances (as used by Indiana), EHS, petroleum, and mixtures thereof.

Equipment or operations at which requirements apply: Requirements apply to the facility operator. For example, the regulation requires that any person who operates, controls, or maintains any mode of transportation or facility from which a spill occurs must, upon discovery of a reportable spill, contain the spill and undertake actions needed to accomplish the spill response efforts.

2.5.4.1.2 Spills Reporting, Containment, and Response (327 IAC 2-6.1)

Overview: This rule provides the requirements for secondary containment structures and spill response plans for the purpose of preventing released hazardous materials from entering surface water or groundwater at facilities storing liquid hazardous materials in an AST or storage area or operating a transfer area. The intent of this rule is to provide for the short-term containment of discharges.

Applicability criteria: The secondary containment requirements of this rule apply to owners or operators of a facility storing liquid hazardous materials in an AST or storage area, or operating a transfer area for liquid hazardous materials if the aboveground tank, storage area, or transfer area is constructed after the effective date of this rule and includes: (1) construction activities scheduled after the effective date of this rule; or (2) construction activities scheduled before the effective date of this rule only when physical construction did not begin within ninety (90) days after the effective date of this rule. An existing aboveground tank, storage area, or transfer area must be brought into compliance with this rule when replaced or relocated. The spill response plan requirements of this rule apply to owners or operators of a facility storing liquid hazardous materials in an AST or storage area or operating a transfer area for liquid hazardous materials. The rule also contains several categories to which the rule does not apply, including AST, storage areas, or transfer areas for agricultural chemicals and those regulated by the Indiana fire prevention and building safety commission.

"Hazardous material" is defined in IC 13-11-2-96(a) and includes mixtures that contains at least one of the substances specified in IC 13-11-2-96(a). The definition is a broad and includes a material or waste that has been determined to be hazardous or potentially hazardous to human health, to property, or to the environment by EPA, DOT, OSHA, or the Nuclear Regulatory Commission.

Equipment or operations at which requirements apply: Requirements in this rule apply to tanks/equipment, areas, and the facility operator. For example, Section 2-10-5 requires storage tanks or storage areas located inside of a building to have a floor compatible with the material being stored. Section 2-10-8 requires the owner or operator of the facility to prepare a response plan for the facility.

2.5.4.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-22: Summary of Indiana Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Spills, Reporting, Containment, and Response		Secondary Containment of AST Containing Hazardous Materials	
	Requirements Relevant to requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A	●	327 IAC 2-10-8
Consistent with NCP and ACP	○	N/A	○	N/A
Identifies the qualified individual and requires communications	◐	327 IAC 2-6.1-7	●	327 IAC 2-10-8
Identifies and ensures removal and mitigation personnel and equipment	◐	327 IAC 2-6.1-7	●	327 IAC 2-10-8
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A	○	N/A
Updated periodically	○	N/A	●	327 IAC 2-10-8
Resubmitted for approval of each significant change	○	N/A	◐	327 IAC 2-10-8
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements				

2.5.5 Louisiana

2.5.5.1 *Overview of Regulatory Programs Reviewed*

2.5.5.1.1 *Spill Prevention and Control (LAC 33:IX Chapter 9)*

Overview: This rule provides requirements related to contingency planning and implementation of operating procedures and best management practices to prevent and control discharge of pollutants from spill events.⁴³

Applicability criteria: This rule applies to all substances listed in LAC 33:I:3931, oil, and any other substance that the administrative authority declares, in AST of certain sizes, and equipment or structures used for the transfer of applicable substances to/from transportation vehicles or vessels.

⁴³ [33v09-201605-Water-Quality.pdf \(louisiana.gov\)](#); Chapter 9.

Equipment or operations at which requirements apply: The requirements of this rule apply to facilities with AST containing regulated substances and equipment or structures used for the transfer of regulated substances.

2.5.5.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-23: Summary of Louisiana Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Elements

Program Element	Spill Prevention and Control	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	LAC 33:IX Chapter 9 § 907
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	◐	LAC 33:IX Chapter 9 § 907-B
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	LAC 33:IX Chapter 9 § 907-I
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.6 Maine

2.5.6.1 Overview of Regulatory Programs Reviewed

According to the Maine Department of Environmental Protection,⁴⁴ facilities in Maine that handle oil or hazardous matter may be subject to state and federal requirements for spill prevention and emergency planning, depending on the types and quantities of materials at the site. These requirements are intended to protect public health, safety, and the environment by preventing accidental discharges and by planning ahead for response procedures in the event of a discharge. The relevant state statute⁴⁵ is summarized below.

2.5.6.1.1 Facility Emergency Response Plans (ERP) (37-B MRSA 795)

Overview: This law provides requirements for the preparation of written plans, annual tests, and emergency response equipment at facilities with EHSs.

⁴⁴ <http://www.maine.gov/dep/waste/spcc/spccissueprofile.html>.

⁴⁵ The spill prevention and response planning requirements were reviewed at the statute level as corresponding regulations were not identified.

Applicability criteria: The law applies to operators of any facility where an EHS is present in a quantity above the threshold planning quantity, based on the definition of EHSs in 40 CFR part 355, Appendices A and B, along with their threshold planning quantities.

Equipment or operations at which requirements apply: The requirements (to prepare a written plan, perform an annual test, and to have available emergency response equipment) apply to facilities. For example, each facility must, as part of the written plan, identify the facility emergency coordinator and that person's alternate (§ 795.1.A).

2.5.6.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-24: Summary of Maine Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Facility ERPs	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	37-B MRSA 795
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	●	37-B MRSA 795
Describes training, equipment testing, periodic unannounced drills, and response actions	●	37-B MRSA 795
Updated periodically	◐	37-B MRSA 795.2
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.7 Michigan

2.5.7.1 *Overview of Regulatory Programs Reviewed*

2.5.7.1.1 *Spillage of Oil and Polluting Materials (MCL 324.2001 through 324.2009)*

Overview: This rule includes requirements for secondary containment, developing pollution incident prevention plans, and preparing pollution incident reports.

Applicability criteria: This rule requires facilities that have liquid polluting materials to provide secondary containment, develop pollution incident prevention plans, and prepare pollution incident reports. The rule exempts several categories of facilities, including facilities that manage polluting materials in excess of threshold quantities if the polluting materials are managed in containers that do not individually exceed 10 gallons or 100 pounds in capacity and that are located indoors at a facility

that is designed, constructed, maintained, and operated to prevent any spilled polluting material from being released directly or indirectly to the surface or groundwaters of the state.

This rule is applicable to oil and polluting material, where polluting material is defined as all of the following: oil; salt; any material specified in Table 1 in R 324.2009; any compound or product that contains 1 percent, or more, by weight, of any material listed in paragraphs (i) through (iii) of the subdivision based on the MSDS formulation information for the compounds or products.

Equipment or operations at which requirements apply: Requirements apply to either equipment or areas, depending on the provisions. For example, R324.2004 requires the surveillance of all manufacturing, processes, treatment systems, and storage and other areas so that any polluting material loss can be detected in a timely manner. Secondary containment requirements in R324.2005 are for outdoor storage areas. Other requirements, such as those to develop, maintain, and operate a pollution incident prevention plan as per R324.2006, apply to the entire facility.

2.5.7.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-25: Summary of Michigan Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Spillage of Oil and Polluting Materials	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	R 324.2006
Consistent with NCP and ACP	○	R 324.2006
Identifies the qualified individual and requires communications	●	R 324.2006
Identifies and ensures removal and mitigation personnel and equipment	●	R 324.2006
Describes training, equipment testing, periodic unannounced drills, and response actions	○	R 324.2006
Updated periodically	●	R 324.2006
Resubmitted for approval of each significant change	○	R 324.2006
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ○ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.8 Nevada

2.5.8.1 *Overview of Regulatory Programs Reviewed*

2.5.8.1.1 *Chemical Accident Prevention Program (CAPP)*

Overview: This rule includes requirements to protect residents from effects of improper handling of hazardous chemicals or explosives when chemicals are produced, used, or stored in Nevada, or explosives are created for sale in Nevada. Requirements protect state employees working with

hazardous chemicals, protect the environment from accidental or unexpected releases of hazardous chemicals, and ensure the safe handling of hazardous chemicals and explosives.⁴⁶ CAPP requirements fall into one of three categories; accident prevention, emergency response, or public right-to-know. Through the accident prevention program, facilities are required to: evaluate and mitigate hazards, understand the design parameters of their processes and operate within the appropriate design limits, prepare comprehensive operating procedures, thoroughly train operators in those procedures, and maintain the facility equipment and instruments to prevent premature failure. Through the emergency response program, facilities are required to develop an action plan for dealing with potential emergency situations and they are further required to coordinate emergency response activities with local responders, to ensure that the responders are prepared to deal with the emergencies appropriately. Through the public right-to-know aspect of CAPP, all information disseminated by the facilities is available to the public, as are all site inspection reports generated by CAPP staff.⁴⁷

Applicability criteria: This rule applies to facilities that have select, highly hazardous substances in quantities above defined thresholds.⁴⁸

Equipment or operations at which requirements apply: Requirements apply to owners or operators of facilities if they determine the process is subject to CAPP.

⁴⁶ <https://ndep.nv.gov/air/chemical-accident-prevention>

⁴⁷ <https://ndep.nv.gov/air/chemical-accident-prevention/about-capp>

⁴⁸ Highly hazardous substances and threshold quantities are listed at: <https://ndep.nv.gov/air/chemical-accident-prevention/regulated-substance>.

2.5.8.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-26: Summary of Nevada Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	CAPP	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	NAC 459.95332
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	◐	NAC 459.95341
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	NAC 459.95376
Updated periodically	●	NAC 459.95442
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.9 New Jersey

2.5.9.1 Overview of Regulatory Programs Reviewed

2.5.9.1.1 Discharges of Petroleum and Other Hazardous Substances Rules (N.J.A.C. 7:1E)

Overview: This regulation covers the discharge of state-designated hazardous substances. These rules set forth guidelines and procedures to be followed by all persons in the event of a discharge of a hazardous substance. They also set forth certain registration, reporting, design, operational, and maintenance requirements for owners and operators of major facilities and transmission pipelines that handle hazardous substances.

Applicability criteria: Major facilities are required to meet the standards of this rule. “Major facility”⁴⁹ means facilities located on one or more contiguous or adjacent properties owned and/or operated by the same person, having the total aggregate, combined storage capacity of:

- 20,000 gallons or more of hazardous substances other than petroleum or petroleum products. Hazardous substance is defined in Appendix A of the rule.
- 200,000 gallons or more of for hazardous substances of all kinds.

⁴⁹ Transmission pipelines are not considered “major facilities” and the rule includes special provisions related to circumstances when vessels are considered major “facilities.”

- An equivalent measure as defined in this section for hazardous substances that are not commonly measured by volume.

Equipment or operations at which requirements apply: Requirements apply to tanks, areas, and facilities. For example, Section 7:1E-2.2 provides specific requirements for the tank and related equipment to ensure integrity and compatibility with the material stored. Section 7:1E-2.3 provides specific requirements for loading or unloading areas. Section 7:1E-2.6 provides facility drainage and secondary containment requirements that apply to the whole facility.

2.5.9.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-27: Summary of New Jersey Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Discharges of Petroleum and Other Hazardous Substances Rules	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	7:1E-4.3
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	●	7:1E-4.3
Identifies and ensures removal and mitigation personnel and equipment	●	7:1E-4.3
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	7:1E-4.2
Updated periodically	●	7:1E-4.9
Resubmitted for approval of each significant change	●	7:1E-4.5
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.10 New York

2.5.10.1 Overview of Regulatory Programs Reviewed

New York's Chemical Bulk Storage program regulates state-designated hazardous substances in four regulatory parts. Part 596 covers bulk storage facility registration, part 597 identifies covered hazardous substances and regulates release reporting, part 598 regulates handling and storage of hazardous substances, and part 599 regulates construction of new tank systems for bulk storage. The applicability of the four parts shares similarities, using the facility and threshold criteria defined in part 596 and the regulated hazardous substance list defined in part 597.

For all parts, a list of covered hazardous substances can be found in 6 NYCRR 597.3. For each chemical, there is an associated reportable quantity for air and land/water. Hazardous substances do not include

petroleum but may be covered if a mixture contains both hazardous substances as well as petroleum as defined by 6 NYCRR 597.1(b)(8).

2.5.10.1.1 Hazardous Substance Bulk Storage Facility Registration (6 NYCRR part 596)

Overview: This regulation covers the registration of state-designated hazardous substances storage facilities as a means to regulate hazardous substances. These rules primarily set forth the guidelines for which facilities must register, application procedures, associated fees, and requirements for the sale of hazardous substances.

Applicability criteria: This regulation applies to storage facilities that have one of the following:

- An aboveground tank system used to store hazardous substances that has a tank with a capacity of 185 gallons or greater;
- An underground tank system used to store hazardous substances with any storage capacity; or
- A container used to store 1,000 kg or more of a hazardous substance at the facility for 90 consecutive days or longer.⁵⁰

Equipment or operations at which requirements apply: This regulation applies to facilities that contain ASTs as well as individual tanks. For example, the application requirements are set forth in 6 NYCRR 596.2 and require facilities to individually register each tank system.

2.5.10.1.2 Hazardous Substance Identification, Release Prohibition, and Release Reporting (6 NYCRR part 597)

Overview: This regulation sets forth criteria for identifying state-designated hazardous substances, includes a list of covered hazardous substances (which is used by parts 596–599), identifies reportable quantities for spills or releases of hazardous substances, prohibits any unauthorized releases, and establishes reporting requirements for releases.

Applicability criteria: This regulation applies to any unauthorized⁵¹ spill or release.⁵² 6 NYCRR 597.3 contains a list of over 1,400 hazardous substances that are covered by this regulation as well as the minimum RQs that trigger the reporting requirements to air, land, or water.

Equipment or operations at which requirements apply: Reporting requirements are applicable to a facility whenever an unauthorized spill or release event occurs. These requirements include criteria for how quickly the release must be reported and to whom, and the information that must be included.

⁵⁰ Applicability for facilities is defined in 6 NYCRR 596.1.

⁵¹ Authorized is defined as “possession of a valid license, permit, or certificate issued by an agency of the state of New York or the federal government, or an order issued by the department or United States Environmental Protection Agency under applicable statutes, rules or regulations regarding the possession or release of hazardous substances or otherwise engaging in conduct which is exempt under applicable statutes, rules or regulations from the requirements of possessing such a license, permit, certificate or order.”

⁵² Release is defined as “any unauthorized pumping, pouring, emitting, emptying, overfilling, spilling, leaking, leaching or disposing, directly or indirectly, of a hazardous substance, or any other substance which results in the formation of a hazardous substance upon release, so that the substance or any related constituent thereof, or any degradation product of such a substance or of a related constituent thereof, may enter the environment.”

2.5.10.1.3 Handling and Storage of Hazardous Substances (6 NYCRR part 598)

Overview: This regulation covers the handling and storage of state-designated hazardous substances to protect public health, safety, welfare, and the environment. This includes requirements for the following spill prevention topics: preparation of a spill prevention report, operating procedures for transfers, secondary containment systems for aboveground tank systems, testing and inspection, recordkeeping, maintenance and repair, facility closure, operator training, emergency response, and corrective action.

Applicability criteria: This part applies to bulk storage facilities that fit the criteria for threshold quantities in Part 596 and for hazardous substances as defined in 6 NYCRR 597.3.

Equipment or operations at which requirements apply: This regulation applies to facilities that contain ASTs as well as individual tanks. For example, 6 NYCRR 598.1(k) describes the spill prevention report that must be prepared by the owner or operator of a facility. 6 NYCRR 598.7(b) requires annual inspections for all tanks in aboveground tank systems. 6 NYCRR 598.4 includes operating requirements for hazardous substance transfers, which is enforced for a facility but must be applied for each transfer.

2.5.10.1.4 Standards for New Hazardous Substance Tank Systems (6 NYCRR part 599)

Overview: This regulation sets forth standards for newly constructed tank systems containing state designated hazardous substances.

Applicability criteria: This part applies to bulk storage facilities that meet the criteria for threshold quantities in 6 NYCRR 596; and for hazardous substances as defined in 6 NYCRR 597.3 for all new tank systems constructed, designed, and installed after February 11, 1995.

Equipment or operations at which requirements apply: This regulation applies to new tank system installations. For example, 6 NYCRR 599.11 describes requirements for installation of aboveground tank systems and sets forth requirements for foundation design, emergency response equipment, inspection, qualification of installers, and instructions for installation.

2.5.10.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-28: Summary of New York Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Hazardous Substances Identification, Release Prohibition, and Release Reporting; Handling and Storage of Hazardous Substances	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	○	N/A
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	○	N/A

Program Element	Hazardous Substances Identification, Release Prohibition, and Release Reporting; Handling and Storage of Hazardous Substances	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Describes training, equipment testing, periodic unannounced drills, and response actions	●	6 NYCRR 598.12
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.11 Oregon

2.5.11.1 Overview of Regulatory Programs Reviewed

2.5.11.1.1 OAR 320-142: Oil and Hazardous Materials Emergency Response Requirements

Overview: This regulation covers emergency response actions, reporting obligations, and follow-up actions in response to a spill or release or threatened spill or release of oil or hazardous materials. These requirements include immediate actions in the event of a spill or release, required release reporting, clean-up standards, disposal of recovered spill materials, incident management, and emergency operations.

Applicability criteria: This regulation applies to any person owning or having control over any oil or hazardous material spilled or released or threatening to spill or release, with some exceptions (e.g., spills or releases from petroleum UST systems must be reported and remediated in accordance with OAR 340-122-0205 through 0360).⁵³ Hazardous material is defined in 320-142-0005 as one of the following: hazardous waste as defined in ORS 466.005; radioactive waste as defined in ORS 469.300, radioactive material identified by the Energy Facility Siting Council under 469.605, and radioactive substances as defined in 453.005; communicable disease agents as regulated by the Health Division under ORS 431 and 433.010 to 433.045 and 433.106 to 433.990; hazardous substances designated by EPA under section 311 of the Federal Water Pollution Control Act, P.L. 92-500, as amended; substances listed by EPA in 40 CFR part 302 — Table 302.4 (List of Hazardous Substances and Reportable Quantities) and amendments; material regulated as a Chemical Agent under ORS 465.550; material used as a weapon of mass destruction or biological weapon; pesticide residue; and dry cleaning solvent as defined by ORS 465.200(9).

Equipment or operations at which requirements apply: The requirements of this regulation apply to facilities that control hazardous material or oil as well as individual spill events. Facilities are required to report when a spill occurs at their facility. For example, a facility must develop an emergency response/contingency plan as defined in 340-142-0030 and is required to report in the event of a release or spill.

⁵³ Hazardous material is defined in OAR 340-142-0005.

2.5.11.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-29: Summary of Oregon Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Oil and Hazardous Materials Emergency Response Requirements	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	OAR 340-142-0030
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A
Identifies and ensures removal and mitigation personnel and equipment	●	OAR 340-142-0030
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	OAR 340-142-0060
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.12 Pennsylvania

2.5.12.1 *Overview of Regulatory Programs Reviewed*

2.5.12.1.1 *25 Pa. Code 245 - Administration of the Storage Tank and Spill Prevention Program*

Overview: This regulation generally regulates storage tanks (above and underground) for the purpose of spill prevention. Facilities must apply and obtain permits before the installation or operation of a storage tank which is covered by this regulation. The regulation also covers operations and maintenance for leak prevention, leak detection, and storage tank inspections. There are also provisions for reporting releases and remedial action.

Applicability criteria: This regulation includes ASTs with a capacity greater than 250 gallons and USTs with a capacity greater than 110 gallons that contain CERCLA hazardous substances with exceptions as noted (e.g., tanks with 1,100 gallons or less capacity used to store motor fuel for noncommercial purposes).⁵⁴

Regulated substances are defined in 245.1 as “An element, compound, mixture, solution or substance that, when released into the environment, may present substantial danger to the public health, welfare or the environment” and include “[a] substance defined as a hazardous substance in section 101(14) of

⁵⁴ Definitions of AST and HS can be found in 25 Pa. Code § 245.1.

CERCLA, including hazardous substances that are liquid or gaseous, or suspended therein regardless of holding temperature, but not including a substance regulated as a hazardous waste under Subtitle C of the Resource Conservation and Recovery Act of 1976” (42 U.S.C.A. 6921—6931). In addition, regulated substances include “other substances determined by the Department by regulation whose containment, storage, use or dispensing may present a hazard to the public health and safety or the environment, but not including gaseous substances used exclusively for the administration of medical care.”

Equipment or operations at which requirements apply: This regulation applies to facilities that contain ASTs as well as individual tanks. For example, 245.222 requires owners of ASTs to file a Spill Prevention Response Plan. At the tank level, 245.2 requires that storage tanks are constructed with lining that is compatible with the stored substances.

2.5.12.2 Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-30: Summary of Pennsylvania Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Administration of the Storage Tank and Spill Prevention Program	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	25 Pa. Code 245.512
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	●	25 Pa. Code 245.512
Identifies and ensures removal and mitigation personnel and equipment	●	25 Pa. Code 245.512
Describes training, equipment testing, periodic unannounced drills, and response actions	○	N/A
Updated periodically	○	N/A
Resubmitted for approval of each significant change	●	35 PA Code 6021.901
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.5.13 West Virginia

2.5.13.1 Overview of Regulatory Programs Reviewed

2.5.13.1.1 W. Va. C.S.R. 47-63 - Aboveground Storage Tanks (AST)

Overview: This legislative rule governs the registration, construction, installation, upgrading, use, inspection, maintenance, testing, and closure of ASTs in West Virginia.

Applicability criteria: This regulation applies to owners of ASTs containing at least 1,320 gallons of liquid fluids, with some exceptions (e.g., equipment or machinery containing substances for operational purposes, such as lubricating oil reserves for pumps and motors). Certain sections apply only to all ASTs (e.g., all ASTs are subject to the registration requirements in Section 47-63-3) and others are only applicable for “regulated” ASTs, which are defined as either level 1 or level 2 (e.g., only regulated tanks are subject to the maintenance and operation requirements in Section 47-63-5). Regulated level-1 ASTs include:

- An AST containing a CERCLA hazardous substance or a substance on EPA’s “Consolidated List of Chemicals Subject to EPCRA, CERCLA, and § 112(r) of the CAA” (referred to as the “List of Lists”) in a concentration of one percent or greater;
- An AST located within a Zone of Critical Concern (ZCC), source water protection area, or public surface water influenced groundwater supply source zone; and
- An AST with a capacity of 50,000 gallons or more, regardless of contents or location.

Regulated level-2 ASTs include any tanks located within a Zone of Peripheral Concern (ZPC) that is not a level-1 regulated tank.⁵⁵

Equipment or operations at which requirements apply: This regulation has requirements for owners of ASTs as well as the individual tanks containing state-designated hazardous substances. For example, 47-63-5.5 requires owners or operators of a regulated AST facility to develop a single spill prevention response plan for all regulated ASTs. However, 47-63-8 includes design, construction, and installation standards that are required for each regulated storage tank.

2.5.13.2 *Regulatory Text Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements*

Table 2-31: Summary of West Virginia Regulatory Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	AST	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Regulatory Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	W. Va. C.S.R. 47-63-4.2
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	●	W. Va. C.S.R. 47-63-5.5
Identifies and ensures removal and mitigation personnel and equipment	●	W. Va. C.S.R. 47-63-5.5c
Describes training, equipment testing, periodic unannounced drills, and response actions	●	W. Va. C.S.R. 47-63-5.5
Updated periodically	●	W. Va. C.S.R. 47-63-5.5

⁵⁵ The applicability of ASTs used in this regulation is defined in The Aboveground Storage Act (W.Va. Code 22-30).

Resubmitted for approval of each significant change	●	W. Va. C.S.R. 47-63-5.5
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.6 Industry Standards

Many industry groups and organizations publish voluntary consensus standards that may include provisions to plan for worst case discharges of CWA hazardous substances. EPA focused its review on industry fire codes and standards because their broad scope, potential response requirements, and widespread application increased their potential relevance to CWA hazardous substances. EPA also reviewed the American Chemistry Council (ACC) Responsible Care (RC) 14001 and the American National Standards Institute (ANSI)/American Petroleum Institute (API) Recommended Practice (RP) 754 because of their inclusion of emergency response planning elements.

2.6.1 American Chemistry Council (ACC) Responsible Care (RC) 14001 Technical Specification Standard

2.6.1.1 Overview of Industry Standards Reviewed

RC is an initiative first adopted by the Chemistry Industry Association of Canada (CIAC) to improve environmental, health, and safety performance. Implementation of RC leads to improved efficiency, lower environment, health, and safety costs, and improved relations with stakeholders.⁵⁶

The ACC developed the RC14001 technical specification standard as part of its RC certification process.⁵⁷ RC14001 combines the ACC RC initiatives with the 1996 International Organization for Standardization (ISO) 14001 Environmental Management System standard. RC14001, which was amended in 2015. RC14001 allows companies to obtain a certification that their management system meets the ISO 14001 standard and the added RC elements.

EPA reviewed the ACC RC14001 technical specification standard to identify requirements relevant to the requirements in CWA section 311(j)(5). The review is summarized below.

2.6.1.2 Industry Standard Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-32: Summary of Industry Standard Citations for ACC RC14001 Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	ACC RC14001	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	◐	Section 6.1.1 Section 8.2
Consistent with NCP and ACP	○	N/A

⁵⁶ <https://store.americanchemistry.com/products/rc14001%C2%AE-2015-technical-specification>

⁵⁷ Ibid.

Program Element	ACC RC14001	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Identifies the qualified individual and requires communications	◐	Section 7.2 Section 7.4.1 Section 7.4.2 Section 7.4.3
Identifies and ensures removal and mitigation personnel and equipment	◐	Section 8.2
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	Section 8.2
Updated periodically	●	Section 8.2
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.6.2 American National Standards Institute (ANSI)/American Petroleum Institute (API) Recommended Practice (RP) 754

2.6.2.1 Overview of Industry Standards Reviewed

ANSI/API provide recommended practices for process safety in the petrochemical industry. ANSI/API published the third edition of the RP-754 in August 2021.⁵⁸ RP-754 identifies leading and lagging performance indicators for process safety in the refining and petrochemical industries. RP-754 breaks the performance indicators into four tiers. Tier 1 and Tier 2 represent loss of primary containment events of greater and lesser consequence, respectively; Tier 3 represents challenges to safety systems; and Tier 4 represents operating discipline and management system performance indicators. Tier 1 and 2 provide retrospective analysis and lessons to prevent recurrence while Tier 3 and 4 provide an opportunity to identify and correct weaknesses in the barrier system.

2.6.2.2 Industry Standard Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Table 2-33: Summary of Industry Standard Citations for ANSI/API RP-754 Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	ANSI/API RP-754	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	◐	Introduction Section 4 Section 9.5
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	○	N/A

⁵⁸ <https://www.apiwebstore.org/publications/item.cgi?87d8f88a-a0fa-4e9e-95fd-a8ca94a24f97>

Program Element	ANSI/API RP-754	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	◐	Section 7.2.2 Section 7.2.3 Section 8.3
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.6.3 National Fire Protection Association (NFPA) and the International Code Council (ICC)

2.6.3.1 Overview of Industry Standards Reviewed

The National Fire Protection Association (NFPA) and the International Code Council (ICC) have published standards that address fire prevention and safety, and also contain provisions to mitigate discharges and other hazards. Both NFPA standards and International Fire Code (IFC), published by the ICC, contain standards on hazardous materials. For example, IFC's hazardous materials provisions include secondary containment, safety information, inventory limits, and engineering controls. NFPA 30 outlines requirements for safety information, hazard review, containment, and emergency response. Additionally, regulations such as OSHA's PSM standard (described in Section 0 of this document), require employers to select the recognized and generally accepted good engineering practices (RAGAGEP) with which their equipment and procedures must comply. Such RAGAGEP may include NFPA standards. RAGAGEP is also required by the RMP Rule. The Oil Pollution Prevention SPCC regulation requires that a plan must be prepared in accordance with good engineering practices (40 CFR 112.7).

The IFC and NFPA are often enacted as regulations by states or local communities and frequently contain provisions for hazardous materials or flammable liquids. According to a state-wide summary compiled by Specialty Technical Publishers, 31 states have adopted (with amendments or modifications) the IFC standards and 16 states have adopted (with amendments or modifications) either NFPA 1 or NFPA 101.⁵⁹ Additionally, some states have adopted other NFPA codes related to hazardous materials or flammable and combustible liquids. For example, Georgia has adopted NFPA 30 with amendments. Because of the nearly universal adoption of NFPA and IFC fire codes by states, EPA chose to review these industry codes for potential discharge prevention requirements.

The following states have adopted IFC as their fire code: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Georgia, Idaho, Indiana, Iowa, Kansas, Minnesota, Mississippi, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, Washington, and Wyoming.

⁵⁹ The state fire code summary can be found in the rulemaking docket, Docket ID: EPA-HQ-OLEM-2021-0585.

The following states have adopted NFPA 1 as their fire code: Connecticut, Delaware, Florida, Hawaii, Kentucky, Louisiana, Maine, Maryland, Michigan, Nebraska, New Hampshire, Rhode Island, Texas, Vermont, West Virginia, and Wisconsin.

NFPA and IFC use the same definitions for hazardous materials and flammable and combustible liquids. Hazardous material is defined in NFPA 400 3.3.604 as “a chemical or substance that is classified as a physical health hazard material or a health hazard material, whether the chemical or substance is in usable or waste condition.” Combustible liquid is defined in NFPA 30 3.3.33.1 as “any liquid that has a closed-cup flash point at or above 100°F (37.8°C)” and flammable liquid is defined in NFPA 30 3.3.33.2 as “any liquid that has a closed-cup flash point at or above 100°F (37.8°C) . . . and a Reid vapor pressure that does not exceed an absolute pressure of 40 psi (276 kPa) at 100°F (37.8°C).”

EPA reviewed the IFC and several NFPA standards that set forth specific requirements for hazardous materials. EPA did not identify requirements related to emergency response in the IFC codes. The NFPA standards reviewed are described in this section.

2.6.3.1.1 NFPA 1: Fire Code

NFPA 1 is a fire code that addresses the minimum requirements for building construction, operation, and maintenance, and hazardous material management to ensure fire safety. NFPA 1 contains references to over 130 other NFPA codes and standards. Chapter 60 (Hazardous Materials) and Chapter 66 (Flammable and Combustible Liquids) were selected for review.

2.6.3.1.2 NFPA 30: Flammable and Combustible Liquids Code

This code applies to the storage, handling, and use of flammable and combustible liquids, including waste liquids, as defined, and classified within. The code’s provisions are intended to reduce the hazard to a degree consistent with reasonable public safety, without undue interference with public convenience and necessity, of operations that require the use of flammable and combustible liquids.

2.6.3.1.3 NFPA 400: Hazardous Materials Code

NFPA 400 consolidates fundamental safeguards for the storage, use, and handling of hazardous materials in all occupancies and facilities. It provides safety information for any facility or occupancy that stores, handles, or uses one or more of the covered classes of hazardous materials.

2.6.3.1.4 NFPA 1620: Standard for Pre-Incident Planning

This standard provides criteria for developing pre-incident plans for use by personnel responding to emergencies.

2.6.3.2 Industry Standard Citations Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

2.6.3.2.1 NFPA 1 – Fire Code

Table 2-34: Summary of Industry Standard Citations for NFPA 1 – Fire Code Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	NFPA 1 - Fire Code	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	•	Chapter 60

Program Element	NFPA 1 - Fire Code	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	◐	Chapter 60
Identifies and ensures removal and mitigation personnel and equipment	◐	Chapter 60
Describes training, equipment testing, periodic unannounced drills, and response actions	●	Chapter 60.5
Updated periodically	●	Chapter 60
Resubmitted for approval of each significant change	●	Chapter 60
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.6.3.2.2 NFPA 30 – Flammable and Combustible Liquids Code

Table 2-35: Summary of Industry Standard Citations for NFPA 30 – Flammable and Combustible Liquids Code Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	NFPA 30 - Flammable and Combustible Liquids Code	
	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	◐	Chapter 6
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	◐	Chapter 6
Identifies and ensures removal and mitigation personnel and equipment	◐	Chapter 6
Describes training, equipment testing, periodic unannounced drills, and response actions	●	Chapter 6
Updated periodically	○	N/A
Resubmitted for approval of each significant change	○	N/A
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ◐ = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

2.6.3.2.3 NFPA 400 – Hazardous Materials Code

Table 2-36: Summary of Industry Standard Citations for NFPA 400 – Hazardous Materials Code Relevant to CWA Hazardous Substance Facility Response Plan Required Program Elements

Program Element	Requirements Relevant to Requirements in CWA Section 311(j)(5)	Citation for Relevant Requirements
Plans for responding to CWA hazardous substance worst case discharge	●	Chapter 7
Consistent with NCP and ACP	○	N/A
Identifies the qualified individual and requires communications	●	Chapter 6
Identifies and ensures removal and mitigation personnel and equipment	○	N/A
Describes training, equipment testing, periodic unannounced drills, and response actions	●	Chapter 6
Updated periodically	○	N/A
Resubmitted for approval of each significant change	●	Chapter 7
Legend: ○ = No requirements relevant to CWA section 311(j)(5) requirements; ● = Partial requirements relevant to CWA section 311(j)(5) requirements; ● = Requirements relevant to CWA section 311(j)(5) requirements		

3 Review of Existing Modeling Programs

3.1 Approach

EPA conducted a search of tools or equations that could be used to calculate a planning distance. The Agency prioritized tools, models, and equations with the following properties:

- Developed by EPA;
- Publicly available;
- Off-the-shelf, i.e., does not need site-specific customization;
- Reduced form, i.e., something that can be easily modifiable with input parameters; and
- Can estimate or model the transport of some, most, or all CWA hazardous substances over land and water.

The following sections discuss equations and models that meet at least some of the above parameters.

3.2 Findings

EPA identified the following equations and models.

3.2.1 Equations Identified in EPA Technical Support Document for Water Quality-Based Toxics Control (1991)

EPA identified several equations and models in *EPA Technical Support Document for Water Quality-Based Toxics Control (1991)*⁶⁰. This technical support document provides different equations for two stages of mixing zones. These equations only determine the dispersion and dilution of the effluent and do not account for chemical or biological processes in the mixing zone.

Mixing stage one is determined by the initial momentum and buoyancy of the discharge.⁶¹ It is particularly important in lakes and reservoirs and slow-moving rivers because ambient mixing is minimal in those waterbodies. To model mixing stage one, EPA provides a simplistic screening model: $S = 0.3 \frac{x}{d}$, where S=flux averaged dilution, x=distance from outlet, d=diameter of outlet. The equation provides a minimum estimate of mixing because it is based on the assumptions that outlet velocity is zero and the discharge is neutrally buoyant. This equation may underestimate dilution for partially full pipes because the equation assumes a fully flowing pipe. The equation can be used in inverse form to solve for the discharge x at which a desired solution has been achieved. The equation is only valid at distances near to the discharge, up to a distance corresponding to several (two to three) water depths. At longer distances, other factors are of increasing importance in jet mixing and must be included.⁶²

Mixing stage two, ambient-induced mixing, can be used to predict pollutant concentration distributions up to the stage of complete lateral mixing. EPA provides an equation for ambient-induced mixing:

$$x_m = \frac{mW^2u}{D_y}$$

⁶⁰ <https://www3.epa.gov/npdes/pubs/owm0264.pdf>

⁶¹ Ibid.

⁶² Ibid.

where:

X_m = flow distance

W = width of the river

u = flow velocity for the critical design flow

D_y = lateral dispersion coefficient as discussed below

m = a parameter whose value depends on the degree of uniformity used to define “complete mixing” and on the transverse location of the outfall in the stream.⁶³

The lateral dispersion coefficient (D_y) for most rivers can be calculated with the following equation:

$$D_y = 0.6 du^* \pm 50\%$$

where:

d = water depth at design flow

u^* = shear velocity

The following equation for shear velocity should be used:

$$u^* = (gds)^{\frac{1}{2}}$$

where:

g =acceleration due to gravity

s =slope of the channel

d =water depth⁶⁴

To define m , EPA provides values depending on the variation in concentration across the stream width. Completely mixed conditions are defined as a 5-percent variation in concentration across the stream width. In the instance of completely mixed conditions, m would be approximately 0.1 for a discharge near the center of river flow and approximately 0.4 for a discharge near the edge of the river. However, if 25 percent variation across the width is accepted as being completely mixed due to other uncertainties, m would be approximately 0.06 for a discharge near the center of river flow and approximately 0.24 for a discharge near the edge of the river. X_m can range from a few hundred feet for very small streams to several to several tens of miles for medium and large streams.⁶⁵

In some cases, a diffuser may initially spread the discharge of pollutants across a larger part of the river width or discharge-induced mixing may lead to mixing across a significant part of the river width. In these instances, the values of m and X_m , may be smaller than the values indicated above. For shorter distances, maximum concentrations can be much greater than those predicted by “completely mixed” models and should be estimated using the following equation:

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ibid.

$$C_x = \frac{C_e Q_e W}{Q_s (\pi D_y X / u)^{1/2}}$$

where:

C_x = maximum pollutant concentration distance x from the outlet

C_e = effluent concentration

Q_e = design effluent flow

W = stream width

Q_s = design stream flow

D_y = lateral dispersion coefficient

X = distance from the outlet

u = flow velocity for the design flow.⁶⁶

When the above equations are used for estuaries, the velocity of the design flow should include the velocity associated with the inflow of freshwater in addition to the tidal velocity. For estuaries, u_t , which is based on an average total velocity; is substituted for u in the equations and shear velocity becomes $u^* = 0.10 u_t$.⁶⁷

3.2.2 Modeling Tools

This section summarizes modeling tools that meet at least some of the parameters described in Section 3.1.

CORMIX. CORMIX is a tool that models the movement of chemicals over water.⁶⁸ It is a USEPA-supported mixing zone model and decision support system for environmental impact assessment of regulatory mixing zones resulting from continuous point source discharges. The system emphasizes the role of boundary interaction to predict steady-state mixing behavior and plume geometry. CORMIX is designed to simulate plume conditions in a mixing zone, downstream of point source discharge systems. There is a free evaluation version of the tool as well as paid, commercial versions. It covers conservative pollutants (pollutants that do not undergo any decay/growth process during mixing), non-conservative pollutants (pollutants that undergo a first-order decay or growth process), and heated pollutants (heated wastewater from industrial cooling processes). Inputs needed to use the tool are site/case descriptions, ambient conditions, discharge characteristics, regulatory definitions.⁶⁹

AQUATOX. AQUATOX is an EPA tool that simulates the transfer of biomass, energy, and chemicals from one compartment of the ecosystem to another.⁷⁰ AQUATOX predicts the fate of various pollutants, such as nutrients and organic chemicals, and their effects on the ecosystem, including fish, invertebrates, and aquatic plants. It exclusively models the movement of chemicals over water. It is publicly available and free. It covers toxic organic chemicals. Inputs needed are initial conditions and loadings, chemical toxicity data, biological and ecological site characteristics, and site parameters.⁷¹

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ <http://www.cormix.info/index.php>

⁶⁹ Ibid.

⁷⁰ <https://www.epa.gov/ceam/aquatox>

⁷¹ Ibid.

Incident Command Tool for Drinking Water Protection (ICWater). ICWater is a geographical information system (GIS) tool developed by an interagency team led by the U.S. Department of Agriculture Forest Service and operated and maintained by the Defense Threat Reduction Agency. The tool provides incident commanders and other first responders with real-time information about risks to drinking water resulting from a toxic spill into any surface water in the United States. The tool allows real-time analysis of projected arrival time and contaminant concentration at all surface drinking water intakes in the country.⁷² It can model the transport of chemicals spilled in water bodies but does not cover transport over land. Federal, state, or local governments may apply to use the tool.⁷³

EPA's Hydrodynamic, Sediment, and Contaminant Transport Model (HSCTM2D). HSCTM2D is a finite element modeling system for simulating two-dimensional, vertically-integrated, surface water flow (typically riverine or estuarine hydrodynamics), sediment transport, and contaminant transport.⁷⁴ This tool could be used to model the transport of chemicals from a spill in water bodies. It is publicly available and free. Chemicals covered include dissolved and absorbed contaminants. In order to run the model, inputs needed are program operation data, grid geometry data, initial and boundary conditions data, nodal velocities and salinities, parameters describing the erosional and depositional behavior of the cohesive sediment as well as the structure of the bed, and contaminant partition coefficients and decay rates. This tool requires customization via grid generation. HSCTM2D was released in 1998.⁷⁵

CHEMMAP. CHEMMAP is a tool that can model the transport of chemical spilled in water bodies.⁷⁶ It predicts the trajectory and fate of chemicals, with a chemical fates model, biological exposure and effects model, and a stochastic model. CHEMMAP is a paid tool published by RPS with no free version. It covers 900 chemical substances, including floating, sinking, soluble and insoluble chemicals and product mixtures. Inputs needed to use the tool include CAS registry number or UN number, location and depth of release, wind data, and current data.⁷⁷

CalTOX Multimedia Risk Assessment Model. CalTOX Multimedia Risk Assessment Model is a spreadsheet-based model for use in health-risk assessments that addresses contaminated soils and the contamination of adjacent air, surface water, sediments, and ground water.⁷⁸ It includes a multimedia and transport transformation model, exposure scenario models, and addresses uncertainty in multimedia multi-pathway models. It is published by California Department of Toxic Substances Control (DTSC) and is publicly available and free. It can be used to model the transport of chemical spills over land and water; however, it is not able to be used for surfactants or volatile metals. Inputs needed are physical-chemical properties of the contaminant, meteorological data, hydrological data, and soil properties. It is intended for application over long time scales - several months to decades, and it is designed for modeling very low concentrations of contamination.⁷⁹

⁷² <https://www.fs.usda.gov/pnw/tools/incident-command-tool-protecting-drinking-water-icwater-v-3>

⁷³ Ibid.

⁷⁴ <https://www.epa.gov/ceam/hsctm2d>

⁷⁵ Ibid.

⁷⁶ <https://www.rpsgroup.com/services/oceans-and-coastal/modelling/products/chemmap/>

⁷⁷ Ibid.

⁷⁸ <https://dtsc.ca.gov/caltox-download-instructions/>

⁷⁹ Ibid.

Better Assessment Science Integrating point & Non-point Sources (BASINS) Model. The BASINS model is an EPA tool designed to integrate GIS, national watershed data, and state-of-the-art environmental assessment and modeling tools.⁸⁰ It can model the movement of toxic organic chemicals over water. The BASINS model is publicly available and free. Inputs required are cartographic data, environmental background data, monitoring data, and point source data. All data are provided by BASINS for the user to download for the model and select inputs from.⁸¹

Estimation Program Interface (EPI) Suite. EPI Suite is a screening-level tool published by EPA.⁸² It is a Windows®-based suite of physical/chemical property and environmental fate estimation programs. It can model the movement of chemicals over both water and land. EPI Suite is a free set of tools that uses a database of over 40,000 chemicals, including pesticides, other organics, inorganics and fibers, and nanomaterials. Inputs needed for EPI include chemical structure or CAS Registry number and measured data available for download within the model or experimental data provided by user.⁸³

Exposure Analysis Modeling System (EXAMS). EXAMS is an EPA tool for evaluating the fate, transport, and exposure concentrations of synthetic organic chemicals leaching from disposal sites.⁸⁴ It analyzes exposure, fate, and persistence for synthetic organic chemical spills into water. It is publicly available and free. EXAMS requires substantial customization in order to run the model. Inputs needed are chemicals, environments, loads, and products. EXAMS was last updated in 2005.⁸⁵

Exposure and Fate Assessment Screening Tool (E-FAST). E-FAST is an EPA tool that provides screening-level estimates of the concentrations of chemicals released to surface water and other media from chemicals.⁸⁶ It can model the transport of chemicals spilled over both water and land. It is publicly available and free. Inputs needed for the tool include the amount of chemical released, media of release, days per year of release, certain chemical properties, and release location data.⁸⁷

Internet Geographical Exposure Modeling System (IGEMS). IGEMS is an EPA surface water and soil model. IGEMS brings together in one system several EPA environmental fate and transport models and some of the environmental data needed to run them.⁸⁸ The current IGEMS includes four models:

- Analytical Transient 1-, 2-, and 3-Dimensional Simulation of Waste Transport in the Aquifer System (AT123D) is a generalized three-dimensional groundwater transport and fate model. It simulates contaminant transport under one-dimensional groundwater flow. Transport and fate processes simulated include advection, dispersion, diffusion, adsorption, and biological decay.⁸⁹

⁸⁰ <https://www.epa.gov/ceam/better-assessment-science-integrating-point-and-non-point-sources-basins>

⁸¹ Ibid.

⁸² <https://www.epa.gov/tsca-screening-tools/epi-suitetm-estimation-program-interface>

⁸³ Ibid.

⁸⁴ <https://www.epa.gov/ceam/exams-version-index>

⁸⁵ Ibid.

⁸⁶ <https://www.epa.gov/tsca-screening-tools/e-fast-exposure-and-fate-assessment-screening-tool-version-2014>

⁸⁷ Ibid.

⁸⁸ <https://www.epa.gov/tsca-screening-tools/using-predictive-methods-assess-exposure-and-fate-under-tsca>

⁸⁹ <http://www.seview.com/at123d.htm>

- The Industrial Source Complex Short-Term (ISCST3) is an advanced Gaussian plume model used to assess the air quality emissions from a wide variety of sources associated with an industrial complex.⁹⁰
- AERMOD Modeling System is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts.⁹¹
- Formaldehyde Indoor Air Model (FIAM) is intended to assist users in estimating human inhalation exposure to airborne formaldehyde emissions from composite wood products (CWPs) installed in new or existing residences.

SESOIL, a Seasonal Soil compartment model that will be migrated to IGEMS/CSM,⁹² contains three submodels that simultaneously simulate contaminant transport, soil water movement and soil erosion. Contaminant transport can be simulated: a) without biological decay b) with biodegradation simulated as a first-order decay process.⁹³

Total Risk Integrated Methodology (TRIM) - TRIM.FaTE. TRIM.FaTE is an EPA tool that estimates movement and transformation of pollutants over time.⁹⁴ It models releases to air that then accumulate in land or water. Outputs provide exposure estimates for environmental and human receptors that can be used in other models. It can model organic and inorganic pollutants that tend to be long-lived, bioaccumulating, non- (or at most semi-) volatile, and more associated with soil and sediment than with water. TRIM.FaTE is publicly available and free. Inputs needed are physical and chemical properties, site-specific data, GIS data, activity data, population data, and indoor/outdoor concentration ratios.⁹⁵

Table 3-1 summarizes the characteristics of the models evaluated.

Table 3-1: Summary of Modeling Tools Evaluated for Potential Use for Planning Distance Calculations.

Model Name	Managing Organization	Models Transport of Chemicals Over Land or Water	Publicly Availability and Cost	Chemical Coverage
CORMIX	EPA	Water	Free and paid versions	Pollutants undergoing or not undergoing decay/growth, and heated pollutants
AQUATOX	EPA	Water	Publicly available and free	Toxic organic chemicals
ICWater/ RiverSpill	USFS/ EPA/ USGS	Water	Publicly available and free	Human pathogens, toxic chemicals, and radioactive substances.
HSCTM2D	EPA	Water	Publicly available and free	Dissolved and absorbed contaminants

⁹⁰ <https://ofmpub.epa.gov/igems-jsp/homeAction.do>. (Note that a free registration is required to view website.)

⁹¹ Ibid.

⁹² <https://www.epa.gov/tsca-screening-tools/igemscsm-internet-geographical-exposure-modeling-systemchemical-safety-mapper>

⁹³ <https://ofmpub.epa.gov/igems-jsp/homeAction.do>. (Note that a free registration is required to view website.)

⁹⁴ <https://www.epa.gov/fera/total-risk-integrated-methodology-trim-trimfate>

⁹⁵ Ibid.

Model Name	Managing Organization	Models Transport of Chemicals Over Land or Water	Publicly Availability and Cost	Chemical Coverage
CHEMMAP	RPS ⁹⁶	Water	Paid	Floating, sinking, soluble and insoluble chemicals and product mixtures (900 chemical substances)
CalTOX Multimedia Risk Assessment Model	California Department of Toxic Substances Control (DTSC)	Land and water	Publicly available and free	Not for surfactants or volatile metals
BASINS Model	EPA	Water	Publicly available and free	Toxic organic chemicals, via AQUATOX
EPI Suite	EPA	Land and water	Publicly available and free	Pesticides, Other Organics, Inorganics and Fibers, and Nanomaterials. Uses database of >40,000 chemicals
EXAMS	EPA	Water	Publicly available and free	Synthetic organic chemicals
E-FAST	EPA	Land and water	Publicly available and free	Chemicals (summary does not provide more specificity)
IGEMS	EPA	Groundwater transport and fate model; soil model to be migrated to current IGEMS in future	Publicly available and free	Varies depending on model
TRIM.FaTE	EPA	Land and water	Publicly available and free	Organic and inorganic pollutants that tend to be long-lived, bioaccumulating, non- (or at most semi-) volatile, and more associated with soil and sediment than with water

⁹⁶ <https://www.rpsgroup.com/services/oceans-and-coastal/modelling/products/chemmap/>

4 Toxicity Endpoints Review

4.1 Approach

EPA assessed toxic endpoints that could potentially be used in planning distance calculations. The proposed rule (87 FR 17898-17900, 17905) describes the development and adjustment of reportable quantities (RQs), their assigned categories, and their use as toxicity endpoints. The following section discusses each of the different endpoints evaluated, including the strengths and limitations of the use of the endpoints for different purposes. A 2018 EPA review of fate and transport models⁹⁷ provides an overview of a variety modeling tools that are used for understanding the fate and transport of stormwater and associated pollutants. A comparison is provided on page 23 of the report; however, no one model was found to include all the components necessary for modeling relevant to calculating a planning distance for each of the 296 CWA regulated hazardous substances.

4.2 Findings

Below is a discussion of several endpoints evaluated, including the strengths and limitations of the use of the endpoints for different purposes.

Lethal Concentration 50% (LC50)/Lethal Dose 50% (LD50). The LC50/LD50 (lethal concentration/lethal dose) is the median dose predicted to kill 50 percent of the study population; the LC50 applies to concentrations delivered to the test animal in air, while LD50 applies to doses administered orally or dermally.^{98,99} LC50/LD50s measure the effects of acute exposures. They are available for all CWA hazardous substances. This measure is a simple indicator of acute lethality for hazard communication or labeling purposes. It is used in the calculation of CWA hazardous substance reportable quantities and is used to derive many other acute toxic endpoints (e.g., acute exposure guideline levels). Values are available for aquatic and mammalian species; there may be multiple studies on the same species and combining the results of multiple tests can increase reliability and validity of the estimates (see CMC and CCC below).

However, there are several limitations associated with LC50/LD50s. Many different values for different species create challenges for choosing one value. Even with the same species, under the same conditions, with the same chemical contaminant, resulting LC50/LD50s can be highly variable, making selection of an appropriate value for hazard communication or for derivation of a threshold (e.g., an acute exposure guideline level) challenging.¹⁰⁰ LC50/LD50s are more commonly applicable to fish, wildlife, and sensitive environments (FWSE) receptors. Applicability of acute lethality data to and human

⁹⁷ Chen, L., S. Roy, T. Boe, AND A. Mikelonis. Survey and Assessment of Fate and Transport Models for Use Following a Wide-Area Urban Release to Inform Mapping, Characterization, and Site Clearance. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-18/282, 2018. Available at:

https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=537179&Lab=NHSRC

⁹⁸ Morris-Schaffer, K., & McCoy, M. J. (2020). A Review of the LD50 and Its Current Role in Hazard Communication. ACS Chemical Health & Safety, 28(1), 25-33.

⁹⁹ US EPA. 1994. ECO Update. Intermittent Bulletin, Volume 2, Number 1, Publication 9345.0-05I, March 1994. Available at: <https://www.epa.gov/sites/default/files/2015-09/documents/v2no1.pdf>. Accessed October 6, 2021.

¹⁰⁰ Karmaus, A., Fitzpatrick, J., Allen, D., Patlewicz, G., Kleinstreuer, N., & Casey, W. (2018). Variability of LD50 values from rat oral acute toxicity studies: implications for alternative model development. Society of Toxicology, San Antonio, TX, 3, 11-15.

health receptors is less certain, compared to non-lethal toxicity(ies) associated with repeated exposures in epidemiological or experimental mammalian studies.

Probable effects concentration (PEC)/threshold effects concentration (TEC). The PEC represents concentrations above which there is a greater than 50 percent chance that adverse effects for specific species or closely related groups could occur.¹⁰¹ The TEC represents concentrations below which adverse effects are unlikely to occur for specific species or closely related groups. The PEC/TEC are used to derive Sediment Quality Guidelines (SQGs). SQGs were developed by various federal and state agencies and have been used for various purposes including ecological risk assessment and by EPA to rank areas of concern in the United States based on sediment contaminant levels.¹⁰² The PEC/TECs are calculated as the mean or geometric mean of similar toxicity test values, typically the 'low effect concentration' from tests of species under similar conditions. The number of CWA hazardous substances that have PEC/TECs was not assessed because these values are typically calculated for sediment, not water. Additionally, many of the published values are old and may require periodic updating for newer standardized methods. Strengths of PEC/TECs include the ability to combine information from multiple tests and that they can be used when toxicity tests have not been performed for enough species to calculate other types of thresholds. PEC/TECs also have a long history of use and thresholds have been developed for different matrices and species. They are applicable to FWSE receptors and estimates are based on acute and chronic exposures.

Criterion maximum concentration (CMC) and criterion continuous concentration (CCC). The CMC and CCC are used by EPA Office of Water to assess the ecological effects of chemicals in surface water.¹⁰³ The criteria are recommended levels that are not expected to pose significant risk to aquatic species and can be used by states and tribes to develop guidance.¹⁰⁴ They are a standardized method for assessing thresholds for aquatic communities and estimate the concentration at which only the most sensitive five percent of species would experience toxic effects from a chemical. Using overarching chemical components, there are 104 freshwater CMCs, 116 freshwater CCCs, 97 saltwater CMCs and 97 saltwater CCCs for CWA hazardous substance chemical compounds. CMC/CCCs are standardized, high-quality thresholds and are a computationally simplified method for assessing thresholds for multiple species. They are based on the results of multiple toxicity tests and require data of sufficient quality for tests of at least eight species. However, CCCs for chronic effects are less common and may not pass quality review. Alternative methods are often used to calculate CCC and often are based on the ratio of acute to chronic effects. The thresholds are applicable to FSWE receptors. CMCs are relevant for acute exposures and CCC are relevant for chronic exposures.

¹⁰¹ MacDonald, D. D., Ingersoll, C. G., & Berger, T. A. (2000). Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Archives of Environmental Contamination and Toxicology*, 39(1), 20-31.

¹⁰² *ibid*

¹⁰³ Stephan, C. E., Mount, D. I., Hansen, D. J., Gentile, J. H., Chapman, G. A., & Brungs, W. A. (1985). Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses. Washington, DC: US Environmental Protection Agency.

¹⁰⁴ U.S. EPA. 2021. National Recommended Water Quality Criteria - Aquatic Life Criteria Table. Available at: <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>. Accessed October 8, 2021.

Reference dose/reference concentrations (RfDs/RfCs). RfD/RfCs are estimates of daily exposure to the human population, including sensitive subgroups, that are likely to be without an appreciable risk of noncancer adverse health effects over a lifetime.¹⁰⁵ Usually, the RfD/RfC is calculated by selecting an appropriate point-of-departure, preferably a benchmark dose, or alternatively a no observed adverse effect level from human epidemiological or experimental animal studies and dividing it by uncertainty factors. RfD and/or RfCs are available for 117 CWA hazardous substances. They are peer-reviewed and a useful reference point to gauge potential noncancer health effects of a hazardous substance (e.g., if the exposure dose or concentration is less than an RfD/RfC, it is unlikely to be associated with any health risks and is less concerning). RfD/RfCs are not relevant for emergency exposure scenarios. RfD/RfCs are applicable to human receptors and are typically used for subchronic and chronic exposures.

Maximum contaminant levels (MCLs). MCLs are the highest level of a contaminant allowed in drinking water.¹⁰⁶ MCLs are available for 129 CWA hazardous substances. MCLs are protective of public health because they are in part based on RfDs and are calculated using body weight and drinking water consumption default assumptions. MCLs are enforceable and water utilities monitor chemicals with MCLs. A limitation of MCLs as a toxic endpoint is its sole applicability to chronic exposures; acute exposures are not relevant to MCLs.

Immediately dangerous to life or health (IDLH). IDLH values were developed by the NIOSH and characterize high-risk occupational exposures.¹⁰⁷ IDLHs are used to ensure that workers can escape during a contamination event if respiratory protection equipment fails to aid in selection of appropriately protective respiratory equipment. IDLH values are available for 94 CWA hazardous substances. IDLHs are peer-reviewed and protective of workers in the immediate area of spill, and some IDLHs offer oral dose equivalents. They are potentially applicable in scenarios where CWA hazardous substances remain highly concentrated in water and pose a threat to users of recreational waters via dermal exposure or inhalation. However, they are not applicable to FWSE receptors and they only apply to human health for acute exposure scenarios.

Acute exposure guideline levels for airborne chemicals (AEGL). AEGLs are threshold exposure limits, or exposure levels below which adverse health effects are not likely to occur, for the general public.¹⁰⁸ AEGLs are applicable to acute exposures and are available for three levels of scenarios of increasing effect severity, at five potential exposure times (10 minutes to eight hours). AEGLs are available for 35 CWA hazardous substances, peer reviewed, and published in multiple volumes by the National Research Council. Levels of distinct odor awareness are available for some chemicals, and although this is not a toxicity indicator, chemicals may be detected at low levels at public drinking water intakes and in tap

¹⁰⁵ Ohanian, E., Orme-Zavaleta, J., Rice, D., Seed, J., Tilson, H., & Vu, V. (2002). A Review of the Reference Dose and Reference Concentration Processes. Washington, DC: US Environmental Protection Agency.

¹⁰⁶ Ohanian, E. V. (1995). Use of the reference dose in risk characterization of drinking water contaminants; See also US EPA. 2021. How EPA Regulates Drinking Water Contaminants. Available at: <https://www.epa.gov/sdwa/how-epa-regulates-drinking-water-contaminants>. Accessed October 7, 2021.

¹⁰⁷ NIOSH. (2013). Current intelligence bulletin 66: derivation of immediately dangerous to life or health (IDLH) values. Cincinnati, OH: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication 2014–100.

¹⁰⁸ National Research Council. (2001). Standing operating procedures for developing acute exposure guideline levels for hazardous chemicals. Washington, DC: The National Academies Press.

water in nearby homes and businesses. AEGLs are for inhalation exposure only and are not applicable to FWSE receptors.

Emergency Response Planning Guidelines (ERPGs). ERPGs are developed by the American Industrial Hygiene Association (AIHA).¹⁰⁹ They are guideline levels for once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic chemicals at three levels for scenarios of increasing severity, at one exposure time (1 hour). ERPGs are available for 45 CWA hazardous substances. ERPGs may be used as exposure guidelines when AEGLs are not available. However, ERPGs are not subject to independent review, only calculated only for 1-hour exposures, and do not consider sensitive populations (e.g., children) in their development because they are for occupational exposure scenarios. ERPGs are not applicable to FWSE receptors and are derived from acute inhalation toxicity studies in animals, not ingestion. ERPGs are relevant for the protection of human health in acute exposure scenarios (limited to one hour).

Minimum Risk Levels (MRLs). MRLs are available from the Agency for Toxic Substances and Disease Registry (ATSDR).¹¹⁰ They are estimates of the daily human exposure to a hazardous substance that is not likely to have adverse non-cancer health effects over a specified duration of exposure, similar to the RfD/RfC. MRLs are derived for acute (1-14 days), intermediate (>14-364 days), and chronic exposures (365 days and longer). MRLs are available for 88 CWA hazardous substances. Oral and inhalation MRLs are available for non-cancer health effects only. Their derivation approach is similar to RfD/RfCs; however, MRLs are estimated for acute, subchronic, and chronic exposures, whereas RfDs are with limited exceptions (e.g., PPRTVs) only estimated based on chronic exposures. MRLs are not intended to define action or clean-up levels and are not applicable for short-term exposures of less than 24 hours. No estimates for dermal exposure are available, and they are not applicable to FWSE receptors. MRLs are protective of human health for acute (more than 24 hours), subchronic, and chronic exposures.

Provisional advisory levels for hazardous agents (PALs). PALs represent exposure scenarios where effects of varying severity should be expected to occur.¹¹¹ PALs are advisory levels for chemical exposures in the general public and susceptible and sensitive populations. They are not safe levels of exposure (similar to AEGLs). PALs are available for three severity levels, with exposure durations from 24 hours to two years. PALs are available for six CWA hazardous substances. PALs are derived using peer-reviewed risk assessment methods and have been developed for exposures to contaminated air and water. No PALs for dermal exposure are available and they are not applicable to FWSE receptors. They are protective of human health for acute (more than 24 hours), subchronic, and chronic exposures, but not for short-term exposure scenarios less than 24 hours.

Table 4-1 below summarizes the characteristics of the endpoints identified and evaluated.

¹⁰⁹ Cavender, F., Phillips, S., & Holland, M. (2008). Development of Emergency Response Planning Guidelines (ERPGs). *Journal of Medical Toxicology: Official Journal of the American College of Medical Toxicology*, 4(2), 127–131.

¹¹⁰ Chou, C. H. S. J., Holler, J. A. M. E. S., & De Rosa, C. T. (1998). Minimal risk levels (MRLs) for hazardous substances. *Journal of Clean Technology, Environmental Toxicology and Occupational Medicine*, 7(1), 1-24.

¹¹¹ Adeshina, F., Sonich-Mullin, C., Ross, R. H., & Wood, C. S. (2009). Health-based provisional advisory levels (PALs) for homeland security. *Inhalation Toxicology*, 21(sup3), 12-16.

Table 4-1: Toxic Endpoints

Toxic Endpoint (Reference Levels)	Agency/ Organization	Definition	CWA HS Coverage	Receptor Applicability	Exposure Duration
LC50/LD50	EPA	Median dose predicted to kill 50% of study population.	All	<ul style="list-style-type: none"> • FWSE • Human health 	<ul style="list-style-type: none"> • Acute
PEC & TEC	EPA	PECs are concentrations above which there is a greater than 50% chance that adverse effects for specific species or closely related groups could occur. TECs represent concentrations below which adverse effects are unlikely to occur for specific species or closely related groups.	Did not assess because they are typically calculated for sediment, not water	<ul style="list-style-type: none"> • FWSE 	<ul style="list-style-type: none"> • Acute and chronic
CMC & CCC	EPA	Estimate the concentration at which only the most sensitive 5% of species would experience toxic effects from a chemical.	10	<ul style="list-style-type: none"> • FSWE 	<ul style="list-style-type: none"> • CMC: acute • CCC: chronic
MCL	EPA	Highest level of a contaminant allowed in drinking water.	129	<ul style="list-style-type: none"> • Human health 	<ul style="list-style-type: none"> • Chronic/lifetime exposures
RfD/RfC	EPA	Estimate of daily exposure to the human population, including sensitive subgroups, likely to be without an appreciable risk of noncancer adverse health effects over a lifetime.	117	<ul style="list-style-type: none"> • Human health 	<ul style="list-style-type: none"> • Typically subchronic/chronic
IDLH	NIOSH	Characterize high-risk occupational exposures and are used to ensure that workers can escape during a contamination event if respiratory protection equipment fails and to aid in selection of appropriately protective respiratory equipment.	94	<ul style="list-style-type: none"> • Human health 	<ul style="list-style-type: none"> • Acute
AEGL	EPA & NRC	Threshold exposure limits for the general public, applicable to acute durations.	35	<ul style="list-style-type: none"> • Human health 	<ul style="list-style-type: none"> • Acute
ERPG	AIHA	Guideline levels for once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic chemicals.	45	<ul style="list-style-type: none"> • Human health 	<ul style="list-style-type: none"> • Acute (limited to 1 hour)
MRL	ATSDR	Estimate of the daily human exposure to a hazardous substance that is not likely to have adverse non-cancer health effects over a specified duration of exposure.	88	<ul style="list-style-type: none"> • Human health 	<ul style="list-style-type: none"> • Acute (>24 hours), subchronic, chronic

Toxic Endpoint (Reference Levels)	Agency/ Organization	Definition	CWA HS Coverage	Receptor Applicability	Exposure Duration
PAL	EPA	Represent exposure scenarios where effects of varying severity should be expected to occur.	6	<ul style="list-style-type: none"> Human health 	<ul style="list-style-type: none"> Acute (>24 hours), subchronic, chronic

Appendix A – Statutory and Regulatory Text Relevant to CWA Hazardous Substance Facility Response Regulations for EPA Programs

A.1 America's Water Infrastructure Act of 2018 Amendments to Section 1433 of the Safe Drinking Water Act (AWIA) (42 U.S.C. 300i-2)

The following subsections include the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

A.1.1 Plans for Responding to Worst Case Discharge

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(A) requirement for plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance. The statutory text is shown below.

SEC. 2013. COMMUNITY WATER SYSTEM RISK AND RESILIENCE.

(a) In General.--Section 1433 of the Safe Drinking Water Act (42 U.S.C. 300i-2) is amended to read as follows:

SEC. 1433. COMMUNITY WATER SYSTEM RISK AND RESILIENCE.

(a) Risk and Resilience Assessments.

(1) In general. Each community water system serving a population of greater than 3,300 persons shall conduct an assessment of the risks to, and resilience of, its system. Such an assessment

(A) shall include an assessment of

...

(v) the use, storage, or handling of various chemicals by the system;

...

(b) Emergency Response Plan. Each community water system serving a population greater than 3,300 shall prepare or revise, where necessary, an emergency response plan that incorporates findings of the assessment conducted under subsection (a) for such system (and any revisions thereto). Certification. Deadline. Each community water system shall certify to the Administrator, as soon as reasonably possible after the date of enactment of America's Water Infrastructure Act of 2018, but not later than 6 months after completion of the assessment under subsection (a), that the system has completed such plan.

Procedures. The emergency response plan shall include

(1) strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system;

(2) plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water;

(3) actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to communities and individuals, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers; and

(4) Strategies. strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.

(c) Coordination. Community water systems shall, to the extent possible, coordinate with existing local emergency planning committees established pursuant to the Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001 et seq.) when preparing or revising an assessment or emergency response plan under this section.

(d) Time period. Record Maintenance. Each community water system shall maintain a copy of the assessment conducted under subsection (a) and the emergency response plan prepared under subsection (b) (including any revised assessment or plan) for 5 years after the date on which a certification of such assessment or plan is submitted to the Administrator under this section.

(e) Guidance to Small Public Water Systems. The Administrator shall provide guidance and technical assistance to community water systems serving a population of less than 3,300 persons on how to conduct resilience assessments, prepare emergency response plans, and address threats from malevolent acts and natural hazards that threaten to disrupt the provision of safe drinking water or significantly affect the public health or significantly affect the safety or supply of drinking water provided to communities and individuals.

A.1.2 Identifies and Ensures Removal and Mitigation Personnel and Equipment

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iii) requirement that response plans shall “identify, and ensure by contract or other means [approved by the President] the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge.” The regulation contains requirements for secondary containment, but no provisions related to availability of equipment necessary to remove discharge or land-based response actions to mitigate the release of portions of a discharge to navigable waters. The regulatory text is shown below.

SEC. 2013. COMMUNITY WATER SYSTEM RISK AND RESILIENCE.

(a) In General. Section 1433 of the Safe Drinking Water Act (42 U.S.C. 300i-2) is amended to read as follows:

SEC. 1433. COMMUNITY WATER SYSTEM RISK AND RESILIENCE.

...

(b) Emergency Response Plan. Each community water system serving a population greater than 3,300 shall prepare or revise, where necessary, an emergency response plan that incorporates findings of the assessment conducted under subsection (a) for such system (and any revisions thereto). <<NOTE: Certification. Deadline. Each community water system shall certify to the Administrator, as soon as reasonably possible after the date of enactment of America's Water Infrastructure Act of 2018, but not later than 6 months after completion of the assessment under subsection (a), that the system has completed such plan.

Procedures. The emergency response plan shall include

(1) strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system;

(2) plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water;

(3) actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water

provided to communities and individuals, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers; and

(4) strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.

A.1.3 Updated Periodically

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(v) requirement that response plans shall be updated periodically. The regulatory text is shown below.

SEC. 2013. COMMUNITY WATER SYSTEM RISK AND RESILIENCE.

(a) In General. Section 1433 of the Safe Drinking Water Act (42 U.S.C. 300i-2) is amended to read as follows:

SEC. 1433. COMMUNITY WATER SYSTEM RISK AND RESILIENCE.

(a) Risk and Resilience Assessments.

...

(3) Certification.

(A) Certification. Each community water system described in paragraph (1) shall submit to the Administrator a certification that the system has conducted an assessment complying with paragraph (1). Such certification shall be made prior to--

(i) March 31, 2020, in the case of systems serving a population of 100,000 or more;

(ii) December 31, 2020, in the case of systems serving a population of 50,000 or more but less than 100,000; and

(iii) June 30, 2021, in the case of systems serving a population greater than 3,300 but less than 50,000.

(B) Time period. Determination. Review and revision. Each community water system described in paragraph (1) shall review the assessment of such system conducted under such paragraph at least once every 5 years after the applicable deadline for submission of its certification under subparagraph (A) to determine whether such assessment should be revised. Upon completion of such a review, the community water system shall submit to the Administrator a certification that the system has reviewed its assessment and, if applicable, revised such assessment.

A.2 Chemical Accident Prevention Provisions, Risk Management Plan

A.2.1 Plans for Responding to Worst Case Discharge

EPA identified provisions that are partially relevant to the CWA section 311 (j)(5)(A) requirement of plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance. The regulatory text is shown below.

Subpart A-General

40 CFR 68.12 General requirements.

...

(b) Program 1 requirements. In addition to meeting the requirements of paragraph (a) of this section, the owner or operator of a stationary source with a process eligible for Program 1, as provided in §68.10(g), shall:

(1) Analyze the worst-case release scenario for the process(es), as provided in §68.25; document that the nearest public receptor is beyond the distance to a toxic or flammable endpoint defined in §68.22(a); and submit in the RMP the worst-case release scenario as provided in §68.165;

Subpart B - Hazard Assessment

40 CFR 68.20 Applicability.

The owner or operator of a stationary source subject to this part shall prepare a worst-case release scenario analysis as provided in §68.25 of this part and complete the five-year accident history as provided in §68.42. The owner or operator of a Program 2 and 3 process must comply with all sections in this subpart for these processes.

40 CFR 68.25 Worst-case release scenario analysis.

(a) The owner or operator shall analyze and report in the RMP:

(1) For Program 1 processes, one worst-case release scenario for each Program 1 process;

(2) For Program 2 and 3 processes:

(i) One worst-case release scenario that is estimated to create the greatest distance in any direction to an endpoint provided in appendix A of this part resulting from an accidental release of regulated toxic substances from covered processes under worst-case conditions defined in §68.22;

(ii) One worst-case release scenario that is estimated to create the greatest distance in any direction to an endpoint defined in §68.22(a) resulting from an accidental release of regulated flammable substances from covered processes under worst-case conditions defined in §68.22; and

(iii) Additional worst-case release scenarios for a hazard class if a worst-case release from another covered process at the stationary source potentially affects public receptors different from those potentially affected by the worst-case release scenario developed under paragraphs (a)(2)(i) or (a)(2)(ii) of this section.

(b) Determination of worst-case release quantity. The worst-case release quantity shall be the greater of the following:

(1) For substances in a vessel, the greatest amount held in a single vessel, taking into account administrative controls that limit the maximum quantity; or

(2) For substances in pipes, the greatest amount in a pipe, taking into account administrative controls that limit the maximum quantity.

(c) Worst-case release scenario—toxic gases.

(1) For regulated toxic substances that are normally gases at ambient temperature and handled as a gas or as a liquid under pressure, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is released as a gas over 10 minutes. The release rate shall be assumed to be the total quantity divided by 10 unless passive mitigation systems are in place.

(2) For gases handled as refrigerated liquids at ambient pressure:

(i) If the released substance is not contained by passive mitigation systems or if the contained pool would have a depth of 1 cm or less, the owner or operator shall assume that the substance is released as a gas in 10 minutes;

(ii) If the released substance is contained by passive mitigation systems in a pool with a depth greater than 1 cm, the owner or operator may assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is spilled instantaneously to form a liquid pool. The volatilization rate

(release rate) shall be calculated at the boiling point of the substance and at the conditions specified in paragraph (d) of this section.

(d) Worst-case release scenario—toxic liquids.

(1) For regulated toxic substances that are normally liquids at ambient temperature, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is spilled instantaneously to form a liquid pool.

(i) The surface area of the pool shall be determined by assuming that the liquid spreads to 1 centimeter deep unless passive mitigation systems are in place that serve to contain the spill and limit the surface area. Where passive mitigation is in place, the surface area of the contained liquid shall be used to calculate the volatilization rate.

(ii) If the release would occur onto a surface that is not paved or smooth, the owner or operator may take into account the actual surface characteristics.

(2) The volatilization rate shall account for the highest daily maximum temperature occurring in the past three years, the temperature of the substance in the vessel, and the concentration of the substance if the liquid spilled is a mixture or solution.

(3) The rate of release to air shall be determined from the volatilization rate of the liquid pool. The owner or operator may use the methodology in the RMP Offsite Consequence Analysis Guidance or any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(e) Worst-case release scenario—flammable gases. The owner or operator shall assume that the quantity of the substance, as determined under paragraph (b) of this section and the provisions below, vaporizes resulting in a vapor cloud explosion. A yield factor of 10 percent of the available energy released in the explosion shall be used to determine the

distance to the explosion endpoint if the model used is based on TNT equivalent methods.

(1) For regulated flammable substances that are normally gases at ambient temperature and handled as a gas or as a liquid under pressure, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is released as a gas over 10 minutes. The total quantity shall be assumed to be involved in the vapor cloud explosion.

(2) For flammable gases handled as refrigerated liquids at ambient pressure:

(i) If the released substance is not contained by passive mitigation systems or if the contained pool would have a depth of one centimeter or less, the owner or operator shall assume that the total quantity of the substance is released as a gas in 10 minutes, and the total quantity will be involved in the vapor cloud explosion.

(ii) If the released substance is contained by passive mitigation systems in a pool with a depth greater than 1 centimeter, the owner or operator may assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is spilled instantaneously to form a liquid pool. The volatilization rate (release rate) shall be calculated at the boiling point of the substance and at the conditions specified in paragraph (d) of this section. The owner or operator shall assume that the quantity which becomes vapor in the first 10 minutes is involved in the vapor cloud explosion.

(f) Worst-case release scenario—flammable liquids. The owner or operator shall assume that the quantity of the substance, as determined under paragraph (b) of this section and the provisions below, vaporizes resulting in a vapor cloud explosion. A yield factor of 10 percent of the available energy released in the

explosion shall be used to determine the distance to the explosion endpoint if the model used is based on TNT equivalent methods.

(1) For regulated flammable substances that are normally liquids at ambient temperature, the owner or operator shall assume that the entire quantity in the vessel or pipe, as determined under paragraph (b) of this section, is spilled instantaneously to form a liquid pool. For liquids at temperatures below their atmospheric boiling point, the volatilization rate shall be calculated at the conditions specified in paragraph (d) of this section.

(2) The owner or operator shall assume that the quantity which becomes vapor in the first 10 minutes is involved in the vapor cloud explosion.

(g) Parameters to be applied. The owner or operator shall use the parameters defined in §68.22 to determine distance to the endpoints. The owner or operator may use the methodology provided in the RMP Offsite Consequence Analysis Guidance or any commercially or publicly available air dispersion modeling techniques, provided the techniques account for the modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(h) Consideration of passive mitigation. Passive mitigation systems may be considered for the analysis of worst case provided that the mitigation system is capable of withstanding the release event triggering the scenario and would still function as intended.

(i) Factors in selecting a worst-case scenario. Notwithstanding the provisions of paragraph (b) of this section, the owner or operator shall select as the worst case for flammable regulated substances or the worst case for regulated toxic substances, a scenario based on the following factors if such a scenario would result in a greater distance to an endpoint defined in §68.22(a) beyond the stationary source boundary than the scenario provided under paragraph (b) of this section:

(1) Smaller quantities handled at higher process temperature or pressure; and

(2) Proximity to the boundary of the stationary source.

40 CFR 68.28 Alternative release scenario analysis.

(a) The number of scenarios. The owner or operator shall identify and analyze at least one alternative release scenario for each regulated toxic substance held in a covered process(es) and at least one alternative release scenario to represent all flammable substances held in covered processes.

(b) Scenarios to consider.

(1) For each scenario required under paragraph (a) of this section, the owner or operator shall select a scenario:

(i) That is more likely to occur than the worst-case release scenario under §68.25; and

(ii) That will reach an endpoint offsite, unless no such scenario exists.

(2) Release scenarios considered should include, but are not limited to, the following, where applicable:

(i) Transfer hose releases due to splits or sudden hose uncoupling;

(ii) Process piping releases from failures at flanges, joints, welds, valves and valve seals, and drains or bleeds;

(iii) Process vessel or pump releases due to cracks, seal failure, or drain, bleed, or plug failure;

(iv) Vessel overfilling and spill, or overpressurization and venting through relief valves or rupture disks; and

(v) Shipping container mishandling and breakage or puncturing leading to a spill.

(c) Parameters to be applied. The owner or operator shall use the appropriate parameters defined in §68.22 to determine distance to the endpoints. The owner or operator may use either the methodology provided in the RMP Offsite Consequence Analysis Guidance or any commercially or publicly available air dispersion modeling techniques, provided the techniques account for the specified modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(d) Consideration of mitigation. Active and passive mitigation systems may be considered provided they are capable of withstanding the event that triggered the release and would still be functional.

(e) Factors in selecting scenarios. The owner or operator shall consider the following in selecting alternative release scenarios:

(1) The five-year accident history provided in §68.42; and

(2) Failure scenarios identified under §68.50 or §68.67.

40 CFR 68.93 Emergency response coordination activities.

The owner or operator of a stationary source shall coordinate response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance.

(a) Coordination shall occur at least annually, and more frequently if necessary, to address changes: At the stationary source; in the stationary source's emergency response and/or emergency action plan; and/or in the community emergency response plan.

(b) Coordination shall include providing to the local emergency planning and response organizations: The stationary source's emergency response plan if one exists; emergency action plan; updated emergency contact information; and other information necessary for developing and implementing the local emergency response plan. For responding stationary sources, coordination shall also include consulting with local emergency response officials to establish appropriate schedules and plans for field and tabletop exercises required under §68.96(b). The owner or operator shall request an opportunity to meet with the local emergency planning committee (or equivalent) and/or local fire department as appropriate to review and discuss those materials.

(c) The owner or operator shall document coordination with local authorities, including: The names of individuals involved and their contact information (phone number, email address, and organizational affiliations); dates of coordination activities; and nature of coordination activities.

(d) Classified and restricted information. The disclosure of information classified or restricted by the Department of Defense or other Federal agencies or contractors of such agencies shall be controlled by applicable laws, regulations, or executive orders concerning the release of that classified or restricted information.

A.2.2 Consistent with NCP and ACP

RMP has the following provisions relevant to the CWA section 311 (j)(5)(D)(i) requirement that response plans shall be consistent with the requirements of the NCP and ACPs. The regulatory text is shown below.

Subpart E – Emergency Response

40 CFR 68.95 Emergency Response Program.

...

(b) A written plan that complies with other Federal contingency plan regulations or is consistent with the approach in the National Response Team's Integrated Contingency Plan Guidance ("One Plan") and that, among other matters, includes the elements provided in paragraph (a) of this section, shall satisfy the requirements of this section if the owner or operator also complies with paragraph (c) of this section."

A.2.3 Identifies the Qualified Individual and Requires Communications

EPA identified provisions that are partially relevant to CWA section 311(j)(5)(D)(ii) requirement that response plans, "shall identify the qualified individual having full authority to implement removal actions and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment." The regulation identifies a person to oversee implementation of the RMP but does not specifically discuss implementing removal actions. Also, while it requires notification, it does not include text on "immediate" notification. The regulatory text is shown below.

Subpart A – General

40 CFR 68.15 Management.

(a) The owner or operator of a stationary source with processes subject to Program 2 or Program 3 shall develop a management system to oversee the implementation of the risk management program elements.

(b) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements.

(c) When responsibility for implementing individual requirements of this part is assigned to persons other than the person identified under paragraph (b) of this section, the names or positions of these people shall be documented and the lines of authority defined through an *organization chart or similar document*.

Subpart E - Emergency Response

40 CFR 68.95 Emergency response program.

(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

(1) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements:

(i) Procedures for informing the public and the appropriate Federal, state, and local emergency response agencies about accidental releases;

...

A.2.4 Identifies and Ensures Removal and Mitigation Personnel and Equipment

EPA identified provisions that are partially relevant to CWA section 311(j)(5)(D)(iii) requirement that response plans, “. . . shall identify, and ensure by contract or other means [approved by the President] the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge.” The regulatory text is shown below.

Subpart E - Emergency Response

40 CFR 68.95 Emergency response program.

(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

(1) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements:

...

(ii) Procedures and measures for emergency response after an accidental release of a regulated substance;

(2) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance;

Subpart G- Risk Management Plan

§68.180 Emergency response program and exercises.

...

(b) The owner or operator shall identify in the RMP whether the facility is a responding stationary source or a non-responding stationary source, pursuant to §68.90.

(1) For non-responding stationary sources, the owner or operator shall identify:

(i) For stationary sources with any regulated toxic substance held in a process above the threshold quantity, whether the stationary source is included in the community emergency response plan developed under 42 U.S.C. 11003, pursuant to §68.90(b)(1);

(ii) For stationary sources with only regulated flammable substances held in a process above the threshold quantity, the date of the most recent coordination with the local fire department, pursuant to §68.90(b)(2);

(iii) What mechanisms are in place to notify the public and emergency responders when there is a need for emergency response;

A.2.5 Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions

RMP has the following provisions that are partially relevant to the CWA section 311(j)(5)(D)(iv) requirement that response plans shall “. . . describe the training, equipment testing, periodic unannounced drills, and response actions of persons [on the vessel or] at the facility, to be carried out

under the plan to ensure the safety of the [vessel or] facility and to mitigate or prevent the discharge, or the substantial threat of a discharge.” The regulatory text is shown below.

Subpart C—Program 2 Prevention Program

40 CFR 68.54 Training.

(a) The owner or operator shall ensure that each employee presently operating a process, and each employee newly assigned to a covered process have been trained or tested competent in the operating procedures provided in §68.52 that pertain to their duties. For those employees already operating a process on June 21, 1999, the owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as provided in the operating procedures.

(b) Refresher training shall be provided at least every three years, and more often if necessary, to each employee operating a process to ensure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees operating the process, shall determine the appropriate frequency of refresher training.

(c) The owner or operator may use training conducted under Federal or state regulations or under industry-specific standards or codes or training conducted by covered process equipment vendors to demonstrate compliance with this section to the extent that the training meets the requirements of this section.

(d) The owner or operator shall ensure that operators are trained in any updated or new procedures prior to startup of a process after a major change.

Subpart D—Program 3 Prevention Program

40 CFR 68.71 Training.

Initial training. (1) Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in §68.69. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.

(2) In lieu of initial training for those employees already involved in operating a process on June 21, 1999 an owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures.

(b) Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training.

(c) Training documentation. The owner or operator shall ascertain that each employee involved in operating a process has received and understood the training required by this paragraph. The owner or operator shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

40 CFR § 68.56 Maintenance.

(a) The owner or operator shall prepare and implement procedures to maintain the on-going mechanical integrity of the process equipment. The owner or operator may use procedures or instructions provided

by covered process equipment vendors or procedures in Federal or state regulations or industry codes as the basis for stationary source maintenance procedures.

(b) The owner or operator shall train or cause to be trained each employee involved in maintaining the on-going mechanical integrity of the process. To ensure that the employee can perform the job tasks in a safe manner, each such employee shall be trained in the hazards of the process, in how to avoid or correct unsafe conditions, and in the procedures applicable to the employee's job tasks.

(c) Any maintenance contractor shall ensure that each contract maintenance employee is trained to perform the maintenance procedures developed under paragraph (a) of this section.

(d) The owner or operator shall perform or cause to be performed inspections and tests on process equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations, industry standards or codes, good engineering practices, and prior operating experience.

40 CFR 68.73 Mechanical integrity.

(a) Application. Paragraphs (b) through (f) of this section apply to the following process equipment:

- (1) Pressure vessels and storage tanks;
- (2) Piping systems (including piping components such as valves);
- (3) Relief and vent systems and devices;
- (4) Emergency shutdown systems;
- (5) Controls (including monitoring devices and sensors, alarms, and interlocks) and,
- (6) Pumps.

(b) Written procedures. The owner or operator shall establish and implement written procedures to maintain the on-going integrity of process equipment.

(c) Training for process maintenance activities. The owner or operator shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(d) Inspection and testing. (1) Inspections and tests shall be performed on process equipment.

(2) Inspection and testing procedures shall follow recognized and generally accepted good engineering practices.

(3) The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience.

(4) The owner or operator shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

40 CFR 68.93 Emergency response coordination activities.

The owner or operator of a stationary source shall coordinate response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance.

(a) Coordination shall occur at least annually, and more frequently if necessary, to address changes: At the stationary source; in the stationary source's emergency response and/or emergency action plan; and/or in the community emergency response plan.

(b) Coordination shall include providing to the local emergency planning and response organizations: The stationary source's emergency response plan if one exists; emergency action plan; updated emergency contact information; and other information necessary for developing and implementing the local emergency response plan. For responding stationary sources, coordination shall also include consulting with local emergency response officials to establish appropriate schedules and plans for field and tabletop exercises required under §68.96(b). The owner or operator shall request an opportunity to meet with the local emergency planning committee (or equivalent) and/or local fire department as appropriate to review and discuss those materials.

(c) The owner or operator shall document coordination with local authorities, including: The names of individuals involved and their contact information (phone number, email address, and organizational affiliations); dates of coordination activities; and nature of coordination activities.

(d) Classified and restricted information. The disclosure of information classified or restricted by the Department of Defense or other Federal agencies or contractors of such agencies shall be controlled by applicable laws, regulations, or executive orders concerning the release of that classified or restricted information.

Subpart E—Emergency Response

40 CFR 68.96 Emergency response exercises.

(a) Notification exercises. At least once each calendar year, the owner or operator of a stationary source with any Program 2 or Program 3 process shall conduct an exercise of the stationary source's emergency response notification mechanisms required under §68.90(b)(3) or §68.95(a)(1)(i), as appropriate, before December 19, 2024, and annually thereafter. Owners or operators of responding stationary sources may perform the notification exercise as part of the tabletop and field exercises required in paragraph (b) of this section. The owner/operator shall maintain a written record of each notification exercise conducted over the last five years.

(b) Emergency response exercise program. The owner or operator of a stationary source subject to the requirements of §68.95 shall develop and implement an exercise program for its emergency response program, including the plan required under §68.95(a)(1). Exercises shall involve facility emergency response personnel and, as appropriate, emergency response contractors. When planning emergency response field and tabletop exercises, the owner or operator shall coordinate with local public emergency response officials and invite them to participate in the exercise. The emergency response exercise program shall include:

(1) Emergency response field exercises. The owner or operator shall conduct field exercises involving the simulated accidental release of a regulated substance (i.e., toxic substance release or release of a regulated flammable substance involving a fire and/or explosion).

(i) Frequency. As part of coordination with local emergency response officials required by §68.93, the owner or operator shall consult with these officials to establish an appropriate frequency for field exercises.

(ii) Scope. Field exercises shall involve tests of the source's emergency response plan, including deployment of emergency response personnel and equipment. Field exercises should include: Tests of procedures to notify the public and the appropriate Federal, state, and local emergency response agencies about an accidental release; tests of procedures and measures for emergency response actions including evacuations and medical treatment; tests of communications systems; mobilization of facility emergency response personnel, including contractors, as appropriate; coordination with local emergency responders; emergency response equipment deployment; and any other action identified in the emergency response program, as appropriate.

(2) Tabletop exercises. The owner or operator shall conduct a tabletop exercise involving the simulated accidental release of a regulated substance.

(i) Frequency. As part of coordination with local emergency response officials required by §68.93, the owner or operator shall consult with these officials to establish an appropriate frequency for tabletop exercises, and shall conduct a tabletop exercise before December 21, 2026, and at a minimum of at least once every three years thereafter.

(ii) Scope. Tabletop exercises shall involve discussions of the source's emergency response plan. The exercise should include discussions of: Procedures to notify the public and the appropriate Federal, state, and local emergency response agencies; procedures and measures for emergency response including evacuations and medical treatment; identification of facility emergency response personnel and/or contractors and their responsibilities; coordination with local emergency responders; procedures for emergency response equipment deployment; and any other action identified in the emergency response plan, as appropriate.

(3) Documentation. The owner or operator shall prepare an evaluation report within 90 days of each field and tabletop exercise. The report should include: A description of the exercise scenario; names and organizations of each participant; an evaluation of the exercise results including lessons learned; recommendations for improvement or revisions to the emergency response exercise program and emergency response program, and a schedule to promptly address and resolve recommendations.

(c) Alternative means of meeting exercise requirements. The owner or operator may satisfy the requirement to conduct notification, field and/or tabletop exercises through:

(1) Exercises conducted to meet other Federal, state or local exercise requirements, provided the exercise meets the requirements of paragraphs (a) and/or (b) of this section, as appropriate.

(2) Response to an accidental release, provided the response includes the actions indicated in paragraphs (a) and/or (b) of this section, as appropriate. When used to meet field and/or tabletop exercise requirements, the owner or operator shall prepare an after-action report comparable to the exercise evaluation report required in paragraph (b)(3) of this section, within 90 days of the incident.

A.2.6 Updated Periodically

RMP has the following provisions relevant to the CWA section 311(j)(5)(D)(v) requirement that response plans shall be updated periodically. The regulatory text is shown below.

Subpart B - Hazard Assessment
40 CFR 68.36 Review and update.

(a) The owner or operator shall review and update the offsite consequence analyses at least once every five years.

Subpart E - Emergency Response
40 CFR 68.95 Emergency response program.

(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

(1) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements:

...

(4) Procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes. The owner or operator shall review and update the plan as appropriate based on changes at the stationary source or new information obtained from coordination activities, emergency response exercises, incident investigations, or other available information, and ensure that employees are informed of the changes.

Subpart G - Risk Management Plan
40 CFR 68.190 Updates.

(a) The owner or operator shall review and update the RMP as specified in paragraph (b) of this section and submit it in the method and format to the central point specified by EPA as of the date of submission.

(b) The owner or operator of a stationary source shall revise and update the RMP submitted under §68.150 as follows:

(1) At least once every five years from the date of its initial submission or most recent update required by paragraphs (b)(2) through (b)(7) of this section, whichever is later. For purposes of determining the date of initial submissions, RMPs submitted before June 21, 1999 are considered to have been submitted on that date.

(2) No later than three years after a newly regulated substance is first listed by EPA;

(3) No later than the date on which a new regulated substance is first present in an already covered process above a threshold quantity;

(4) No later than the date on which a regulated substance is first present above a threshold quantity in a new process;

40 CFR 68.195 Required corrections.

The owner or operator of a stationary source for which a RMP was submitted shall correct the RMP as follows:

(a) New accident history information—For any accidental release meeting the five-year accident history reporting criteria of §68.42 and occurring after April 9, 2004, the owner or operator shall submit the data required under §§68.168, 68.170(j), and 68.175(l) with respect to that accident within six months of the release or by the time the RMP is updated under §68.190, whichever is earlier.

(b) Emergency contact information—Beginning June 21, 2004, within one month of any change in the emergency contact information required under §68.160(b)(6), the owner or operator shall submit a correction of that information.

A.2.7 Resubmitted for Approval of Each Significant Change

RMP has the following provisions relevant to the CWA section 311(j)(5)(D)(vi) requirement that response plans shall be resubmitted for approval of each significant change. The regulatory text is shown below.

Subpart B - Hazard Assessment

40 CFR 68.36 Review and update.

(b) If changes in processes, quantities stored or handled, or any other aspect of the stationary source might reasonably be expected to increase or decrease the distance to the endpoint by a factor of two or more, the owner or operator shall complete a revised analysis within six months of the change and submit a revised risk management plan as provided in §68.190.

Subpart G - Risk Management Plan

40 CFR 68.190 Updates.

(a) The owner or operator shall review and update the RMP as specified in paragraph (b) of this section and submit it in the method and format to the central point specified by EPA as of the date of submission.

(b) The owner or operator of a stationary source shall revise and update the RMP submitted under §68.150 as follows:

(5) Within six months of a change that requires a revised PHA or hazard review;

(6) Within six months of a change that requires a revised offsite consequence analysis as provided in §68.36; and

(7) Within six months of a change that alters the Program level that applied to any covered process.

(c) If a stationary source is no longer subject to this part, the owner or operator shall submit a de-registration to EPA within six months indicating that the stationary source is no longer covered.

A.3 Emergency Planning Notification and Emergency Release Notification (40 CFR part 355)

A.3.1 Identifies the Qualified Individual and Requires Communications

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(ii) requirement that response plans “. . . shall identify the qualified individual having full authority to implement removal actions and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment.” Facilities that are subject to emergency planning notification are required to designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator. The regulatory text is shown below.

40 CFR 355.20 If this subpart applies to my facility, what information must I provide, who must I submit it to, and when is it due?

Use this table to determine the information you must provide, who to provide it to, and when:

What types of emergency planning notification are required?	What information must I provide?	To whom must I provide the information?	When must I provide the information?
(a) Emergency planning notification	You must provide notice that your facility is subject to the emergency planning requirements of this subpart	To the SERC and the LEPC	Within 60 days after your facility first becomes subject to the requirements of this subpart. If no LEPC exists for your facility at the time you are required to provide emergency planning notification, then you should report to the LEPC within 30 days after an LEPC is established for the emergency planning district in which your facility is located.
(b) Facility emergency coordinator	You must designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator. You must provide notice of this facility representative	To the LEPC (or the SERC if there is no LEPC, or the Governor if there is no SERC)	Within 60 days after your facility first becomes subject to the requirements of this subpart. If no LEPC exists when you first report, then provide an additional report to the LEPC within 30 days after such LEPC is established for the emergency planning district in which your facility is located.
(c) Changes relevant to emergency planning	You must provide notice of any changes occurring at your facility that may be relevant to emergency planning	To the LEPC	Within 30 days after the changes have occurred.
(d) Requested information	You must provide any information necessary for developing or implementing the local emergency plan if the LEPC requests it	To the LEPC	Promptly. Note: The LEPC may specify a time frame for this information.

A.4 Hazardous Chemical Reporting: Community Right to Know (40 CFR part 370)

A.4.1 Identifies the Qualified Individual and Requires Communications

EPA identified provisions that are partially relevant to the CWA part 311(j)(5)(D)(ii) requirement that response plans “. . . shall identify the qualified individual having full authority to implement removal actions and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment.” The regulatory text is shown below.

40 CFR 370.41 What is Tier I inventory information?

Tier I information provides State and local officials and the public with information on the general types and locations of hazardous chemicals present at your facility during the previous calendar year. The Tier I information is the minimum information that you must provide to be in compliance with the inventory reporting requirements of this part. If you are reporting Tier I information, you must report aggregate information on hazardous chemicals by hazard categories. The hazard categories (physical and health hazards) are defined in §370.66. Tier I inventory form includes the following data elements:

(o) The name, title, phone number, 24-hour phone number, and email address of the facility emergency coordinator, if applicable.

Note to paragraph (o): EPCRA Section 303(d)(1) requires facilities subject to the emergency planning notification requirement under EPCRA section 302 (including additional facilities designated by the Governor or the SERC [or TERC] under EPCRA section 302(b)(2)) to designate a facility representative who will participate in the local emergency planning process as a facility emergency coordinator. EPA encourages facilities not subject to the emergency planning notification requirement also to provide this information, if available, for effective emergency planning in your community.

(p) The name, title, phone number, and email address of the person to contact for the information contained in the Tier I form.

(q) The name, title, phone number and email address of at least one local individual that can act as a referral if emergency responders need assistance in responding to a chemical accident at your facility. You must also provide an emergency phone number which will be available 24 hours a day, every day.

40 CFR 370.42 What is Tier II inventory information?

Tier II information provides State and local officials and the public with specific information on the amounts and locations of hazardous chemicals present at your facility during the previous calendar year. Some states may require you to use a state reporting format including electronic reporting and certification for submitting your hazardous chemical inventory. Contact your state for the specific requirements in that state. Tier II inventory form includes the following data elements:

...

(o) The name, title, phone number, 24-hour phone number, and email address of the facility emergency coordinator, if applicable.

Note to paragraph (o): EPCRA Section 303(d)(1) requires facilities subject to the emergency planning notification requirement under EPCRA section 302 (including additional facilities designated by the

Governor or the SERC under EPCRA section 302(b)(2)) to designate a facility representative who will participate in the local emergency planning process as a facility emergency coordinator. EPA encourages facilities not subject to the emergency planning notification requirement also to provide this information, if available, for effective emergency planning in your community.

(p) The name, title, phone number, and email address of the person to contact for the information contained in the Tier II form.

(q) The name, title, phone number and email address of at least one local individual that can act as a referral if emergency responders need assistance in responding to a chemical accident at your facility. You must also provide an emergency phone number which will be available 24 hours a day, every day.

A.5 National Pollutant Discharge Elimination System (40 CFR part 122)

A.5.1 Plans for Responding to Worst Case Discharge

40 CFR part 122 has the following provisions that are partially relevant to the CWA section 311(j)(5)(A) requirement for plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance.” Although the plan is more focused on prevention, it does have response components in both training and identifying equipment. The regulatory text is shown below.

40 CFR 122.26 Storm water discharges

Under 40 CFR 122.26, which addresses storm water discharges, application requirements for the operator of a large or medium municipal separate storm sewer system must include a stormwater management program, which includes emergency spill response programs and a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer system, and thus to waters of the United States.

40 CFR 122.26(a)(3)(iii):

The operator of a discharge from a municipal separate storm sewer which is part of a large or medium municipal separate storm sewer system must either:

(A) Participate in a permit application (to be a permittee or a co-permittee) with one or more other operators of discharges from the large or medium municipal storm sewer system which covers all, or a portion of all, discharges from the municipal separate storm sewer system;

(B) Submit a distinct permit application which only covers discharges from the municipal separate storm sewers for which the operator is responsible; or

(C) A regional authority may be responsible for submitting a permit application under the following guidelines:

(1) The regional authority together with co-applicants shall have authority over a storm water management program that is in existence, or shall be in existence at the time part 1 of the application is due;

(2) The permit applicant or co-applicants shall establish their ability to make a timely submission of part 1 and part 2 of the municipal application;

(3) Each of the operators of municipal separate storm sewers within the systems described in paragraphs (b)(4) (i), (ii), and (iii) or (b)(7) (i), (ii), and (iii) of this section, that are under the purview of the designated regional authority, shall comply with the application requirements of paragraph (d) of this section.

A.6 General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR part 403)

A.6.1 Plans for Responding to Worst Case Discharge

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(A) requirement for plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance. The requirements are at the discretion of the regulatory authority. The regulatory text is shown below.

40 CFR 403.8 Pretreatment Program Requirements: Development and Implementation

...

(f) POTW pretreatment requirements. A POTW pretreatment program must be based on the following legal authority and include the following procedures. These authorities and procedures shall at all times be fully and effectively exercised and implemented.

...

(2) Procedures. The POTW shall develop and implement procedures to ensure compliance with the requirements of a Pretreatment Program. At a minimum, these procedures shall enable the POTW to:

...

vi) Evaluate whether each such Significant Industrial User needs a plan or other action to control Slug Discharges. For Industrial Users identified as significant prior to November 14, 2005, this evaluation must have been conducted at least once by October 14, 2006; additional Significant Industrial Users must be evaluated within 1 year of being designated a Significant Industrial User. For purposes of this subsection, a Slug Discharge is any Discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch Discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, local limits or Permit conditions. The results of such activities shall be available to the Approval Authority upon request. Significant Industrial Users are required to notify the POTW immediately of any changes at its facility affecting potential for a Slug Discharge. If the POTW decides that a slug control plan is needed, the plan shall contain, at a minimum, the following elements:

(A) Description of discharge practices, including non-routine batch Discharges;

(B) Description of stored chemicals;

(C) Procedures for immediately notifying the POTW of Slug Discharges, including any Discharge that would violate a prohibition under §403.5(b) with procedures for follow-up written notification within five days;

(D) If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response;

A.6.2 Identifies the Qualified Individual and Requires Communications

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(ii) requirement that response plan “. . . shall identify the qualified individual having full authority to removal actions and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment.” The requirements are at the discretion of the regulatory authority. The regulatory text is shown below.

40 CFR 403.8 Pretreatment Program Requirements: Development and Implementation by POTW

...

(f) POTW pretreatment requirements. A POTW pretreatment program must be based on the following legal authority and include the following procedures. These authorities and procedures shall at all times be fully and effectively exercised and implemented.

...

(2) Procedures. The POTW shall develop and implement procedures to ensure compliance with the requirements of a Pretreatment Program. At a minimum, these procedures shall enable the POTW to:

...

vi) Evaluate whether each such Significant Industrial User needs a plan or other action to control Slug Discharges. For Industrial Users identified as significant prior to November 14, 2005, this evaluation must have been conducted at least once by October 14, 2006; additional Significant Industrial Users must be evaluated within 1 year of being designated a Significant Industrial User. For purposes of this subsection, a Slug Discharge is any Discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch Discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, local limits or Permit conditions. The results of such activities shall be available to the Approval Authority upon request. Significant Industrial Users are required to notify the POTW immediately of any changes at its facility affecting potential for a Slug Discharge. If the POTW decides that a slug control plan is needed, the plan shall contain, at a minimum, the following elements:

(A) Description of discharge practices, including non-routine batch Discharges;

(B) Description of stored chemicals;

(C) Procedures for immediately notifying the POTW of Slug Discharges, including any Discharge that would violate a prohibition under §403.5(b) with procedures for follow-up written notification within five days;

(D) If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response;

A.6.3 Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions

EPA has identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iv) requirement that response plans “. . . shall describe the training, equipment testing, periodic unannounced drills, and

response actions of persons [on the vessel or] at the facility, to be carried out under the plan to ensure the safety of the [vessel or] facility and to mitigate or prevent the discharge, or the substantial threat of a discharge". The requirements are at the discretion of the regulatory authority. The regulation says slug control plan must require procedures on training. The regulatory text is shown below.

40 CFR 403.8(f) POTW pretreatment requirements.

(2)(vi.) Evaluate whether each such Significant Industrial User needs a plan or other action to control Slug Discharges. For Industrial Users identified as significant prior to November 14, 2005, this evaluation must have been conducted at least once by October 14, 2006; additional Significant Industrial Users must be evaluated within 1 year of being designated a Significant Industrial User. For purposes of this subsection, a Slug Discharge is any Discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch Discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, local limits or Permit conditions. The results of such activities shall be available to the Approval Authority upon request. Significant Industrial Users are required to notify the POTW immediately of any changes at its facility affecting potential for a Slug Discharge. If the POTW decides that a slug control plan is needed, the plan shall contain, at a minimum, the following elements:

...

(D) If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response;

A.7 Oil Pollution Prevention Regulations

A.7.1 Consistent with NCP and ACP

EPA identified Oil Pollution Prevention FRP program provisions that are partially relevant to the CWA section 311 (j)(5)(D)(i) requirement that response plan shall be consistent with the requirements of the NCP and ACPs. The regulatory text is shown below.

40 CFR 112.20 Facility response plans

...

(g)(1) All facility response plans shall be consistent with the requirements of the National Oil and Hazardous Substance Pollution Contingency Plan (40 CFR part 300) and applicable Area Contingency Plans prepared pursuant to section 311(j)(4) of the Clean Water Act. The facility response plan should be coordinated with the local emergency response plan developed by the local emergency planning committee under section 303 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 11001 et seq.). Upon request, the owner or operator should provide a copy of the facility response plan to the local emergency planning committee or State emergency response commission. (2) The owner or operator shall review relevant portions of the National Oil and Hazardous Substances Pollution Contingency Plan and applicable Area Contingency Plan annually and, if necessary, revise the facility response plan to ensure consistency with these plans.

A.7.2 Identifies the Qualified Individual and Requires Communications

EPA identified Oil Pollution Prevention FRP program requirements that are partially relevant to the CWA section 311 (j)(5)(D)(ii) requirement that the response plan shall identify the qualified individual having

full authority to implement removal actions, and require immediate communications between that individual and the appropriate federal official and the persons providing personnel and equipment. The regulatory text is shown below.

40 CFR 112.20 Facility response plans.

...

(h) A response plan shall follow the format of the model facility-specific response plan included in appendix F to this part, unless you have prepared an equivalent response plan acceptable to the Regional Administrator to meet State or other Federal requirements. A response plan that does not follow the specified format in appendix F to this part shall have an emergency response action plan as specified in paragraphs (h)(1) of this section and be supplemented with a cross-reference section to identify the location of the elements listed in paragraphs (h)(2) through (h)(10) of this section. To meet the requirements of this part, a response plan shall address the following elements, as further described in appendix F to this part:

(2) Facility information. The response plan shall identify and discuss the location and type of the facility, the identity and tenure of the present owner and operator, and the identity of the qualified individual identified in paragraph (h)(1) of this section.

(3) Information about emergency response. The response plan shall include:

(i) The identity of private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge and other discharges of oil described in paragraph (h)(5) of this section, and to mitigate or prevent a substantial threat of a worst case discharge (To identify response resources to meet the facility response plan requirements of this section, owners or operators shall follow appendix E to this part or, where not appropriate, shall clearly demonstrate in the response plan why use of appendix E of this part is not appropriate at the facility and make comparable arrangements for response resources);

(ii) Evidence of contracts or other approved means for ensuring the availability of such personnel and equipment;

(iii) The identity and the telephone number of individuals or organizations to be contacted in the event of a discharge so that immediate communications between the qualified individual identified in paragraph (h)(1) of this section and the appropriate Federal official and the persons providing response personnel and equipment can be ensured;

(iv) A description of information to pass to response personnel in the event of a reportable discharge;

(v) A description of response personnel capabilities, including the duties of persons at the facility during a response action and their response times and qualifications;

(vi) A description of the facility's response equipment, the location of the equipment, and equipment testing;

(vii) Plans for evacuation of the facility and a reference to community evacuation plans, as appropriate;

(viii) A diagram of evacuation routes; and

(ix) A description of the duties of the qualified individual identified in paragraph (h)(1) of this section, that include:

- (A) Activate internal alarms and hazard communication systems to notify all facility personnel;
- (B) Notify all response personnel, as needed;
- (C) Identify the character, exact source, amount, and extent of the release, as well as the other items needed for notification;
- (D) Notify and provide necessary information to the appropriate Federal, State, and local authorities with designated response roles, including the National Response Center, State Emergency Response Commission, and Local Emergency Planning Committee;
- (E) Assess the interaction of the discharged substance with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment;
- (F) Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion);
- (G) Assess and implement prompt removal actions to contain and remove the substance released;
- (H) Coordinate rescue and response actions as previously arranged with all response personnel;
- (I) Use authority to immediately access company funding to initiate cleanup activities; and
- (J) Direct cleanup activities until properly relieved of this responsibility.

Appendix F to 40 CFR 112 – Facility-Specific Response Plan

1.3.6 Qualified Individual's Duties

The duties of the designated qualified individual are specified in § 112.20(h)(3)(ix). The qualified individual's duties must be described and be consistent with the minimum requirements in § 112.20(h)(3)(ix). In addition, the qualified individual must be identified with the Facility Information in section 1.2 of the response plan.

A.7.3 Updated Periodically

The Oil Pollution Prevention FRP program has the following requirements partially relevant to the CWA section 311 (j)(5)(D)(v) requirement that the response plan shall be updated periodically. The regulatory text is shown below.

40 CFR 112.20 Facility response plans.

...

(d)(1) The owner or operator of a facility for which a response plan is required under this part shall revise and resubmit revised portions of the response plan within 60 days of each facility change that materially may affect the response to a worst case discharge, including:

(i) A change in the facility's configuration that materially alters the information included in the response plan;

(ii) A change in the type of oil handled, stored, or transferred that materially alters the required response resources;

(iii) A material change in capabilities of the oil spill removal organization(s) that provide equipment and personnel to respond to discharges of oil described in paragraph (h)(5) of this section;

(iv) A material change in the facility's spill prevention and response equipment or emergency response procedures; and

(v) Any other changes that materially affect the implementation of the response plan.

(2) Except as provided in paragraph (d)(1) of this section, amendments to personnel and telephone number lists included in the response plan and a change in the oil spill removal organization(s) that does not result in a material change in support capabilities do not require approval by the Regional Administrator. Facility owners or operators shall provide a copy of such changes to the Regional Administrator as the revisions occur.

(3) The owner or operator of a facility that submits changes to a response plan as provided in paragraph (d)(1) or (d)(2) of this section shall provide the EPA-issued facility identification number (where one has been assigned) with the changes.

(4) The Regional Administrator shall review for approval changes to a response plan submitted pursuant to paragraph (d)(1) of this section for a facility determined pursuant to paragraph (f)(3) of this section to have the potential to cause significant and substantial harm to the environment.

(g)

...

(3) The owner or operator shall review and update the facility response plan periodically to reflect changes at the facility.

A.8 Pesticide Management and Disposal (40 CFR part 165)

The following subsections include the regulatory text for the citations identified as relevant to CWA section 311 (j)(5) requirements.

A.8.1 Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iv) requirement that response plans “. . . shall describe the training, equipment testing, periodic unannounced drills, and response actions of persons [on the vessel or] at the facility, to be carried out under the plan to ensure the safety of the [vessel or] facility and to mitigate or prevent the discharge, or the substantial threat of a discharge.” There are inspection requirements for containment structures. The regulatory text is shown below.

40 CFR 165.90 Operational, inspection and maintenance requirements for all new and existing containment structures.

(a) What are the operating procedures required for all new and existing containment structures? As the owner or operator of a new or existing pesticide containment structure, you must:

- (1) Manage the structure in a manner that prevents pesticides or materials containing pesticides from escaping from the containment structure (including, but not limited to, pesticide residues washed off the containment structure by rainfall or cleaning liquids used within the structure.)
- (2) Ensure that pesticide spills and leaks on or in any containment structure are collected and recovered in a manner that ensures protection of human health and the environment (including surface water and groundwater) and maximum practicable recovery of the pesticide spilled or leaked. Cleanup must occur no later than the end of the day on which pesticides have been spilled or leaked except in circumstances where a reasonable delay would significantly reduce the likelihood or severity of adverse effects to human health or the environment.
- (3) Ensure that all materials resulting from spills and leaks and any materials containing pesticide residue are managed according to label instructions and applicable Federal, State and local laws and regulations.
- (4) Ensure that transfers of pesticides between containers, or between containers and transport vehicles are attended at all times.
- (5) Ensure that each lockable valve on a stationary pesticide container, if it is required by §165.45(f), is closed and locked, or that the facility is locked, whenever the facility is unattended.

(b) What are the inspection and maintenance requirements for all new and existing containment structures? As owner or operator of a new or existing pesticide containment structure, you must:

- (1) Inspect each stationary pesticide container and its appurtenances and each containment structure at least monthly during periods when pesticides are being stored or dispensed on the containment structure. Your inspection must look for visible signs of wetting, discoloration, blistering, bulging, corrosion, cracks or other signs of damage or leakage.
- (2) Initiate repair to any areas showing visible signs of damage and seal any cracks and gaps in the containment structure or appurtenances with material compatible with the pesticide being stored or dispensed no later than the end of the day on which damage is noticed and complete repairs within a time frame that is reasonable, taking into account factors such as the weather, and the availability of cleanup materials, trained staff, and equipment.
- (3) Not store any additional pesticide on a containment structure if the structure fails to meet the requirements of this subpart until suitable repairs have been made.

A.9 Pesticide Agricultural Worker Protection Standard (40 CFR part 170)

A.9.1 Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions

EPA identified requirements that are partially relevant to the CWA section 311(j)(5)(D)(iv) requirement that response plans “. . . shall describe the training, equipment testing, periodic unannounced drills, and response actions of persons [on the vessel or] at the facility, to be carried out under the plan to ensure the safety of the [vessel or] facility and to mitigate or prevent the discharge, or the substantial threat of a discharge.” The regulatory text is shown below.

40 CFR 170.230 Pesticide safety training for handlers.

...

4) The pesticide safety training materials must convey, at a minimum, the following information:

...

(x) Safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup.

40 CFR 170.501 Training requirements for handlers.

(2) The pesticide safety training materials must include, at a minimum, all of the following topics:

...

(x) Safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup.

A.10 Criteria for Classification of Solid Waste Disposal Facilities and Practices Subpart D—Standards for the Disposal of CCRs in Landfills and Surface Impoundments (40 CFR part 257)

The following subsections include the regulatory text for the citations identified as relevant to CWA section 311(j)(5) requirements.

A.10.1 Plans for Responding to Worst Case Discharge

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(A) requirement for plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance. The regulatory text is shown below.

40 CFR 257.73 Structural integrity criteria for existing CCR surface impoundments.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—(i) Development of the plan. No later than April 17, 2017, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under paragraph (a)(2) of this section must prepare and maintain a written EAP. At a minimum, the EAP must:

(A) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(B) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(C) Provide contact information of emergency responders;

(D) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(E) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

...

§257.74 Structural integrity criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—(i) Development of the plan. Prior to the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under paragraph (a)(2) of this section must prepare and maintain a written EAP. At a minimum, the EAP must:

(A) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

B) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(C) Provide contact information of emergency responders;

(D) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(E) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

A.10.2 Identifies the Qualified Individual and Requires Communication

EPA identified provisions that are relevant to the CWA section 311(j)(5)(D)(ii) requirement that response plans shall identify the qualified individual having full authority implement removal actions and require immediate communications between that individual and the appropriate federal official and the persons providing personnel and equipment. The regulatory text is shown below.

40 CFR 257.73 Structural integrity criteria for existing CCR surface impoundments.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—(i) Development of the plan. No later than April 17, 2017, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a

significant hazard potential CCR surface impoundment under paragraph (a)(2) of this section must prepare and maintain a written EAP. At a minimum, the EAP must:

...

(B) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(C) Provide contact information of emergency responders;

40 CFR 257.74 Structural integrity criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—(i) Development of the plan. Prior to the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under paragraph (a)(2) of this section must prepare and maintain a written EAP. At a minimum, the EAP must:

...

(B) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(C) Provide contact information of emergency responders;

A.10.3 Updated Periodically

EPA identified requirements that are relevant to the CWA section 311(j)(5)(D)(v) requirement that response plans shall be updated periodically. The regulatory text is shown below.

40 CFR 257.73 Structural integrity criteria for existing CCR surface impoundments.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—

...

(ii) Amendment of the plan.

(A) The owner or operator of a CCR unit subject to the requirements of paragraph (a)(3)(i) of this section may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by §257.105(f)(6). The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(B) The written EAP must be evaluated, at a minimum, every five years to ensure the information required in paragraph (a)(3)(i) of this section is accurate. As necessary, the EAP must be updated and a revised EAP placed in the facility's operating record as required by §257.105(f)(6).

40 CFR 257.74 Structural integrity criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—

...

(ii) Amendment of the plan.

(A) The owner or operator of a CCR unit subject to the requirements of paragraph (a)(3)(i) of this section may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by §257.105(f)(6). The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(B) The written EAP must be evaluated, at a minimum, every five years to ensure the information required in paragraph (a)(3)(i) of this section is accurate. As necessary, the EAP must be updated and a revised EAP placed in the facility's operating record as required by §257.105(f)(6).

A.10.4 Resubmitted for Approval of Each Significant Change

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(vi) requirement that response plans shall be resubmitted for approval of each significant change. The regulatory text is shown below.

40 CFR 257.73 Structural integrity criteria for existing CCR surface impoundments.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—

...

(ii) Amendment of the plan. (A) The owner or operator of a CCR unit subject to the requirements of paragraph (a)(3)(i) of this section may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by §257.105(f)(6). The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

40 CFR 257.74 Structural integrity criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) The requirements of paragraphs (a)(1) through (4) of this section apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of paragraphs (a)(1) through (4) of this section.

...

(3) Emergency Action Plan (EAP)—

...

(ii) Amendment of the plan. (A) The owner or operator of a CCR unit subject to the requirements of paragraph (a)(3)(i) of this section may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by §257.105(f)(6). The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

A.11 RCRA Standards Applicable to Generators of Hazardous Waste (40 CFR part 262)

A.11.1 Plans for Responding to Worst Case Discharge

The RCRA generators regulations have the following provisions relevant to the CWA section 311(j)(5)(A) requirement for plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance. The regulatory text is shown below.

40 CFR 262.16 Conditions for exemption for a small quantity generator that accumulates hazardous waste.¹¹²

...

(b) (8) Preparedness and prevention.

(i) Maintenance and operation of facility. A small quantity generator must maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

(ii) Required equipment. All areas where hazardous waste is either generated or accumulated must be equipped with the items in [paragraphs \(b\)\(8\)\(ii\)\(A\) through \(D\)](#) of this section (unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below or the actual waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below). A small quantity generator may determine the most appropriate locations to locate equipment necessary to prepare for and respond to emergencies.

(A) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

¹¹² This regulatory element only applies to small quantity generators.

(B) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

(C) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

(D) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

(iii) Testing and maintenance of equipment. All communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

(iv) Access to communications or alarm system.

(A) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access (e.g., direct or unimpeded access) to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under paragraph (a)(8)(ii) of this section.

(B) In the event there is just one employee on the premises while the facility is operating, the employee must have immediate access (e.g., direct or unimpeded access) to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under [paragraph \(a\)\(8\)\(ii\)](#) of this section.

(v) Required aisle space. The small quantity generator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

(vi) Arrangements with local authorities.

(A) The small quantity generator must attempt to make arrangements with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals, taking into account the types and quantities of hazardous wastes handled at the facility. Arrangements may be made with the Local Emergency Planning Committee, if it is determined to be the appropriate organization with which to make arrangements.

(1) A small quantity generator attempting to make arrangements with its local fire department must determine the potential need for the services of the local police department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals.

(2) As part of this coordination, the small quantity generator shall attempt to make arrangements, as necessary, to familiarize the above organizations with the layout of the facility, the properties of hazardous waste handled at the facility and associated hazards,

places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes as well as the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.

(3) Where more than one police or fire department might respond to an emergency, the small quantity generator shall attempt to make arrangements designating primary emergency authority to a specific fire or police department, and arrangements with any others to provide support to the primary emergency authority.

(B) A small quantity generator shall maintain records documenting the arrangements with the local fire department as well as any other organization necessary to respond to an emergency. This documentation must include documentation in the operating record that either confirms such arrangements actively exist or, in cases where no arrangements exist, confirms that attempts to make such arrangements were made.

(C) A facility possessing 24-hour response capabilities may seek a waiver from the authority having jurisdiction (AHJ) over the fire code within the facility's state or locality as far as needing to make arrangements with the local fire department as well as any other organization necessary to respond to an emergency, provided that the waiver is documented in the operating record.

(b) (9) Emergency procedures. The small quantity generator complies with the following conditions for those areas of the generator facility where hazardous waste is generated and accumulated:

(i) At all times there must be at least one employee either on the premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures specified in paragraph (b)(9)(iv) of this section. This employee is the emergency coordinator.

(ii) The small quantity generator must post the following information next to telephones or in areas directly involved in the generation and accumulation of hazardous waste:

(A) The name and emergency telephone number of the emergency coordinator;

(B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and

(C) The telephone number of the fire department, unless the facility has a direct alarm.

(iii) The small quantity generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies;

(iv) The emergency coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

(A) In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;

(B) In the event of a spill, the small quantity generator is responsible for containing the flow of hazardous waste to the extent possible, and as soon as is practicable, cleaning up the hazardous waste and any contaminated materials or soil. Such containment and cleanup can be conducted either by the small quantity generator or by a contractor on behalf of the small quantity generator;

(C) In the event of a fire, explosion, or other release that could threaten human health outside the facility or when the small quantity generator has knowledge that a spill has reached surface water, the small quantity generator must immediately notify the

National Response Center (using their 24-hour toll free number 800/424–8802). The report must include the following information:

- (1) The name, address, and U.S. EPA identification number of the small quantity generator;
- (2) Date, time, and type of incident (e.g., spill or fire);
- (3) Quantity and type of hazardous waste involved in the incident;
- (4) Extent of injuries, if any; and
- (5) Estimated quantity and disposition of recovered materials, if any.

40 CFR 262.17 Emergency procedures.

(a)(6) Emergency procedures. The large quantity generator complies with the standards in [subpart M of this part](#), Preparedness, Prevention and Emergency Procedures for Large Quantity Generators.

*40 CFR 262.260 Purpose and implementation of contingency plan.*¹¹³

(a) A large quantity generator must have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

*40 CFR 262.261 Content of contingency plan.*¹¹⁴

(a) The contingency plan must describe the actions facility personnel must take to comply with §§262.260 and 262.265 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(b) If the generator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with part 112 of this chapter, or some other emergency or contingency plan, it need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the standards of this part. The generator may develop one contingency plan that meets all regulatory standards. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan").

(c) The plan must describe arrangements agreed to with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, local hospitals or, if applicable, the Local Emergency Planning Committee, pursuant to §262.256.

(d) The plan must list names and emergency telephone numbers of all persons qualified to act as emergency coordinator (see §262.264), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. In situations where the generator facility has an emergency coordinator continuously on duty because it operates 24 hours per day, every day of the year, the plan may list the staffed position (e.g., operations manager, shift coordinator, shift operations

¹¹³ This regulatory element only applies to large quantity generators.

¹¹⁴ This regulatory element only applies to large quantity generators.

supervisor) as well as an emergency telephone number that can be guaranteed to be answered at all times.

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(f) The plan must include an evacuation plan for generator personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

A.11.2 Consistent with NCP and ACP

RCRA generators regulations have the following provisions relevant to the CWA section 311(j)(5)(D)(i) requirement that response plans shall be consistent with the requirements of the NCP and ACPs. The regulatory text is shown below.

*40 CFR 262.261 Content of contingency plan.*¹¹⁵

...

(b) If the generator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with part 112 of this chapter, or some other emergency or contingency plan, it need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the standards of this part. The generator may develop one contingency plan that meets all regulatory standards. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan").

A.11.3 Identifies the Qualified Individual and Requires Communications

RCRA generators regulations have the following provisions relevant to the CWA section 311(j)(5)(D)(ii) requirement that response plans shall identify the qualified individual having full authority to implement removal actions, and require immediate communications between that individual and the appropriate federal official and the persons providing personnel and equipment. The regulatory text is shown below.

*40 CFR 262.16 Conditions for exemption for a small quantity generator that accumulates hazardous waste.*¹¹⁶

...

(b) (9) Emergency procedures. The small quantity generator complies with the following conditions for those areas of the generator facility where hazardous waste is generated and accumulated:

(i) At all times there must be at least one employee either on the premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures specified in paragraph (b)(9)(iv) of this section. This employee is the emergency coordinator.

¹¹⁵ This regulatory element only applies to large quantity generators.

¹¹⁶ This regulatory element only applies to small quantity generators.

(iv) The emergency coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

(C) In the event of a fire, explosion, or other release that could threaten human health outside the facility or when the small quantity generator has knowledge that a spill has reached surface water, the small quantity generator must immediately notify the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include the following information:

- (1) The name, address, and U.S. EPA identification number of the small quantity generator;
- (2) Date, time, and type of incident (e.g., spill or fire);
- (3) Quantity and type of hazardous waste involved in the incident;
- (4) Extent of injuries, if any; and
- (5) Estimated quantity and disposition of recovered materials, if any.

40 CFR 262.17 Emergency procedures.

(a)(6) Emergency procedures. The large quantity generator complies with the standards in [subpart M of this part](#), Preparedness, Prevention and Emergency Procedures for Large Quantity Generators.

40 CFR 262.261 Content of contingency plan.¹¹⁷

...

(d) The plan must list names and emergency telephone numbers of all persons qualified to act as emergency coordinator (see §262.264), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. In situations where the generator facility has an emergency coordinator continuously on duty because it operates 24 hours per day, every day of the year, the plan may list the staffed position (e.g., operations manager, shift coordinator, shift operations supervisor) as well as an emergency telephone number that can be guaranteed to be answered at all times.

40 CFR 262.264 Emergency coordinator.¹¹⁸

At all times, there must be at least one employee either on the generator's premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures and implementing the necessary emergency procedures outlined in §262.265. Although responsibilities may vary depending on factors such as type and variety of hazardous waste(s) handled by the facility, as well as type and complexity of the facility, this emergency coordinator must be thoroughly familiar with all aspects of the generator's contingency plan, all operations and activities at the facility, the location and characteristics of hazardous waste handled, the location of all records within the facility, and the facility's layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

¹¹⁷ This regulatory element only applies to large quantity generators.

¹¹⁸ This regulatory element only applies to large quantity generators.

*40 CFR 262.265 Emergency procedures.*¹¹⁹

...

(2) The emergency coordinator must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

- (i) Name and telephone number of reporter;
- (ii) Name and address of the generator;
- (iii) Time and type of incident (e.g., release, fire);
- (iv) Name and quantity of material(s) involved, to the extent known;
- (v) The extent of injuries, if any; and
- (vi) The possible hazards to human health, or the environment, outside the facility.

A.11.4 Identify and Ensure Removal and Mitigation Personnel and Equipment

EPA has identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iii) requirement that response plans “. . . shall identify, and ensure by contract or other means [approved by the President] the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge.” The regulation requires the contingency plan to include a list of all emergency equipment at the facility but does not specifically discuss personnel equipment necessary to remove (to the maximum extent practicable) a worst case discharge. The regulatory text is shown below.

*40 CFR 262.16 Conditions for exemption for a small quantity generator that accumulates hazardous waste.*¹²⁰

...

(b)(8) Preparedness and prevention —

(ii) Required equipment. All areas where hazardous waste is either generated or accumulated must be equipped with the items in paragraphs (b)(8)(ii)(A) through (D) of this section (unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below or the actual waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below). A small quantity generator may determine the most appropriate locations to locate equipment necessary to prepare for and respond to emergencies.

(A) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(B) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

¹¹⁹ This regulatory element only applies to large quantity generators.

¹²⁰ This regulatory element only applies to small quantity generators.

(C) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

(D) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems

40 CFR 262.17 Emergency procedures.

(a)(6) Emergency procedures. The large quantity generator complies with the standards in [subpart M of this part](#), Preparedness, Prevention and Emergency Procedures for Large Quantity Generators.

*40 CFR 262.261 Content of contingency plan.*¹²¹

...

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

A.11.5 Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions

EPA has identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iv) requirement that response plans “. . . shall describe the training, equipment testing, periodic unannounced drills, and response actions of persons [on the vessel or] at the facility, to be carried out under the plan to ensure the safety of the [vessel or] facility and to mitigate or prevent the discharge, or the substantial threat of a discharge.” The Contingency Plan does not have a training component, but regulation separately has some requirements related to training and equipment testing. The regulatory text is shown below.

40 CFR 262.16 Conditions for exemption for a small quantity generator that accumulates hazardous waste.¹²²

...

(b)(8) Preparedness and prevention –

(iii) Testing and maintenance of equipment. All communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

...

(b)(9) Emergency procedures. The small quantity generator complies with the following conditions for those areas of the generator facility where hazardous waste is generated and accumulated:

(iii) The small quantity generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies;

¹²¹ This regulatory element only applies to large quantity generators.

¹²² This regulatory element only applies to small quantity generators.

*40 CFR 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.*¹²³

...

(7) Personnel training. (i)(A) Facility personnel must successfully complete a program of classroom instruction, online training (e.g., computer-based or electronic), or on-the-job training that teaches them to perform their duties in a way that ensures compliance with this part. The large quantity generator must ensure that this program includes all the elements described in the document required under paragraph (a)(7)(iv) of this section.

(B) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(C) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(1) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(2) Key parameters for automatic waste feed cut-off systems;

(3) Communications or alarm systems;

(4) Response to fires or explosions;

(5) Response to ground-water contamination incidents; and

(6) Shutdown of operations.

(D) For facility employees that receive emergency response training pursuant to Occupational Safety and Health Administration regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the large quantity generator is not required to provide separate emergency response training pursuant to this section, provided that the overall facility training meets all the conditions of exemption in this section.

(ii) Facility personnel must successfully complete the program required in paragraph (a)(7)(i) of this section within six months after the date of their employment or assignment to the facility, or to a new position at the facility, whichever is later. Employees must not work in unsupervised positions until they have completed the training standards of paragraph (a)(7)(i) of this section.

(iii) Facility personnel must take part in an annual review of the initial training required in paragraph (a)(7)(i) of this section.

*40 CFR 262.253 Testing and maintenance of equipment.*¹²⁴

All communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

¹²³ This regulatory element only applies to large quantity generators.

¹²⁴ This regulatory element only applies to large quantity generators.

A.11.6 Updated Periodically

The RCRA generators regulations have the following provisions relevant to the CWA section 311(j)(5)(D)(v) requirement that response plans shall be updated periodically. The regulatory text is shown below.

*40 CFR 262.263 Amendment of contingency plan.*¹²⁵

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

- (a) Applicable regulations are revised;
- (b) The plan fails in an emergency;
- (c) The generator facility changes—in its design, construction, operation, maintenance, or other circumstances—in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- (d) The list of emergency coordinators changes; or
- (e) The list of emergency equipment changes.

A.11.7 Resubmitted for Approval of Each Significant Change

EPA has identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(vi) requirement that response plans shall be resubmitted for approval of each significant change. Revised plans are not resubmitted for approval but must be sent to local emergency responders. The regulatory text is shown below.

*40 CFR 262.262 Copies of contingency plan.*¹²⁶

A copy of the contingency plan and all revisions to the plan must be maintained at the large quantity generator and—

- (a) The large quantity generator must submit a copy of the contingency plan and all revisions to all local emergency responders (i.e., police departments, fire departments, hospitals and State and local emergency response teams that may be called upon to provide emergency services). This document may also be submitted to the Local Emergency Planning Committee, as appropriate.

...

- (c) Generators must update, if necessary, their quick reference guides, whenever the contingency plan is amended and submit these documents to the local emergency responders identified at paragraph (a) of this section or, as appropriate, the Local Emergency Planning Committee.

A.12 RCRA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF) (40 CFR part 264 & part 265)

A.12.1 Plan for Responding to Worst Case Discharge

The RCRA TSDF Regulation has the following provisions relevant to the CWA section 311(j)(5)(A) requirement for plans for responding, to the maximum extent practicable, to a worst-case discharge and to a substantial threat of such a discharge of a hazardous substance. The regulatory text is shown below.

¹²⁵ This regulatory element only applies to large quantity generators.

¹²⁶ This regulatory element only applies to large quantity generators.

40 CFR 264.51 Purpose and implementation of contingency plan.

- (a) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.
- (b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

40 CFR 264.52 Content of contingency plan.

- (a) The contingency plan must describe the actions facility personnel must take to comply with §§264.51 and 264.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.
- (b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with part 112 of this chapter, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this part. The owner or operator may develop one contingency plan which meets all regulatory requirements. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.
- (c) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to §264.37.
- (d) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §264.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the Regional Administrator at the time of certification, rather than at the time of permit application.
- (e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.
- (f) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

40 CFR 265.51 Purpose and implementation of contingency plan.

- (a) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

40 CFR 265.52 Content of contingency plan.

(a) The contingency plan must describe the actions facility personnel must take to comply with §§265.51 and 265.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with Part 112 of this chapter, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this Part. The owner or operator may develop one contingency plan which meets all regulatory requirements. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.

(c) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to §265.37.

(d) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §265.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(f) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

A.12.2 Consistent with NCP and ACP

The RCRA TSDF Regulation has the following provisions relevant to the CWA section 311(j)(5)(D)(i) requirement that response plans shall be consistent with the requirements of the NCP and ACPs. The regulatory text is shown below.

40 CFR 264.52 Content of contingency plan.

...

(b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with part 112 of this chapter, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this part. The owner or operator may develop one contingency plan which meets all regulatory requirements. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to

non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.

40 CFR 265.52 Content of contingency plan.

...

(b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with Part 112 of this chapter, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this Part. The owner or operator may develop one contingency plan which meets all regulatory requirements. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.

A.12.3 Identifies the Qualified Individual and Requires Communications

The RCRA TSDF Regulation has the following provisions relevant to the CWA section 311(j)(5)(D)(ii) requirement that response plans shall identify the qualified individual having full authority to implement removal actions, and require immediate communications between that individual and the appropriate federal official and the persons providing personnel and equipment. The regulatory text is shown below.

40 CFR 264.52 Content of contingency plan.

...

(d) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §264.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the Regional Administrator at the time of certification, rather than at the time of permit application.

40 CFR 264.55 Emergency coordinator.

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

[Comment: The emergency coordinator's responsibilities are more fully spelled out in §264.56. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.]

40 CFR 264.56 Emergency procedures.

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(2) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, if any; and

(vi) The possible hazards to human health, or the environment, outside the facility.

40 CFR 265.52 Content of contingency plan.

...

(d) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §265.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

40 CFR 265.55 Emergency coordinator.

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

40 CFR 265.56 Emergency procedures.

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(2) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

A.12.4 Identify and Ensure Removal and Mitigation Personnel and Equipment

EPA has identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iii) requirement that response plans “. . . shall identify, and ensure by contract or other means [approved by the President] the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge.” The regulatory text is shown below.

40 CFR 264.52 Content of contingency plan.

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

40 CFR 264.196 Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

- (a) Cessation of use; prevent flow or addition of wastes. The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.
- (b) Removal of waste from tank system or secondary containment system. (1) If the release was from the tank system, the owner/operator must, within 24 hours after detection of the leak or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.
(2) If the material released was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.
- (c) Containment of visible releases to the environment. The owner/operator must immediately conduct a visual inspection of the release and, based upon that inspection:
 - (1) Prevent further migration of the leak or spill to soils or surface water; and
 - (2) Remove, and properly dispose of, any visible contamination of the soil or surface water.

40 CFR 264.223 Response actions.

- (a) The owner or operator of surface impoundment units subject to §264.221 (c) or (d) must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.
- (b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
 - (1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;

- (2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
 - (3) Determine to the extent practicable the location, size, and cause of any leak;
 - (4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
 - (5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
 - (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b) (3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.
- (c) To make the leak and/or remediation determinations in paragraphs (b) (3), (4), and (5) of this section, the owner or operator must:
- (1)(i) Assess the source of liquids and amounts of liquids by source,
 - (ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
 - (iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

40 CFR 264.227 Emergency repairs; contingency plans.

- (a) A surface impoundment must be removed from service in accordance with paragraph (b) of this section when:
- (1) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment; or
 - (2) The dike leaks.
- (b) When a surface impoundment must be removed from service as required by paragraph (a) of this section, the owner or operator must:
- (1) Immediately shut off the flow or stop the addition of wastes into the impoundment;
 - (2) Immediately contain any surface leakage which has occurred or is occurring;
 - (3) Immediately stop the leak;
 - (4) Take any other necessary steps to stop or prevent catastrophic failure;
 - (5) If a leak cannot be stopped by any other means, empty the impoundment; and
 - (6) Notify the Regional Administrator of the problem in writing within seven days after detecting the problem.
- (c) As part of the contingency plan required in subpart D of this part, the owner or operator must specify a procedure for complying with the requirements of paragraph (b) of this section.
- (d) No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

- (1) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with §264.226(c).
- (2) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:
 - (i) For any existing portion of the impoundment, a liner must be installed in compliance with §264.221(a); and
 - (ii) For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.
- (e) A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired must be closed in accordance with the provisions of §264.228

40 CFR 264.253 Response actions.

- (a) The owner or operator of waste pile units subject to §264.251 (c) or (d) must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.
- (b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
 - (1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;
 - (2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
 - (3) Determine to the extent practicable the location, size, and cause of any leak;
 - (4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
 - (5) Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and
 - (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b) (3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.
- (c) To make the leak and/or remediation determinations in paragraphs (b) (3), (4), and (5) of this section, the owner or operator must:
 - (1)(i) Assess the source of liquids and amounts of liquids by source,
 - (ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
 - (iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

40 CFR 264.304 Response actions.

- (a) The owner or operator of landfill units subject to §264.301(c) or (d) must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the

action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

- (1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;
- (2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
- (3) Determine to the extent practicable the location, size, and cause of any leak;
- (4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
- (5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
- (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:

- (1)(i) Assess the source of liquids and amounts of liquids by source,
 - (ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
 - (iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

40 CFR 264.602 Monitoring, analysis, inspection, response, reporting, and corrective action.

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with §§264.601, 264.15, 264.33, 264.75, 264.76, 264.77, and 264.101 as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

40 CFR 265.52 Content of contingency plan.

...

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

40 CFR 265.196 Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

- (a) Cessation of use; prevent flow or addition of wastes. The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.
- (b) Removal of waste from tank system or secondary containment system. (1) If the release was from the tank system, the owner or operator must, within 24 hours after detection of the leak or, if the owner or operator demonstrates that that is not possible, at the earliest practicable time remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.
- (2) If the release was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.
- (c) Containment of visible releases to the environment. The owner or operator must immediately conduct a visual inspection of the release and, based upon that inspection:
 - (1) Prevent further migration of the leak or spill to soils or surface water; and
 - (2) Remove, and properly dispose of, any visible contamination of the soil or surface water.

40 CFR 265.224 Response actions.

- (a) The owner or operator of surface impoundment units subject to §265.221(a) must develop and keep on site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.
- (b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
 - (1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;
 - (2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
 - (3) Determine to the extent practicable the location, size, and cause of any leak;
 - (4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
 - (5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
 - (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.
- (c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:

- (1)(i) Assess the source of liquids and amounts of liquids by source,
 - (ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
 - (iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

40 CFR 265.259 Response actions.

- (a) The owner or operator of waste pile units subject to §265.254 must develop and keep on-site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.
- (b) If the flow rate into the leak determination system exceeds the action leakage rate for any sump, the owner or operator must:
- (1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;
 - (2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
 - (3) Determine to the extent practicable the location, size, and cause of any leak;
 - (4) Determine whether waste receipts should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
 - (5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
 - (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.
- (c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:
- (1)(i) Assess the source of liquids and amounts of liquids by source,
 - (ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
 - (iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

40 CFR 265.303 Response actions.

- (a) The owner or operator of landfill units subject to §265.301(a) must develop and keep on site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

- (1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;
 - (2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
 - (3) Determine to the extent practicable the location, size, and cause of any leak;
 - (4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
 - (5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
 - (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.
- (c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:
- (1)(i) Assess the source of liquids and amounts of liquids by source,
 - (ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
 - (iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

A.12.5 Describes Training, Equipment Testing, Periodic Unannounced Drills, and Response Actions

EPA has identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(iv) requirement that response plans “. . . shall describe the training, equipment testing, periodic unannounced drills, and response actions of persons [on the vessel or] at the facility, to be carried out under the plan to ensure the safety of the [vessel or] facility and to mitigate or prevent the discharge, or the substantial threat of a discharge.” The Contingency Plan does not have a training component, but the regulation separately has some requirements related to training and equipment testing. The regulatory text is shown below.

40 CFR 264.15 General inspection requirements.

- (a) The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing—or may lead to—(1) release of hazardous waste constituents to the environment or (2) a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.
- (b)(1) The owner or operator must develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(2) He must keep this schedule at the facility.

(3) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(4) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, and 264.1083 through 264.1089, where applicable. Part 270 of this chapter requires the inspection schedule to be submitted with part B of the permit application. EPA will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, EPA may modify or amend the schedule as may be necessary.

(5) Performance Track member facilities that choose to reduce their inspection frequency must:

(i) Submit a request for a Class I permit modification with prior approval to the Director. The modification request must identify the facility as a member of the National Environmental Performance Track Program and identify the management units for reduced inspections and the proposed frequency of inspections. The modification request must also specify, in writing, that the reduced inspection frequency will apply for as long as the facility is a Performance Track member facility, and that within seven calendar days of ceasing to be a Performance Track member, the facility will revert to the non-Performance Track inspection frequency. Inspections must be conducted at least once each month.

(ii) Within 60 days, the Director will notify the Performance Track member facility, in writing, if the request is approved, denied, or if an extension to the 60-day deadline is needed. This notice must be placed in the facility's operating record. The Performance Track member facility should consider the application approved if the Director does not: deny the application; or notify the Performance Track member facility of an extension to the 60-day deadline. In these situations, the Performance Track member facility must adhere to the revised inspection schedule outlined in its request for a Class 1 permit modification and keep a copy of the application in the facility's operating record.

(iii) Any Performance Track member facility that discontinues their membership or is terminated from the program must immediately notify the Director of their change in status. The facility must place in its operating record a dated copy of this notification and revert back to the non-Performance Track inspection frequencies within seven calendar days.

(c) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

(d) The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

40 CFR 264.16 Personnel training.

(a)(1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. The owner or operator must ensure that this program includes all the elements described in the document required under paragraph (d)(3) of this section.

(2) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(3) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(ii) Key parameters for automatic waste feed cut-off systems;

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

(v) Response to ground-water contamination incidents; and

(vi) Shutdown of operations.

(4) For facility employees that receive emergency response training pursuant to OSHA regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant to this section, provided that the overall facility training meets all the requirements of this section.

(b) Facility personnel must successfully complete the program required in paragraph (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of paragraph (a) of this section.

(c) Facility personnel must take part in an annual review of the initial training required in paragraph (a) of this section.

(d) The owner or operator must maintain the following documents and records at the facility:

(1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(2) A written job description for each position listed under paragraph (d)(1) of this section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (d)(1) of this section;

(4) Records that document that the training or job experience required under paragraphs (a), (b), and (c) of this section has been given to, and completed by, facility personnel.

(e) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

40 CFR 264.33 Testing and maintenance of equipment.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

40 CFR 264.34 Access to communications or alarm system.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the Regional Administrator has ruled that such a device is not required under §264.32.

(b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless the Regional Administrator has ruled that such a device is not required under §264.32.

40 CFR 265.15 General inspection requirements.

(a) The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing—or may lead to: (1) Release of hazardous waste constituents to the environment or (2) a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(b)(1) The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(2) He must keep this schedule at the facility.

(3) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(4) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§265.174, 265.193, 265.195, 265.226, 265.260, 265.278, 265.304, 265.347, 265.377, 265.403, 265.1033, 265.1052, 265.1053, 265.1058, and 265.1084 through 265.1090, where applicable.

(c) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

(d) The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

40 CFR 265.16 Personnel training.

(a)(1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. The owner or operator must ensure that this program includes all the elements described in the document required under paragraph (d)(3) of this section.

(2) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(3) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(ii) Key parameters for automatic waste feed cut-off systems;

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

(v) Response to ground-water contamination incidents; and

(vi) Shutdown of operations.

(4) For facility employees that receive emergency response training pursuant to OSHA regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant to this section, provided that the overall facility training meets all the requirements of this section.

(b) Facility personnel must successfully complete the program required in paragraph (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of paragraph (a) of this section.

(c) Facility personnel must take part in an annual review of the initial training required in paragraph (a) of this section.

(d) The owner or operator must maintain the following documents and records at the facility:

(1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(2) A written job description for each position listed under paragraph (d)(1) of this Section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (d)(1) of this section;

(4) Records that document that the training or job experience required under paragraphs (a), (b), and (c) of this section has been given to, and completed by, facility personnel.

(e) Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

40 CFR 265.31 Maintenance and operation of facility.

Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

40 CFR 265.33 Testing and maintenance of equipment.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

40 CFR 265.34 Access to communications or alarm system.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under §265.32.

(b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under §265.32.

A.12.6 Updated Periodically

The TSDF Regulation has the following provisions relevant to the CWA section 311(j)(5)(D)(v) requirement that response plans shall be updated periodically. The regulatory text is shown below.

40 CFR 264.54 Amendment of contingency plan.

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

- (a) The facility permit is revised;
- (b) The plan fails in an emergency;
- (c) The facility changes—in its design, construction, operation, maintenance, or other circumstances—in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- (d) The list of emergency coordinators changes; or
- (e) The list of emergency equipment changes.

40 CFR 265.54 Amendment of contingency plan.

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

- (a) Applicable regulations are revised;
- (b) The plan fails in an emergency;
- (c) The facility changes—in its design, construction, operation, maintenance, or other circumstances—in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- (d) The list of emergency coordinators changes; or
- (e) The list of emergency equipment changes.

A.12.7 Resubmitted for Approval of Each Significant Change

EPA has identified provisions in part 264 that are relevant and requirements in part 265 that are partially relevant to the CWA section 311(j)(5)(D)(vi) requirement that response plans shall be resubmitted for

approval of each significant change. Revised plans are not resubmitted for approval but must be sent to local emergency responders. The regulatory text is shown below.

40 CFR 264.53 Copies of contingency plan.

A copy of the contingency plan and all revisions to the plan must be:

- (a) Maintained at the facility; and
- (b) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

40 CFR 265.53 Copies of contingency plan.

A copy of the contingency plan and all revisions to the plan must be:

- (a) Maintained at the facility; and
- (b) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

**A.13 Toxic Substance Control Act (TSCA): Polychlorinated Biphenyls (PCBs)
Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40
CFR part 761)**

A.13.1 Consistent with NCP and ACP

EPA identified provisions that are partially relevant to the CWA section 311(j)(5)(D)(i) requirement that response plans shall be consistent with the requirements of the NCP and ACPs. There is no response plan requirement but reporting requirements reference the NCP. The regulatory text is shown below.

40 CFR 761.125 Requirements for PCB spill cleanup.

...

(1) Reporting requirements. The reporting in paragraphs (a)(1) (i) through (iv) of this section is required in addition to applicable reporting requirements under the Clean Water Act (CWA) or the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). For example, under the National Contingency Plan all spills involving 1 pound or more by weight of PCBs must currently be reported to the National Response Center (1-800-424-8802). The requirements in paragraphs (a)(1) (i) through (iv) of this section are designed to be consistent with existing reporting requirements to the extent possible so as to minimize reporting burdens on governments as well as the regulated community.