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Analysis of Loading and Unloading Rack Requirement

(40 CFR 112.7(h))

Regulation & Policy Development Division

Office of Emergency Management

U.S. Environmental Protection Agency

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1. Introduction

Under the current SPCC rule, regulated facilities (excluding offshore facilities) where “tank car and tank truck loading/unloading rack[s]” are located are subject to specific secondary containment requirements in §112.7(h). These specific “sized” secondary containment requirements are more stringent than the general secondary containment requirements in §112.7(c). Although the term “rack” is referred to in the title of the provision, the rule text refers to “loading/unloading area” – making the application of the rule ambiguous. Accordingly, the Environmental Protection Agency (EPA or the Agency) is currently evaluating options for a clear definition of “loading/unloading rack” in an upcoming SPCC proposed rulemaking.

In support of the Agency’s efforts to evaluate options for clarifying the applicability of the loading/unloading rack requirements, the following report discusses (1) the background and history of the requirement, (2) the general mechanics of loading/unloading operations and associated equipment, (3) the regulated community’s position and rationale with respect to application of the requirement, and (4) a comparison of EPA’s and industry’s position.

2. Background on Loading/Unloading Rack Requirement

The SPCC rule contains specific secondary containment provisions to address major container failures and prevent discharges into navigable waters and adjoining shorelines at regulated facilities. Transfer areas, where oil is loaded or unloaded between a bulk storage container and tank car or tank truck are generally located near these major containers. The requirement for loading/unloading racks under §112.7(h) was amended over time as follows:

- **1973 Proposed Rulemaking.** EPA originally published the proposed rule in July 1973. The proposed §112.7(e)(4) was titled “*Intrafacility tank car and tank truck loading/unloading (onshore).*” Accordingly, the proposed rule referred to bulk transfers involving “loading/unloading” without reference to rack or area.¹
- **1973 Meeting with the American Petroleum Institute (API).** EPA met with API in August of 1973. Afterward, an EPA rule writer submitted a note to the docket with a handwritten notation changing the title of the proposed rule to include the word “rack.” An API comment on the rule suggests that the addition of the term “rack” to the section title because it “more clearly defines the loading/unloading operations that may take place within a refinery.”²
- **1974 Final Rule.** EPA published the final rule in December 1973, effective January 10, 1974. The final §112.7(e)(4) was titled “*Facility tank car and tank truck loading/unloading rack (onshore).*” The section was also altered to require sufficient containment to hold “at least maximum capacity of any single *compartment of a tank car or tank truck loaded or unloaded in the plant*” (emphasis added). No explanation was given for changes in this section.³
- **1980 Proposed Revisions.** Revisions proposed in 1980 (but never finalized) would have modified §112.7(e)(4) to state: “Tank truck and tank car loading and unloading areas equipped with an oil loading or unloading rack shall contain sufficient secondary containment to hold the capacity of the largest compartment of a tank truck or tank rail car (if the tanks are compartmented), which is loaded or unloaded at the facility.” The preamble to this proposed rule explained, “[t]his paragraph has been simplified and retains only the existing regulation’s requirement that loading/unloading areas have sufficient secondary containment to hold the capacity of the largest compartment of a tank truck or rail tank car handled at the facility. The proposed revision also requires that the secondary containment system for the loading/unloading rack be described in the SPCC Plan.”⁴

¹ 38 FR 19334, Oil Pollution Prevention: Non-Transportation-Related Onshore and Offshore Facilities; Proposed Rulemaking. July 19, 1973.

² “API’s comments on Technical Draft”, J.W. Winfrey, API to H.D. Van Cleve, EPA Division of Oil and Hazardous Substance, EPA-HQ-OPA-1973-0001-0009. April 21, 1972.

³ 38 FR 34164, Part 112, Oil Pollution Prevention: Non-transportation Related Onshore and Offshore Facilities. 40 CFR 112. December 11, 1973.

⁴ 45 FR 33814, Water Programs; Oil Pollution Prevention; Non-Transportation Related Onshore and Offshore Facilities. May 20, 1980.

- **2002 Revised Rule.** EPA promulgated revisions to the SPCC rule in July 2002. Section 112.7(h) of the revised SPCC regulations (67 FR 47042) states:
 - (h) Facility tank car and tank truck loading/unloading rack (excluding offshore facilities).
 - (1) Where loading/unloading area drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck loading and unloading areas. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.
 - (2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle brake interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.
 - (3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

- **2004 Settlement Negotiations.** API and Marathon Oil Corporation challenged statements EPA made in the preamble to the July 2002 SPCC amendments. The preamble language at issue stated the following with respect to the §112.7(h) requirement: “This section is applicable to any non-transportation-related or terminal facility where oil is loaded or unloaded from or to a tank car or tank truck.”⁵ EPA issued a notice in response to this point of contention in the Settlement Agreement, stating:

“[W]e interpret §112.7(h) only to apply to loading and unloading “racks.” Under this interpretation, if a facility does not have a loading or unloading “rack,” §112.7(h) does not apply. Thus, in stating that section 112.7(h) applies to “all facilities, including production facilities,” the Agency only meant that the provision applies *if* a “facility” happens to have a loading or unloading rack present. The Agency did not mean to imply that any particular category of facilities, such as production facilities, are likely to have loading or unloading racks present.”⁶

Furthermore, in response to a challenge by the Petroleum Marketers Association of America (PMAA), EPA was asked to clarify whether having a rack within a facility’s boundaries would subject all loading/unloading areas at the facility to the tank car and tank truck loading/unloading “rack” requirements under §112.7(h). EPA’s response, as outlined in the Settlement Agreement is as follows:

“[T]he Agency does not interpret §112.7(h) to apply beyond activities and/or equipment associated with tank car and tank truck loading/unloading racks. Therefore, loading and unloading activities that

⁵ 67 FR 47042, Oil Pollution Prevention and Response; Non-transportation-Related Onshore and Offshore Facilities. 40 CFR 112. July 17, 2002.

⁶ 69 FR 29728, Settlement Agreement with American Petroleum Institute and Marathon Oil Co., May 25, 2004.

take place beyond the rack area would not be subject to the requirements of 40 CFR §112.7(h) (but, of course, would be subject, where applicable, to the general containment requirements of 40 CFR §112.7(c).)⁷

In 2005, EPA issued the *SPCC Guidance for Regional Inspectors* to clarify the relationships among the various general and specific secondary containment requirements of the SPCC rule, including the loading/unloading rack requirement, and to address the issues raised during the settlement negotiations. The guidance states that the loading/unloading rack provisions would typically apply to equipment with the following characteristics:

- “The equipment is a permanent structure for loading or unloading a tank truck or tank car that is located at a regulated facility.
- The equipment may be comprised of piping assemblages, valves, loading arms, pumps, or similar combination of devices.
- The system is necessary to load or unload tank trucks or tank cars.
- The system may also include shut-off devices and overfill sensors.”⁸

The guidance further states that “loading and unloading activities that take place beyond the rack area are *not* subject to the requirements of §112.7(h), but are subject, where applicable, to the general containment requirements of §112.7(c).”⁹ This clarification was made to reflect the settlement agreement with the Petroleum Marketers Association of America.¹⁰

Furthermore, “EPA acknowledges that in certain situations, the sized secondary containment requirements of §112.7(h)(1) at loading/unloading racks may be impracticable due to geographic limitations, fire codes, etc. In these cases, the owner or operator may determine that secondary containment is impracticable as provided in §112.7(d). Under this provision, the SPCC Plan must clearly explain the reasons why secondary containment is not practicable and comply with the additional regulatory requirements.”¹¹

⁷ Letter to Daniel Gilligan, President, Petroleum Marketers Association of America, from Marianne Lamont Horinko, Assistant Administrator, EPA, May 25, 2004.

⁸ U.S. Environmental Protection Agency (EPA), *SPCC Guidance for Regional Inspectors*, Version 1.0, November 28, 2005. Chapter 4: Secondary Containment and Impracticability, Section 4.4.2, page 4-33.

⁹ U.S. Environmental Protection Agency (EPA), *SPCC Guidance for Regional Inspectors*, Version 1.0, November 28, 2005. Chapter 4: Secondary Containment and Impracticability, Section 4.4.2, page 4-34.

¹⁰ Letter to Daniel Gilligan, President, Petroleum Marketers Association of America, from Marianne Lamont Horinko, Assistant Administrator, EPA, May 25, 2004.

¹¹ U.S. Environmental Protection Agency (EPA), *SPCC Guidance for Regional Inspectors*, Version 1.0, November 28, 2005. Chapter 4: Secondary Containment and Impracticability, Section 4.4.2, page 4-35.

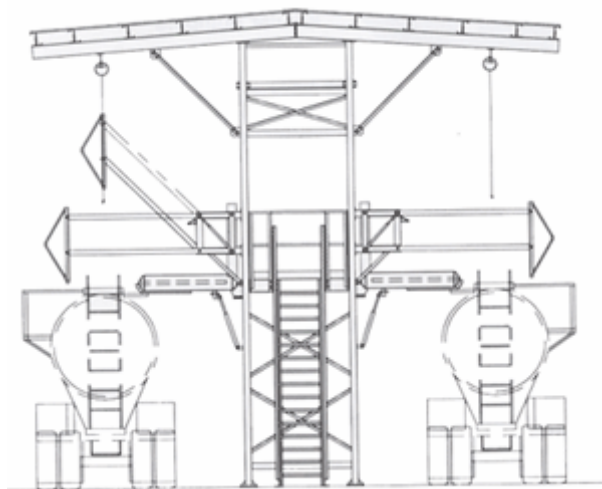
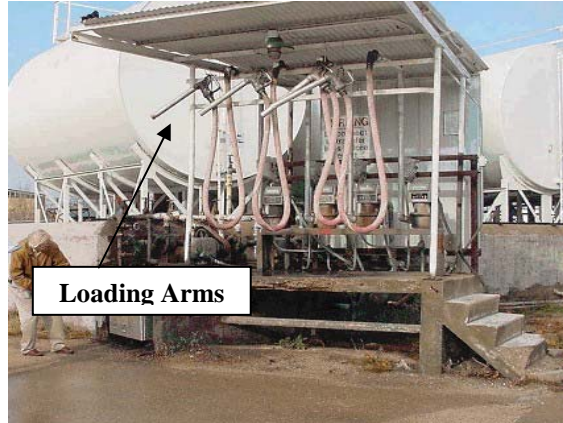
3. Mechanics of Loading/Unloading Operations and Equipment

Although the SPCC guidance document helps to clarify the application of §112.7(h), the scope of the rule may remain subject to misinterpretation given the presence of some ambiguous terms and phrases (e.g., “requirements would typically apply”, “equipment may be comprised”, etc.). EPA is interested in assessing the extent to which this term is defined in other contexts, including industry, state, federal, and international requirements. This section provides an overview of references to loading/unloading racks following a general description of the mechanisms of loading and unloading operations.

3.1 Description of Loading/Unloading Operations

Loading operations generally involve the movement of oil *from* a tank to a tank truck or tank car. Conversely, unloading operations involve the movement of oil *to* a tank from a tank truck/car. Loading operations generally occur through top and bottom loading mechanisms. As illustrated in Exhibit 1, top loading uses loading arms, platforms, gangways, and/or canopies. Fall safety devices are also found in top loading operations.

Exhibit 1
Illustrations of Top Loading Racks



Sources:

Goldline Loading Rack Systems (<http://www.goldlineinternationalinc.com/htm/proload2.htm#>, accessed on May 17, 2007).

HPF, Inc. (http://www.hpflap.com/loadingracks_details.htm, accessed on May 17, 2007)

Although top loading is common, bottom loading has been increasingly used to load/unload tank cars and trucks.¹² This is primarily due to Clean Air Act (CAA) requirements to control emissions of Volatile Organics and Hazardous Air Pollutants, which is more difficult to control using top loading operations. Accordingly, the CAA requirements have reduced or eliminated the top loading of lighter oils, such as gasoline.¹³ As illustrated in Exhibit 2, bottom loading, similar to top loading, uses loading arms and fixed structures and equipment.

Exhibit 2
Illustrations of Bottom Loading



Sources:

Loadtec, Engineered Systems, Ltd. (<http://www.loadtec.co.uk/02-02.htm>, accessed on May 17, 2007)

Mdougherty.com (<http://www.mdougherty.com/500-petroleumterminal/lane2/66-petroleumterminal-lane2-week9-canopy-2-hm.htm>, accessed on May 17, 2007).

3.2 References to Loading/Unloading Racks and Equipment

Review of the terms "loading rack" and "unloading rack" in industry, federal, state and international references suggest these terms are related to other terms, such as transfer rack, transfer area, loading terminal, gantry, and loading installation. Accordingly, Exhibit 3 provides a summary of the definition and use of the term rack and related terms from these other sources.

¹² "The Ins and Outs of Bottom Loading and Vapor Recovery", October 2006, SA Instrumentation and Control (<http://instrumentation.co.za/news.aspx?pkINewsId=22529&pkIIssued=541&pkICategoryID=91>, accessed on May 17, 2007; "Chevron Phillips Produces Precedent with Automatic Bottom Loading Rack", January 1, 2002, Bulk Transporter (http://bulktransporter.com/mag/transportation_chevron_phillips_produces/, accessed on May 17, 2007); and "Hudson Petroleum Begins Shift--To Bottom Loading Operations", January 1, 1999, Bulk Transporter (http://bulktransporter.com/mag/transportation_hudson_petroleum_begins/, accessed on May 17, 2007).

¹³ 71FR 66063. National Emission Standards for Hazardous Air Pollutants for Source categories: Gasoline Distribution Bulk Terminals, Bulk Plants, Pipeline Facilities, and Gasoline Dispensing Facilities;

Exhibit 3	
Summary of Use of Term "Rack" or Related Term	
Source	"Rack" Reference or Definition
<i>Industry References</i>	
API Standard 2610 - Design, Construction, Operation, Maintenance, and Inspection of Terminal and Tank Facilities ¹⁴	No explicit definition is provided. The standard gives instruction on spacing and location of the "tank truck loading racks" within truck loading yards. It describes spill containment paving requirements around "truck loading rack areas" and requirements for loading rack components such as the canopy, loading arms, hoses, and meters.
American National Standard ANSI/API MPMS 6.2-1983: Manual of Petroleum Measurement Standards Chapter 6, Section 2 - Loading Rack and Tank Truck Metering Systems ¹⁵	No explicit definition of rack is provided. The term "loading rack" refers to the location of a specific set of equipment, which includes loading arms, platforms, ramps, valves, pumps, piping, and a metering system. The standard does differentiate between "loading rack systems" and "tank truck systems," which are used for bulk deliveries of gasoline and oil products.
National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, Section 5.6 Loading and Unloading Operations and Facilities ¹⁶	This code does not limit its scope to structures called "racks" but discusses requirements for "loading and unloading operations and facilities." Loading and unloading facilities are separate entities, located away from surrounding structures and property lines. The code lists requirements for the pipe assembly, rack structure, tubing, pipelines, pumps, and meters, and states that "loading and unloading facilities shall be provided with drainage systems or other means to contain spills."
National Fire Protection Association (NFPA) 59: Utility LP-Gas Plant Code. Chapter 8: Handling ¹⁷	This code discusses requirements for piping and emergency shut-off valves used in loading and unloading railroad tank cars and tank trucks, as well as size, spacing and positioning requirements. The code does not use the term "rack" but refers to "transfer areas," "loading or unloading points," "loading or unloading area" and "the area of tank truck transfer."
2000 International Fire Code, Chapter 34: Flammable and	No explicit definition is provided, but the term rack does imply a specific type of structure. "Where provided, loading racks, stairs or

Proposed Rule. 40 CFR Part 63. November 9, 2006.

¹⁴ "Design, Construction, Operation, Maintenance and Inspection of Terminal & Tank Facilities." API Standard 2610. First Edition, July 1994. ANSI/API Std 2610-1994.

¹⁵ "Manual of Petroleum Measurement Standards, Chapter 6 - Metering Assemblies. Section 2 - Loading Rack and Tank Truck Metering Systems." First Edition, October 1983. American National Standard, ANSI/API MPMS 6.2-1983. Approved: January 16, 1983.

¹⁶ "Flammable and Combustible Liquids Code" National Fire Protection Association (NFPA) 30: Section 5.6: Loading and Unloading Operations and Facilities. 2003 edition.

¹⁷ "Utility LP-Gas Plant Code." National Fire Protection Association (NFPA) 59: Chapter 8: Handling. 2001 edition. [2004 Edition published, May be purchased if directed by EPA.]

Exhibit 3 Summary of Use of Term “Rack” or Related Term	
Source	“Rack” Reference or Definition
Combustible Liquids. Section 3406.5.1.12 Loading Racks ¹⁸	platforms shall be constructed of noncombustible materials. Buildings for pumps or for shelter of loading personnel are allowed to be part of the loading rack. Wiring and electrical equipment located within 25 feet of any portion of the loading rack shall be in accordance with Section 3403.1.1.”
National Institute of Standards and Technology (NIST) ¹⁹	Loading racks “are designed to fill receiving tanks either from the top, or from the side or bottom.” On a top-loading system, vertical piping carries product from the meter to a movable loading arm, which can be swung out over the top of the tanker to align the discharge line with the tank inlet. A rigid tube, referred to as a down-tube or fill spout, attached to the end of the discharge line, is then lowered into the receiving tank. The “dry break” coupling has become standard for side/bottom fill systems and the trucks they supply.
Marathon Oil Corporation ²⁰	A rack “refers to the loading area or point of sale from which trucks pick up products at a terminal to transport to other destinations.”
EPA References	
National Emission Standards for Hazardous Air Pollutants: Benzene Emissions from Benzene Transfer Operations ²¹	“Loading rack means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill tank trucks, railcars, or marine vessels.”
National Emissions Standards for Hazardous Air Pollutants for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer	“Loading rack means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.”

¹⁸ 2000 International Fire Code, Chapter 34: Flammable and Combustible Liquids. Section 3406.5.1.12 Loading Racks. 2000.

¹⁹ National Institute of Standards and Technology, Course 304 – Loading-Rack Meters Presentations and Course Material, Chapter 2 – Introduction to Loading Rack Metering Systems, Revised August 2000 (http://ts.nist.gov/WeightsAndMeasures/upload/Chapter_2.pdf, accessed on May 17, 2007).

²⁰ Marathon Oil Corporation, Refining, Transportation, & Marketing Terms, (http://www.marathon.com/News_Center/Marathon_News/Glossary/Refining_Marketing_Transportation_Terms/, accessed on May 17, 2007).

²¹ National Emission Standards for Hazardous Air Pollutants, Subpart BB: Benzene Emissions From Benzene Transfer Operations U.S. EPA, 40 CFR 61.301. Definitions. Revised as of July 1, 2005.

²² National Emissions Standards for Hazardous Air Pollutants for Source Categories, Subpart G: Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater U.S. EPA, 40 CFR 63.111. Definitions. Revised as of July 1, 2005.

Exhibit 3 Summary of Use of Term “Rack” or Related Term	
Source	“Rack” Reference or Definition
Operations, and Wastewater ²²	
National Emissions Standards for Hazardous Air Pollutants: Petroleum Refineries ²³	“Gasoline loading rack means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill gasoline cargo tanks.”
National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production ²⁴	Transfer (or loading) rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks, railcars, ships, and/or barges.
Other Federal References	
Occupational Safety and Health Act (OSHA) ²⁵	No explicit definition of rack is provided. Loading racks are noted to contain raised structures that typically stand over four feet off the ground. As such, OSHA provides safety requirements associated with a “properly functioning loading rack.” For example, fall protection safety standards recommend that exposed sides of platforms, fixed ladders, and holes in structural components contain certain safety standards (i.e., side rails, cages, etc.).
State References	
North Carolina Department of Environment and Natural Resources; Division of Air Quality ²⁶	Loading rack means “an aggregation or combination of loading equipment arranged so that all loading outlets in the combination can be connected to a tank truck or trailer parked in a specified loading space.”
General Assembly of Georgia ²⁷	Loading rack means “that part of a terminal facility by which motor fuels are physically removed from the terminal facility into transport tank trucks, marine vessels, or rail cars.”
Minnesota Pollution Control Agency ²⁸	“Substance transfer area” means the area where a truck or rail car makes its connection to or from an aboveground storage tank system for the purpose of unloading or receiving a substance.

²³ National Emissions Standards for Hazardous Air Pollutants: Petroleum Refineries. U.S. EPA, 40 CFR 63.641 Definitions, July 1, 2005.

²⁴ National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production, 40 CFR part 63.9075, (http://a257.g.akamaitech.net/7/257/2422/12feb20041500/edocket.access.gpo.gov/cfr_2004/julqtr/40cfr63.9075.htm, accessed on May 17, 2007).

²⁵ Occupational Safety and Health Act, Public Law 91-596, 84 STAT. 1590, 91st Congress, S.2193 December 29, 1970, as amended through January 1, 2004. US Department of Labor, (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=2743, accessed on May 17, 2007).

²⁶ North Carolina Department of Environment and Natural Resources; Division of Air Quality, Volatile Organic Compound Definitions (<http://daq.state.nc.us/cgi-bin/parsePdf1.cgi?file=/rules/rules/D0901.pdf>, accessed on May 17, 2007).

²⁷ General Assembly of Georgia, Chapter 9 of Title 48 of the Official Code of Georgia, Section 1 (www.legis.state.ga.us/legis/2005_ss/fulltext/hb2ex.htm, accessed on May 17, 2007).

Exhibit 3 Summary of Use of Term “Rack” or Related Term	
Source	“Rack” Reference or Definition
New Mexico Environment Department ²⁹	"Loading rack" means the loading arms, pumps, meters, shutoff valves, relief valves, and other equipment used to fill fuel cargo tanks. (Note this is a draft definition as of May 15, 2007).
International References	
Newfoundland Ocean Industries Association (NOIA) ³⁰	Truck Loading Rack: Rack has three 4" loading arm stations. Two arms are equipped to load fuel oil and/or bunkers; one is equipped to handle distillate.
Department of Environment Food and Rural Affairs (DEFRA), United Kingdom ³¹	Gantry means any facility at a terminal at which petrol can be loaded onto a single road tanker at any one time. Loading Installation means any facility at a terminal at which petrol can be loaded onto mobile containers. Loading installations for road tankers comprise one or more gantries.
Republic of Latvia, Department of Environmental Protection ³²	Gantry is defined as equipment used for filling road tankers at oil terminals. Loading Installation includes any equipment at service stations or oil terminals by which fuel is filled into mobile containers and fuel tanks of road transport; in road tanker loading installations of oil terminals there may be one or several gantries.

As shown in Exhibit 3, many definitions of loading rack, and similar terms, generally state that a loading rack is a physical structure used to transfer oil. However, some provide details on the equipment that may be used as part of a loading/unloading rack system, including loading arms, hoses, pipes, meters, platforms, ramps, valves, pumps, tubes, emergency shut-off valves, fill spouts, and couplings.

Loading racks are typically designed to meet the needs of an individual facility.³³ However, as presented in Exhibit 4, consultation with manufacturers of loading racks suggests that there is commonality among the basic structural components of a typical “loading rack.”³⁴

²⁸ Minnesota Pollution Control Agency, Above Ground Storage of Liquid Substances, Chapter 7151.1200 (<http://www.revisor.leg.state.mn.us/arule/7151/1200.html>, accessed on May 17, 2007).

²⁹ New Mexico Environment Department, Petroleum Storage Tank Bureau, http://www.nmenv.state.nm.us/ust/docs/rules/20_5_1JJP3_20_07.pdf, accessed on May 17, 2007).

³⁰ NOIA (Newfoundland Ocean Industries Association), Canada’s largest offshore petroleum association, (<http://www.noianet.com/regionalinfrastructureitem.aspx?nid=40>, accessed on May 17, 2007).

³¹ Department of Environment Food and Rural Affairs (DEFRA), United Kingdom, Draft Process Guidance Note PG1/13(XX) Petrol Terminals, Modified March 22, 2004 (http://www.environment-agency.gov.uk/commoddata/acrobat/pg_1_13_020708.pdf, accessed on May 17, 2007).

³² Republic of Latvia, Department of Environmental Protection, Regulation No. 269, Regulations Regarding Environmental Quality Requirements for Service Stations, Oil Terminals and Mobile Containers (http://www.ttc.lv/index.php?skip=165&itid=mk_noteikumi&id=10&tid=71&l=EN, accessed on May 17, 2007).

³³ Engineer at Safe Harbor Access Systems, LLC. (January 18, 2007), phone interview.

Exhibit 4 Summary of “Typical Components” as Characteristic of a Loading Rack	
Component	Discussion
Loading Arm	Loading arms are an essential component of both top and bottom loading.
Gangway	Gangways are primarily found on loading racks that accommodate top loading procedures. However, it is not uncommon for bottom loading operations to require gangways to access the top of a structure during loading operations for the purpose of sample testing or pressure release.
Platform	Platforms offer structural bases to a loading rack and are typical of both top and bottom loading. Platforms are often found in conjunction with additional components (e.g., gangways), whereas bottom loading operations that do not require access to the top of a tank are sufficient with only a platform component.
Safety Component	Due to OSHA requirements, loading racks characteristically contain some form of safety structure (e.g., side rails for fall protection). ³⁵

Metering systems and switch valves are considered optional accessories to loading racks and are commonly seen in more expensive loading rack structures.³⁶ Although other structural components such as piping assemblages, valves, and pumps are considered necessary in reference to a loading rack, the rack manufacturers did not generally consider this equipment part of the loading rack structure itself.

³⁴ Employee at Franklen Equipment, Inc. (January 22, 2007); Engineer at Safe Harbor Access Systems, LLC. (January 18, 2007); Employee at Carbis Inc., (January 18, 2007); Employee at Hemco Industries (January 19,207).

³⁵ OSHA standards pertaining to loading racks as provided by Greg Herbig. Engineer at Safe Harbor (January 23, 2007), emailed response: 1910.23, 19.1027(d)(5), 1901.66, 1910.146, 1926.43 (Subpart L), 1926.50 (Subpart M), 1926.1053 (Subpart X).

³⁶ Employee at Carbis Inc., (January 18, 2007), phone interview.

4. Industry Position and Rationale

The regulated community has raised concern with EPA's interpretation of the §112.7(h) requirement. The following section provides a review of industry's position and rationale based on a review of the following dockets and correspondence:

- Dockets for the 1991, 1993, and 1997 proposed SPCC rule revisions;
- Correspondence to EPA Oil Program since 2002;
- Comments on the *SPCC Guidance for Regional Inspectors*;
- Comments on the Notices of Data Availability (NODAs);
- Comments on SPCC rule compliance date extensions; and
- Comments on the 2005 SPCC rule revision proposal.

Review of comments from industry related to the definition and use of the term "loading/unloading rack" suggested the following key points:

- (1) All references to "loading/unloading area" in the §112.7(h) should be changed to "loading/unloading rack";
- (2) EPA should provide a definition for loading/unloading rack; and
- (3) EPA should allow certain exclusions for facilities where there is low risk of contamination or where the cost would be too burdensome.

These comments and corresponding rationale provided by industry stakeholders are discussed in further detail below.

4.1 Change all references from "loading/unloading area" to "loading/unloading rack"

As noted previously, although the title of §112.7(h) refers to "loading/unloading rack" the text of the requirement refers to "loading/unloading areas." This has resulted in some ambiguity in how to apply the loading/unloading rack requirements at SPCC-regulated facilities. The regulated community has contended that interpreting the rule to "areas" as opposed to "racks" would be burdensome to industry. In letters to EPA dated September 13, 2002,³⁷ October 30, 2002,³⁸ October 18, 2003,³⁹ and August 13, 2004⁴⁰ the American Petroleum Institute (API) claims that a requirement for containment in accordance with 112.7(h) on all loading/unloading "areas" would be a significant change that would increase facility costs without a corresponding benefit; they state that the regulated community had no opportunity to comment on such a change and that

³⁷ "API SPCC Issue Paper: Loading/Unloading Racks." September 13, 2002. Attachment to letter from Roger Claff, Senior Environmental Scientist, American Petroleum Institute to Mr. David Lopez, Director, Oil Program Center.

³⁸ "Circumstances Justifying Deviation from Secondary Containment on the Basis of Impracticability." October 30, 2002. Attachment to letter from Roger Claff, Senior Environmental Scientist, American Petroleum Institute to Mr. David Lopez, Director, Oil Program Center.

³⁹ "Definition of Loading Racks." October 18, 2003. Attachment to letter from Roger Claff, Senior Environmental Scientist, American Petroleum Institute to Mr. David Lopez, Director, Oil Program Center.

⁴⁰ SPCC Priority Issue Matrix, American Petroleum Institute (API), August 13, 2004.

EPA has not identified the costs and benefits of such an expansion. Other industries have echoed similar concerns at meetings with EPA staff.⁴¹ Accordingly, industry has requested that all references in §112.7(h) to “loading/unloading area” be changed to “loading/unloading rack.”

However, two professional engineers (PEs) who work with industry to develop SPCC Plans suggested a broader application of the rule:

- A PE from Michigan stated that “[t]he term ‘loading/unloading rack’ in the title of this section should be changed to read ‘loading/unloading area’ to make it unambiguous that the section applies to all types of loading/unloading stations. For the same reason, in 40 CFR 112.7(h)(2) the term ‘rack’ should be replaced by the term ‘loading/unloading area’.”⁴²
- A PE from Missouri, commented on the 1997 proposed rule stating that “[m]ost unloading and many loading points are not an actual rack but a coupling outside the tank containment area. Many SPCC Plans to [sic] not address the potential of a spill from such locations.”⁴³

4.2 Provide definition for loading/unloading rack

Several comments also recommended that EPA provide a specific definition for “loading/unloading rack.” For example, based on research on how the term “rack” is used in the petroleum industry, as documented in industry standards and recommended practices, API provided the following suggested definition to the Agency under §112.7(h)

Loading/unloading rack: A system, located at petroleum refineries, bulk plants, and marketing terminals, comprised of loading arms, pumps, meters, automatic shutdown devices, overfill sensors, piping and valves necessary to load and unload tank trucks or tank cars. In normal use, a loading/unloading rack is used several times a day to load or unload petroleum fuels to or from tank trucks or tank cars.⁴⁴

API arrived at their definition by examining various industry standards and other documents, including EPA rules and guidance. Other specific definitions provided by various regulated community members in letters to EPA include, for example:

- Facility loading/unloading with a “hard piping or structure” or a bulk facility loaded/unloaded with a hose. Bulk storage in this context would refer to storage for

⁴¹ These include, for example: Air Transport Association of America (ATA), National Air Transportation Association (NATA), the Airports Council International-North America (ACI-NA), the American Association of Airport Executives (AAAE), American Chemistry Council (ACC), and the U.S. Small Business Administration (SBA).

⁴² Letter re: EPA Proposal to Amend 40 CFR 112, Oil Pollution Prevention published in FEDERAL REGISTER on Tuesday, 22 October 1991 (56 FR 54612-54641). December 23, 1991. From Dietrich R. Bergmann, Michigan Professional Engineer; To Emergency Response Division, Superfund Docket Clerk. Docket Number SPCC-1P-2-47.

⁴³ Letter re: Comments on Proposed Rules for 40 CFR 112. January 24, 1998. From Robert W. Jones, PE, RLS; To Superfund Docket. Docket Number SPCC-7-2-40.

⁴⁴ “Definition of Loading Racks.” October 18, 2003. Attachment to letter from Roger Claff, Senior Environmental Scientist, American Petroleum Institute to Mr. David Lopez, Director, Oil Program Center.

further distribution (i.e., not the kind of storage associated with the automotive service sector).⁴⁵

- Fixed and permanent location, designed for the purposes of loading or unloading the cargo portion of tank trucks, rail cars, or other mobile cargo containers that carry fuel in bulk, at which fixed manifolds, valves and piping connect to a fixed tank or tanks.⁴⁶

In addition, one organization, the Small Business Administration Office of Advocacy (SBA), suggested an alternative definition for loading and unloading rack:

- Loading Rack means any permanent piping or structure used to dispense oil cargo into a tank truck, railroad tank car or other mobile cargo container.
- Unloading Rack means any combination of fixed piping or equipment used to unload oil cargo from a tank truck, railroad tank car or other mobile cargo container into an AST or UST.⁴⁷

4.3 Provide Exclusions for Certain Facilities

The last category of comments recommended that EPA provide exclusions for certain facilities from the loading rack provision. Exhibit 5 provides a summary of these suggested exemptions and industry's rationale.

Exhibit 5 Summary of Industry Suggested Exemptions	
Suggested Industry Exemption	Industry Rationale
Farm operations ⁴⁸	Farm oil/fuel dispensing equipment does not typically include complicated rack-type equipment.
Animal Fats/Vegetable Oils (AFVO) ⁴⁹	AF/VO products used in the U.S. feed industry are non-toxic, biodegradable, non-corrosive, not persistent in the environment and any potential spills or leaks would be quickly mitigated due to the very limited flow ability at normal temperatures. Thus, they pose a significantly lower risk to the environment than petroleum oils, and should not be regulated by the same standards and requirements as petroleum oils.

⁴⁵ Automotive Oil Change Association (AOCA), February 13, 2003; Automotive Oil Change Association (AOCA) (11/20/02); and the Automotive Service Association (ASA), November 20, 2002.

⁴⁶ Department of Defense Clean Water Act Services Steering Committee (CWASSC), January 30, 2004.

⁴⁷ Jack Faucett Associates, Inc. on behalf of the US Small Business Administration (SBA), July 14, 2003.

⁴⁸ Letter to Ms. Marianne Horinko, U.S. EPA from Agricultural Retailers Association and American Corn Growers Association, regarding EPA Oil Pollution Prevention and Response Regulations (40 CFR 112; "SPCC Oil Spill Rule") - Amendments and Recommendations as it Potentially Applies to Agriculture, March 19, 2004.

⁴⁹ Letter to David S. Evans, U.S. EPA, from American Feed Industry Association, Regarding: Requested Information on "Animal Fats and Vegetable Oils (AF/VO) Used in the US Feed Industry" relative to EPA's

Exhibit 5
Summary of Industry Suggested Exemptions

Suggested Industry Exemption	Industry Rationale
<p>Small facilities with small volume containers and infrequent loading/unloading activity (e.g., auto-service facilities, hot mix asphalt operations, and utility companies).</p>	<p><u>National Asphalt Pavement Association (NAPA)</u>: We do not believe the cost of such protection for small facilities is justified given the lack of problems at HMA facilities involving loading/unloading excursions. Mobile equipment tanks are very small and protected by secondary containment (500-1,000 gallons). Some sites use #2 fuel oil that is stored in 15,000-30,000 gallon above-ground tanks protected by secondary containment. Should a pumped line rupture, the probability is great that material would escape any local transfer line containment and have to be dealt with in a site contingency plan context. Therefore, we request clarification that specifically allows some room for judgment, cost effective alternatives, and site contingency plan alternatives at HMA facilities in lieu of the absolute requirement to install a catchment basin or treatment facility.⁵⁰</p> <p><u>AT&T</u>: Many of our facilities have small tanks (generally 1,000 gallons capacity), which supply fuel for standby electrical generators. These tanks are filled infrequently (yearly in many cases) and we feel that unloading facilities are unwarranted for this type of situation.⁵¹</p> <p><u>Automotive Oil Change Association</u>: The automotive service sector, comprised primarily of small businesses, would have faced extreme hardship without the impending Environmental Protection Agency (EPA) clarification to the definition of "loading rack" as it is used in the final rule entitled Oil Pollution Prevention and Response; Non-Transportation-Related Onshore and Off-shore Facilities (67 Fed. Reg. 47042; July 17,2002). In our view, if the regulatory text for subsection 112.7(h) in the final rule applies to automotive service facilities, then it was published without proper notice and comment.⁵²</p>
<p>Onshore production facilities</p>	<p>Requirements of the proposed SPCC rule go beyond what is necessary for oil and natural gas facilities that are not used on a daily basis. For smaller facilities, tank truck loading/unloading occurs only every few days to a few times monthly.⁵³</p> <p>This section would require operators to install a containment system at each truck loading point. These are not present at most Appalachian oil production operations, and we doubt that the economic impact for their installation, has been factored into the fiscal impact of these proposals.⁵⁴</p>

SPCC Rulemaking, July 25, 2005.

⁵⁰ National Asphalt Pavement Association (NAPA), December 12, 2002.

⁵¹ Letter re: Comments on October 22, 1991 Proposed Rule 40 CFR Part 112. December 20, 1991. From J.R. Durante, Corporate Environmental Engineering Manager, AT&T; To Superfund Document Clerk. Docket Number SPCC-1P-2-79.

⁵² Automotive Oil Change Association, November 20, 2002.

⁵³ Independent Petroleum Association of America, August 28, 2001.

⁵⁴ Independent Oil and Gas Association of New York, December 19, 1991.

5. Comparison of EPA and Industry Position

EPA's explanation of §112.7(h), as found in the preamble to the 2002 SPCC rule revision is as follows:

This section is applicable to any non-transportation-related or terminal facility where oil is loaded or unloaded from or to a tank car or tank truck. It applies to containers, which are aboveground (including partially buried tanks, bunkered tanks, or vaulted tanks) or completely buried (except those exempted by this rule), and to all facilities, large or small. All of these facilities have a risk of discharge from transfers. Our Survey of Oil Storage Facilities (published in July 1996) showed that as annual throughput increases, so does the propensity to discharge, the severity of the discharge, and, to a lesser extent, the costs of the cleanup. Throughput increases are often associated with transfers of oil.⁵⁵

API requests that §112.7(h) only apply to “racks” interpreted as a system comprised of specific components, however, the preamble does not suggest that the physical rack structure must be present. API's definition would further restrict the location of these racks to petroleum refineries, bulk plants, and marketing terminals. API's definition as well as comments from AT&T refers to an interpretation that includes only racks of high usage.^{56,57} This is in contrast to EPA's more broad reference to “any non-transportation-related or terminal facility” (emphasis added). The preamble further emphasizes that the rule is to apply to “all facilities, large or small.”⁵⁸ EPA currently does not specify a threshold for the frequency of use for a loading or unloading area.

As noted above, EPA attempted to clarify the application of the requirement in the *SPCC Guidance for Regional Inspectors*, which states that a rack typically has the following characteristics:

- The equipment is a permanent structure for loading or unloading a tank truck or tank car that is located at a regulated facility.
- The equipment may be comprised of piping assemblages, valves, loading arms, pumps, or similar combination of devices.
- The system is necessary to load or unload tank trucks or tank cars.
- The system may also include shut-off devices and overfill sensors.⁵⁹

⁵⁵ 67 FR 47042. Oil Pollution Prevention and Response: Non Transportation-Related Onshore and Offshore Facilities. U.S. EPA, 40 CFR Part 112, V Section by Section Analysis, Subpart A - Applicability, Definitions and General Requirements for all Facilities. July 17, 2002.

⁵⁶ "Definition of Loading Racks." October 18, 2003. Attachment to letter from Roger Claff, Senior Environmental Scientist, American Petroleum Institute to Mr. David Lopez, Director, Oil Program Center.

⁵⁷ Letter re: Comments on October 22, 1991 Proposed Rule 40 CFR Part 112. December 20, 1991. From J.R. Durante, Corporate Environmental Engineering Manager, AT&T; To Superfund Document Clerk. Docket Number SPCC-1P-2-79.

⁵⁸ 67 FR 47042. Oil Pollution Prevention and Response: Non Transportation-Related Onshore and Offshore Facilities. U.S. EPA, 40 CFR Part 112, V Section by Section Analysis, Subpart A - Applicability, Definitions and General Requirements for all Facilities. July 17, 2002.

⁵⁹ U.S. Environmental Protection Agency (EPA), *SPCC Guidance for Regional Inspectors*, Version 1.0, November 28, 2005. Chapter 4: Secondary Containment and Impracticability, Section 4.4.2, page 4-33.

This interpretation is similar to industry's view that a rack is a fixed structure used to load or unload tank trucks or tank cars. However, EPA's guidance document interpretation remains broader than API's suggestion, in that it is not limited to systems with the specific components or at the specific locations as suggested by API. EPA also does not currently limit the requirement according to the frequency of use. Exhibit 6 provides a summary of the differences between the EPA guidance document interpretation and API's recommended definition.

Exhibit 6 Comparison of EPA SPCC Guidance Document Interpretation and API Proposed Definitions for the Term "Rack" as Applicable to §112.7(h)		
Characteristic	EPA SPCC Guidance Document (2005)⁶⁰	API (2004)⁶¹
Complete Interpretation	<p>A rack typically has the following characteristics:</p> <ul style="list-style-type: none"> • The equipment is a permanent structure for loading or unloading a tank truck or tank car that is located at a regulated facility. • The equipment may be comprised of piping assemblages, valves, loading arms, pumps, or similar combination of devices. • The system is necessary to load or unload tank trucks or tank cars. • The system may also include shut-off devices and overfill sensors. 	<p>A system, located at petroleum refineries, bulk plants, and marketing terminals, comprised of loading arms, pumps, meters, automatic shutdown devices, overfill sensors, piping and valves necessary to load and unload tank trucks or tank cars. In normal use, a loading/ unloading rack is used several times a day to load or unload petroleum fuels to or from tank trucks or tank cars.</p>
Physical Entity	fixed structure	fixed structure
Components	any permanent structure, which <i>may</i> include piping assemblages, valves, loading arms, pumps, or similar combination of devices	specific equipment: loading arms, pumps, meters, automatic shutdown devices, overfill sensors, piping and valves
Location	at any type of regulated facility; however, the loading areas associated with a production tank battery generally do not have the equipment described above, which is often associated with loading rack	specific types of facilities: petroleum refineries, bulk plants, and marketing terminals
Frequency of Use	not limiting	used several times a day
Size of Facility and/or Container	not limiting	not limiting

⁶⁰ U.S. Environmental Protection Agency (EPA), *SPCC Guidance for Regional Inspectors*, Version 1.0, November 28, 2005. Chapter 4: Secondary Containment and Impracticability, Section 4.4.2, page 4-33.

⁶¹ "Definition of Loading Racks." October 18, 2003. Attachment to letter from Roger Claff, Senior Environmental Scientist, American Petroleum Institute to Mr. David Lopez, Director, Oil Program Center.