

Oil Storage and Handling at NIST-Boulder

NIST S 7301.09

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1. PURPOSE

The purpose of this suborder is to establish the requirements and associated roles and responsibilities regarding the handling of petroleum products and prevention, control and reporting of petroleum spills at the NIST Boulder and WWV/WWVB facilities.

2. BACKGROUND

- a. The Department of Commerce (DoC) Boulder Laboratories is comprised of NIST, the National Oceanic and Atmospheric Administration (NOAA), the National Telecommunications and Information Administration (NTIA), and the General Services Administration (GSA).

- (1) The NIST Boulder Facility and NIST WWV/WWVB facilities each operate under separate spill prevention control and countermeasures (SPCC) plans that identify requirements and responsibilities for prevention and control of spills from petroleum storage containers with a capacity greater than 55 gallons as required under 40 CFR 112. This suborder applies to NIST personnel and tenants in NIST-owned buildings.

- (2) The GSA/NOAA area-of-responsibility (AOR) at the DoC Boulder Labs has a separate SPCC plan and is not covered by this suborder.

- (3) The NIST WWVH facility located near Kekaha (Kauai), Hawaii is not included in the scope of this suborder since it is covered under a SPCC Plan produced by the Pacific Missile Range Facility Barking Sands (U.S. Navy), on which the WWVH facility is located.

- (4) This suborder does not apply to NIST personnel working on the University of Colorado campus since the university has its own SPCC plan.

¹ For revision history, see Appendix A.

(5) Reporting of releases of chemicals other than petroleum products and all releases to stormwater, surface water or wastewater is covered under the NIST Boulder Accidental Hazardous Materials Release Reporting Procedure (AHMRRP).

b. NIST P 7300.00 articulates NIST's commitment to making prevention, control and reporting of chemical and petroleum spills and releases in compliance with applicable regulations and permits an integral core value and vital part of the NIST culture by, in part:

(1) Complying with applicable laws, regulations, policies, permit terms and other promulgated safety and health requirements; and

(2) Abating deficiencies and taking actions to prevent incidents from occurring.

c. NIST Boulder and WWV/WWVB must meet the requirements of 40 CFR Part 112.

d. NIST Boulder must meet the requirements of:

(1) Industrial Discharge Permit, CIU-2021-4, A9962C2618_NIST;

(2) Municipal Separate Storm Sewer System COR042002; and

(3) The applicable Spill Prevention Control and Countermeasures (SPCC) Plan.

e. NIST WWV/WWVB must meet the requirements of its Spill Prevention Control and Countermeasures (SPCC) Plan.

3. APPLICABILITY

a. This suborder applies to the management of petroleum storage containers including storage tanks, oil-filled equipment, and drums with a capacity of 55 gallons or greater at the NIST Boulder and WWV/WWVB facilities.

b. Reporting and cleanup of spills or releases of chemicals other than petroleum products and small quantities of petroleum products from containers not regulated under 40 CFR 112 (containers with a capacity less than 55 gallons) is addressed under NIST Suborder 7101.60, *Chemical Management*.

4. REFERENCES

a. 40 CFR 112, [*Oil Pollution Prevention*](#)

- b. 6 CCR 1007-3, 264.56, [Contingency Plan and Emergency Procedures](#)
- c. 6 CCR 1007-3, Part 279, [Standards for the Management of Used Oil](#)
- d. 8 CCR 1507-25, [Rules and Regulations Concerning Minimum Standards for the Operation of Commercial Vehicles](#)
- e. BRC 11-3, [Industrial and Prohibited Discharges](#)
- f. COR042002, *Municipal Separate Storm Sewer System (MS4) Permit*
- g. 2017-2, *Industrial Discharge Permit*
- h. *NIST Boulder Spill Notification Policy*
- i. *Spill Prevention, Control and Countermeasures Plan, NIST Boulder*
- j. *Spill Prevention, Control and Countermeasures Plan Amendment, NIST Boulder*
- k. *Spill Prevention, Control and Countermeasures Plan, NIST WWV/WWVB*
- l. *Steel Tank Institute (STI), Specifications SP001, SP031*

5. APPLICABLE NIST OCCUPATIONAL SAFETY AND HEALTH SUBORDERS

- a. NIST S 7101.24: *Incident Reporting and Investigation*
- b. NIST S 7101.26: *Workplace Inspection Program*
- c. NIST S 7101.59: *Chemical Management*
- d. NIST O 7301.00: *Environmental Management*
- e. NIST S 7301.01: *Environmental Management System*
- f. NIST S 7301.07: *Chemical Waste Accumulation and Disposal at NIST Boulder*
- g. NIST S 7301.11: *Stormwater Management at NIST Boulder*
- h. NIST S 7301.13: *Wastewater Management at NIST Boulder*

6. REQUIREMENTS

a. General Requirements

(1) Aboveground oil storage containers and tanks with a capacity of 55 gallons or more:

(a) Shall be visually inspected on a monthly basis to ensure the integrity of the container(s), and the inspections shall be documented;

(b) Shall be equipped with secondary containment (*e.g.*, double walled containers, containment berms) with a capacity no less than 110% of the capacity of the largest container if exposed to precipitation or 100% of the capacity of the largest container if not exposed to precipitation; and

(c) Shall be inventoried and included in the NIST Boulder or WWV/WWVB Spill Prevention Control and Countermeasure (SPCC) Plans.

(2) Oil filled equipment, OFE, (*e.g.*, electric transformers) with a capacity of 55 gallons or more:

(a) Shall be inspected at a frequency specified by the equipment maintenance specifications;

(b) Shall be equipped with either secondary containment sufficient to prevent a release from reaching wastewater, stormwater or surface water or written spill procedures for containing a spill or discharge; and

(c) Shall be inventoried and included in the NIST Boulder and WWV/WWVB SPCC Plans.

b. Site Security

The following site security measures shall be met at each oil handling and storage area:

(1) Access to starter controls on oil pumps shall be secured;

(2) Master flow and drain valves shall be secured; and

(3) Adequate lighting shall be present to deter acts of vandalism and assist in the discovery of oil discharges.

c. Equipment Specific Requirements:

- (1) Requirements identified in the SPCC Plans and amendments in Appendices B, C and D shall be followed.

d. Oil Spill Response Procedures

Any person observing a spill of a petroleum product from a tank, drum or oil-filled equipment shall take the following actions.

- (1) Ensure that you, and all other personnel in the area, are safe (clear the spill area);

- (2) Only if safe to do so, remove any ignition sources;

- (3) Provide notification of the spill:

- (a) Call extension 7777 to report the oil spill. From a non-system phone, call 303-497-7777

- (b) Notify the Boulder Fire Department by calling 911 if any of the conditions listed below apply:

- i. Fire

- ii. Ignition source cannot be safely removed

- iii. A tank has ruptured

- iv. Spill enters the storm sewer, sanitary sewer, creek or irrigation ditch

- v. Spill is too large to mitigate with available spill control materials

- (c) Contact the Boulder Safety, Health, and Environment Division (x5375, option 3).

- (4) Provide information requested by the emergency responders and follow their guidance;

- (5) Attempt to contain the spill only if the following criteria are met:

- (a) Personnel know the source of the spill and are familiar with the hazards;

(b) Personnel can safely remove any ignition sources;

(c) The spill area is sufficiently ventilated; and

(d) Personnel have the training, personal protective equipment and supplies necessary to contain the spill.

(6) When containing a spill, the first priority is to prevent the oil from flowing into a storm drain, stream, irrigation ditch or sanitary sewer;

(7) As applicable, contain spills on blacktop or concrete and prevent spills from flowing into permeable surfaces; and

(8) Complete an incident report in accordance with NIST S 7101.24: *Incident Reporting and Investigation*.

e. Spill Reporting

(1) All releases shall be reported in accordance with the SPCC Plan applicable to the facility on which the spill occurred;

(2) Releases of quantities less than those specified in the SPCC Plan shall be reported in compliance with the NIST Boulder Spill Notification Policy;

(3) Releases of hazardous materials or incident presenting a risk of a release during transport shall be reported to the nearest law enforcement agency as required under 8 CCR 1507-25;

(4) Releases of petroleum products and chemicals shall be reported in accordance with the requirements of the NIST Boulder Spill Notification Policy, including:

(a) Notification of supervisor;

(b) Notification of DoC Police and ESO Emergency Manager;

(c) Notification of Boulder Fire-Rescue (911) in the event of:

i. A release that cannot be controlled by personnel;

ii. A release entering surface water/stormwater/storm sewer/sanitary sewer; or

- 237 iii. A ruptured tank;
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239 (d) Notification of BSHED;
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241 (e) Notification of Division Chief; and
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243 (f) Notification of DoC Boulder Labs Board of Directors.
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245 (5) Make verbal reports of releases to CDPHE, CDLE and the City of Boulder, Water
246 Quality and Environmental Services (dependent upon release pathway) within 24 hours
247 after discovery of the release; and
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249 (6) Submit written reports to the agencies identified in 6.e(5) within five business days.
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251 f. Inspections by NIST personnel or contractors
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253 (1) Tanks shall be inspected in accordance with the requirements of STI SP001;
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255 (2) Leaks, malfunctions, damage or other noncompliant conditions must be reported to the
256 chief of the division owning the tank;
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258 (3) Repairs shall be made in accordance with the requirements of STI SP031; and
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260 (4) Releases must be reported to DoC Police immediately.
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262 g. Inspections by regulatory agencies
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264 (1) The U.S. Environmental Protection Agency (EPA), Colorado Department of Public
265 Health and Environment (CDPHE), Colorado Department of Labor and Employment
266 (CDLE), City of Boulder Water Quality and Environmental Services (WQES) have the
267 authority to conduct announced or unannounced inspections of federal workplaces and
268 operations in order to verify regulatory compliance. All NIST personnel will cooperate
269 fully during any such inspection. The Chief of BSHED shall be notified whenever
270 CDPHE and/or EPA inspectors request access to NIST facilities and will assign an OSHE
271 representative to coordinate the inspection process; coordination requirements include:
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273 (a) Notifying the affected OU(s) of the inspection when permitted by the agency
274 performing the inspection;
275

(b) Accompanying² the representative(s) of the inspecting agency while on-site; and

(c) Documenting the observations of the inspectors, including photographing areas photographed by the representative(s) of the agency performing the inspection.

(2) OUs, in coordination with the Boulder Laboratory Board of Directors and BSHED Chief, will abate any negative findings identified during the inspection in accordance with CDLE, CDPHE and/or EPA instructions and the requirements of this suborder; and

(3) The NIST Management Resources, Boulder Business Operations Group Leader and BSHED Chief, in coordination with affected OUs, will take the lead on all inspection-related correspondence with CDLE, CDPHE and/or EPA.

h. Training.

(1) NIST Boulder and WWV/WWVB personnel identified as having duties related to petroleum storage tanks, oil-filled equipment or other containers of petroleum products with a capacity of 55 gallons or greater shall complete:

(a) Spill Prevention Control and Countermeasures training specific to the facility at which the person performs their duties;

i. NIST S 7301.09: SPCC Training for Division 184;

ii. NIST S 7301.09: Boulder Spill Prevention, Control and Countermeasures Training for Division 194

iii. NIST S 7301.09: Spill Prevention, Control and Countermeasures Training for Division 647; or

iv. NIST S 7301.09: Spill Prevention, Control and Countermeasures Training for Division 688 (Boulder and WWV/WWVB);

(b) The training specified in OSH suborders, or equivalent training specified by the OU, applicable to the duties assigned to them; and

(c) Retraining identified by the Official First-Level Supervisor whenever inadequacies in the employee's knowledge indicate the need for retraining.

² For workplaces outside of NIST Boulder, OSHE will coordinate with the responsible OU to ensure an OU representative performs j(1)(b) and j(1)(c)

i. Evaluation of Compliance

The NIST Boulder Oil Storage and Handling program manager shall conduct a compliance audit of this program on an annual basis.

j. Records

(1) Reports of releases shall be kept on file for no less than three years;

(2) Releases shall be tracked in a spreadsheet or database; and

(3) Records of inspections of petroleum storage tanks and oil-filled equipment shall be maintained in accordance with the applicable SPCC Plan.

7. DEFINITIONS

Definitions common to all NIST Environmental suborders can be found in NIST O 7301-00.

The definitions specific to this suborder are as follows:

- a. Aboveground Storage Tanks (ASTs) – Any container or a combination of containers, including structures and appurtenances connected to them, constructed of non-earthen materials, used to contain or dispense fuel products or oil having at least ninety percent of the volume of the container, including connected pipes, above the surface of the ground, if not permanently closed. This includes tanks located indoors or in vaults below the surface of the ground.
- b. Discharge – Any spilling, leaking, pumping, pouring, emitting, emptying, dumping, addition of, introduction of any pollutant into waters of the state, or the placing of any pollutant in a location where it is likely to pollute.
- c. Occupant Emergency Plan – A plan that describes the actions that NIST employees and associates should take to ensure their safety if a fire or other emergency situation occurs.
- d. Oil – Any kind of oil, in any form, including petroleum, fuel oil, gasoline, diesel fuel, synthetic oils, mineral oils, or oil refuse; fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels.
- e. Oil-filled Equipment – Equipment, including hydraulic equipment and oil-filled transformers, containing 55 or more gallons of petroleum products except for storage tanks, as defined in Section 7.a.

- f. Oil-Handling Personnel - Employees, including associates, engaged in the maintenance of regulated oil storage containers (e.g. drums, tanks, oil filled operational equipment), oil transfer operations, inspection of oil storage containers, and emergency response.
- g. Petroleum Products – Gasoline, diesel, heating oil, grease, lubricating oil, hydraulic oil/fluid, pump oil and similar products refined from crude oil.
- h. Release – Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant except vehicle emissions, application of fertilizer, and permitted releases.
- i. Secondary Containment – A means to contain a spill from an oil storage container. Secondary containment may consist of drain covers over floor drains, berms surrounding storage containers, double-walled tanks or other means to contain the release of a container's contents in the event of a failure.
- j. Spill – Any release of oil outside of its intended container.
- k. Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) – The document required by 40 CFR Part 112 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge.
- l. Used Oil – Engine, hydraulic, lubricating or pump oils that are no longer wanted or have been rendered unusable following use.
- m. WWV/WWVB – NIST broadcast facility near Fort Collins, Colorado

8. ACRONYMS

Acronyms common to all NIST Environmental suborders can be found in of NIST O 7301.00. The acronyms specific to this suborder are as follows:

- a. AHMRRP – NIST Boulder Accidental Hazardous Material Release Reporting Procedure
- b. AMD – NIST Acquisitions Management Division
- c. AST – Aboveground Storage Tank

- d. BRC – Boulder Revised Code
- e. BSHED – NIST Boulder Safety, Health, and Environment Division
- f. CCR – Code of Colorado Regulations
- g. CDLE – Colorado Department of Labor and Employment
- h. CDPHE – Colorado Department of Public Health and Environment
- i. CFMO – NIST Chief Facilities Management Officer
- j. CFR – Code of Federal Regulations
- k. CSO – Chief Safety Officer
- l. DoC – United States Department of Commerce
- m. EPA – United States Environmental Protection Agency
- n. ESC – Executive Safety Committee
- o. GSA – General Services Administration
- p. NIST – National Institute of Standards and Technology
- q. NOAA – National Oceanic and Atmospheric Administration
- r. NTIA – National Telecommunications and Information Administration
- s. OFE – Oil-Filled Equipment
- t. OFPM – NIST Office of Facilities and Property Management
- u. OSHE – NIST Office of Safety, Health, and Environment
- v. OU – Organizational Unit
- w. RCRA – Resource Conservation and Recovery Act

x. SPCC – Spill Prevention Control and Countermeasures

y. STI – Steel Tank Institute

9. RESPONSIBILITIES

Roles and responsibilities common to all NIST Environmental suborders can be found in Section 8 of NIST O 7301.00. The roles and responsibilities specific to this suborder are as follows:

a. Chief Safety Officer

As NIST's designated Environmental Manager, the CSO is responsible for overseeing NIST's efforts in complying with the requirements identified in this suborder.

b. OU Directors

(1) Establishing implementing policies and procedures, as needed, to meet the requirements of this suborder;

(2) Ensuring subordinate managers have the authority, resources, and training needed to implement OU-established policies and procedures; and

(3) Using OU funds to pay any civil penalties identified in regulatory inspections and resulting from regulatory violations in their respective OUs.

c. Division Chiefs and Group Leaders

(1) Ensure that adequate spill control materials are procured for all division-owned tanks and OFE;

(2) Ensure that all division-owned tanks and oil-filled equipment are inspected in compliance with the applicable industry standards and SPCC Plan for the facility on which the tank is located;

(3) Ensure that work orders for inspection and maintenance of any division-owned tanks are submitted with adequate time to ensure that inspections and maintenance are performed in a timely manner;

(4) Ensure that inspection records for all division-owned tanks and OFE are maintained in compliance with the SPCC Plan;

(5) Ensure that division personnel are trained to operate petroleum storage tanks and oil-filled equipment in compliance with the SPCC Plan;

(6) Ensure that any release of a petroleum product is reported to BSHED;

(7) Ensure that division personnel are trained in requirements for reporting releases;

(8) Make available to inspectors all relevant information which pertains to the inspection and operation of petroleum storage tanks;

(9) Ensure that corrective actions are made to address an inspection finding relevant to tanks or OFE owned by the division; and

(10) Ensure that deficiencies or violations resulting from regulatory inspections of areas operated by that division are addressed in the timeframe required by the regulatory agency.

d. Workplace Supervisors

(1) Ensure that regulatory inspectors are provided access to areas under their supervision;

(2) Upon receiving monthly or annual inspection reports or testing reports, ensure that corrective actions are performed in the timeframe specified in the inspection report or in accordance with the SPCC Plan and the applicable STI standard;

(3) Ensure that group leader and division chief are informed of conditions out of compliance with the SPCC Plan.

e. All Employees and associates

(1) Ensure that observed petroleum releases are reported in compliance with the AHMRRP and SPCC Plan for the site on which the release occurred; and

(2) Operate petroleum storage tanks and oil-filled equipment in accordance with the SPCC Plan and the manufacturer's instructions;

f. BSHED Oil Storage and Handling at NIST Boulder Program Manager

(1) Act as the NIST point of contact with regulatory agencies for oil storage, spill prevention and control issues;

- (2) Maintain overall compliance with this suborder and applicable federal, state, and local regulations;
- (3) Perform an internal compliance evaluation once per calendar year at a minimum to verify ongoing compliance with this Suborder;
- (4) Communicate the regulatory requirements of this suborder to affected personnel;
- (5) Maintain this suborder and keep it up to date;
- (6) Review inspection reports;
- (7) Maintain the following records:
 - (a) Oil spill reports identified in Section 6.e
 - (b) Regulatory correspondence
 - (c) Compliance evaluation reports
 - (d) Required training records
 - (e) SPCC Plan
- (8) During normal working hours, provide emergency response support to the DoC Police and ESO Emergency Manager, including:
 - (a) Assisting in containing and cleaning up oil spills
 - (b) Disposing of all oil spill cleanup material (*e.g.*, absorbent pads, granular absorbent, recovered liquids)
 - (c) Providing regulatory agency notifications as required
 - (d) Assisting AMD with procuring contractor services for emergency cleanup actions
- (9) Coordinate or conduct oil spill response training for applicable employees and associates at NIST Boulder and WWV/WWVB;

(10) Report releases of petroleum products to the Colorado Department of Public Health and Environment, Colorado Department of Labor and Employment Division of Oil and Public Safety and/or City of Boulder Water Quality and Environmental Services as required under the Industrial Discharge Permit (wastewater), Municipal Separate Storm Sewer System (MS4) Permit (stormwater) or SPCC Plan.

(11) Serve as the contracting officer representative (COR) or technical point-of-contact for the following contracts:

(a) Development or revision of SPCC Plans for NIST Boulder and WWV/WWVB;

(b) Hazardous waste management services, which includes some spill response services; and

(c) Emergency mitigation and/or remediation of spills of chemicals or petroleum products.

(12) Provide support to NIST Boulder personnel, including identifying appropriate spill control materials

(13) Verify compliance with 6 CCR 1007-3, Part 279 if used oil containers are observed during periodic inspections of Hazardous Waste SAAs as required under *NIST S 7301.07 Chemical Waste Accumulation and Disposal at NIST Boulder*;

(14) Use reports from stormwater inspections to identify any spills or releases;

(15) Prepare and submit an annual summary report to the BSHED Chief; and

(16) Compile, analyze, and report inspection data periodically at the direction of the CSO.

g. NIST Boulder, Emergency Services Office, Emergency Manager

(1) Ensure that Occupant Emergency Plan is followed during response to any emergency; and

(2) Inform the DoC Boulder Labs Boulder Board of Directors of the emergency and the nature of the response.

h. Department of Commerce Police

- (1) Secure areas around reported releases;
- (2) Notify Emergency Manager of release;
- (3) Serve as incident commander until relieved; and
- (4) Assist emergency responders from outside agencies (Boulder-Fire Rescue) with accessing the DoC Boulder labs facility and locating the release.

i. NIST Chief Facilities Management Officer (CFMO)

- (1) Ensure all tanks and OFE owned by OFPM are inspected and maintained in compliance with the SPCC Plan;
- (2) Ensure leaks from ASTs and/or OFE owned by OFPM are reported to BSHED and information required for reporting to regulatory agencies is provided;
- (3) Communicate any proposed project that may result in adding a permanent petroleum storage tank or oil-filled equipment to BSHED;
- (4) Ensuring secondary containment equal to no less than 110% of the storage capacity of the tank if exposed to precipitation or 100% of the storage capacity of the tank if not exposed to precipitation is installed for all new petroleum storage tanks or container storage areas; and
- (5) Ensure specifications for operation and maintenance of new tanks or OFE are turned over to the division owning the tank or equipment.

10. AUTHORITIES

Authorities common to all NIST Environmental Compliance and Management suborders can be found in NIST O 7301.00. The authorities specific to this suborder are as follows:

a. Inspectors and inspection team members are authorized to:

- (1) Enter without delay, and at reasonable times, any building, installation, facility, construction site, or other area, workplace, or environment where tanks or OFE are located. Escort may be required into areas with significant hazards present.

(2) Consult with a reasonable number of employees during inspection.

(3) Question privately any worker, supervisor, or manager in charge of the workspace.

(4) Deny the right of accompaniment to any person whose participation interferes with a fair and orderly inspection.

b. Personnel, emergency responders or contractors responding to a reported spill are authorized to:

(1) Enter without delay any building, installation, facility, construction site, or other area, workplace, or environment in which a release has occurred or access is required to mitigate a release in a nearby area.

11. DIRECTIVE OWNER

Chief Safety Officer

12. APPENDICES

a. Revision History

Appendix A. Revision History

Version #	Approval Date	Effective Date	Brief Description of Change
1	06/08/2021	06/08/2021	Initial document
2	01/03/2022	01/03/2022	Administrative changes. Removed embedded SPCC Plans since documents are available on the program web page. Added new wastewater permit number.
3	09/08/2022	09/30/2023	All OFPM responsibilities consolidated under CFMO. Secondary containment requirements clarified. References to SNP changed to AHMRRP. Updated footer. NOTE: Effective date was originally TBD due to the COVID-19 pandemic. It was updated on 4/17/23.