

The Department proposes to amend Regulation 24 by replacing Section 46, which is reserved, with the following. Section 46 does not change any of the other sections of Regulation 24.

Section 46 - Lightering Operations.

??/11/06

a. Applicability.

1. This section applies to the owner or operator of a lightering **service** that carries out crude oil lightering operations in the waters of the State.
2. While carrying out emergency lightering operations, the owner or operator of a lightering **service** subject to this section is subject only to the requirements of paragraph h. of this section.
3. The owner or operator of a lightering **service** subject to this section may be required to obtain, revise, or amend permits issued by the Department pursuant to Regulations 1102, 1125, and/or 30 of the State of Delaware “Regulations Governing the Control of Air Pollution.”
4. The requirements of this section are in addition to all other applicable State and Federal rules and regulations.
5. Nothing in this section shall be construed to require any act or omission that would be in violation of any rules or regulations of the United States Coast Guard or to prevent any act that is necessary to secure the safety of personnel, property, or the environment.

b. Definitions. As used in this section, all terms not defined herein shall have the meaning given them in Regulation 1 or in Section 2 of this regulation.

“Baseline volume” means the average annual volume, in barrels per year, of crude oil lightered in the waters of the State during calendar years 2004 and 2005. If an existing lightering service did not carry out lightering operations throughout 2004 and 2005, the baseline volume for that existing lightering service shall be the average annual volume of crude oil lightered in the waters of State during the 24 month period beginning with its first lightering operation after December 31, 2003. The baseline volume for a new lightering service is zero.

“Emergency lightering operations” means the transfer of crude oil cargo to mitigate or prevent a cargo spill, to stabilize a vessel whose integrity has been compromised, or to comply with the requirements of a Coast Guard Captain of the Port Order issued under the authority of the Ports and Waterways Safety Act, 33 U.S.C. 1221, as implemented by 33 CFR 160.111.

“Existing lightering service” means any lightering service that carried out a lightering operation in the waters of the State prior to the effective date of this section.

“Existing service vessel” means a service vessel that has been used in a lightering operation in the waters of the State prior to the effective date of this section.

“Lightering operation” means the transfer of crude oil from the cargo tank of a ship to be lightered to the cargo tank of a service vessel.

“Lightering service” means any person that, under contract, carries out a lightering operation.

“Marine tank vessel” means any marine vessel, which is specifically constructed or converted to carry crude oil in cargo tanks.

“New lightering service” means any lightering service that had not carried out a lightering operation in the waters of the State prior to the effective date of this section.

“New service vessel” means a service vessel that has not been used in a lightering operation in the waters of the State prior to the effective date of this section.

“Ozone Action Day” means a day that is predicted, based on forecasted weather conditions, to reach unhealthy ozone concentrations. Frequently called Code Red Day, an Ozone Action Day is declared prior to 1430 hours (local time) for the following day.

“Service vessel” means the marine tank vessel receiving crude oil during a lightering operation.

“Ship to be lightered” means the marine tank vessel delivering crude oil during a lightering operation.

“Uncontrolled lightering operation(s)” means the period or periods when VOC emissions are vented to the atmosphere during a lightering operation.

“Vapor balancing” means the transfer of vapors displaced by the incoming crude oil from the cargo tank of a service vessel into a cargo tank of the ship to be lightered via the vapor control system.

“Vapor control system” means an arrangement of piping and hoses used to collect and transfer vapor emissions from the cargo tank of a service vessel into a cargo tank of the ship to be lightered.

“Vapor leak” means a gaseous leak that is detectable by sight, sound, or smell.

“Vapor tight” means a marine tank vessel has successfully demonstrated vapor tightness using the method in either paragraph (c)(1) or (c)(2) in Section 63.565 of 40 CFR Part 63 Subpart Y within the preceding twelve months.

“Waters of the State” means those waters within the boundaries of the State, including the 12 mile circle described from New Castle and extended to the low water mark on the eastern side of the Delaware River and extending below the 12 mile circle with the middle of the shipping channel through the Delaware River and Bay and extending to the Atlantic Ocean and including those waters of the territorial sea which are in direct contact with the coast of Delaware, extending from the line of ordinary low water seaward for a distance of 3 geographical miles. This definition shall include any waters beyond the 3-mile mark as authorized by Federal Law.

c. Standards.

1. The owner or operator of a lightering **service** subject to this section shall collect and transfer the VOC emissions from the service vessel by vapor balancing to the cargo tanks of the ship to be lightered while carrying out a lightering operation.
2. The owner or operator of a lightering **service** subject to this section shall only **use** vapor tight service vessels **during lightering operations**.
3. Prior to each lightering operation, the owner or operator of a lightering **service** subject to this section shall verify that all valves in the vapor control system **of the service vessel** are correctly positioned to allow the collection and control of VOC emissions.
4. During each lightering operation, the owner or operator of a lightering **service** subject to this section shall verify that there are no vapor leaks in the vapor control system **of the service vessel**. Whenever a vapor leak is detected:
 - i. A first attempt at repair shall be made prior to the completion of the lightering operation.
 - ii. If a vapor leak on the service vessel can not be repaired prior to the completion of the lightering operation, the leak shall be tagged and record.
 - iii. The vapor leak shall be repaired prior to the date that the service vessel is used in a lightering operation.
 - iv. Following completion of the repair, the service vessel shall be leak tested using the method in either paragraph (c)(1) or (c)(2) in Section 63.565 of 40 CFR Part 63 Subpart Y.
5. The owner or operator of a lightering **service** subject to this section shall only use **service vessels equipped with** submerged fill pipes **during lightering operations**.

d. Compliance schedule.

1. The owner or operator of a lightering **service** subject to this section shall comply with the following requirements.
 - i. Not later than 90 days after the effective date of this section, the owner or operator of an existing **lightering** service shall provide the following information to the Department.
 - A. The name or identification of existing service vessels that are expected to **be used in** lightering operations in the waters of the State after 2006.
 - B. The expected date that the vapor control system will be installed on each existing service vessel. **The date the vapor control system was first used, if the existing service vessel is equipped with a vapor control system.**

- ii. Upon the initial lightering operation of a new service vessel in the waters of the State, the owner or operator of a lightering service shall provide the following information to the Department.
 - A. The name or identification of the new service vessel.
 - B. The date that the new service vessel commenced lightering operations in the waters of the State.
 - C. The expected date that the vapor control system will be installed on the new service vessel or the reason that a vapor control system will not be installed on that new service vessel. **(This is an entirely new requirement)**
- iii. The owner or operator of an existing lightering service shall comply with the requirements of paragraph c.1. of this section to the greatest extent practicable and shall comply with the requirements of paragraphs c.2. through c.5. of this section when vapor balancing.
- iv. Beginning May 1, 2008, the 12-month rolling total volume of uncontrolled lightering shall not exceed the existing lightering service’s baseline volume multiplied by the percentages listed in Table 46-1.

Table 46-1	
<u>Beginning on</u>	<u>Maximum allowable uncontrolled lightering volume</u>
May 1, 2008	80 %
May 1, 2010	61 %
May 1, 2012	43%

- v. The total volume of uncontrolled lightering for any given lightering operation shall be calculated using the following equation.

$$TUV = \sum_{i=1}^m (V)_i + \sum_{j=1}^n (EV)_j \qquad \text{Eq.46-1}$$

Where,

- TUV = the total uncontrolled volume for each given lightering operation. This total volume is used in the determination of 12-month rolling total volume in paragraph d.1.iv.
- V = the volume of crude oil transferred to the service vessel when displaced vapors are emitted directly to the atmosphere rather than captured by the vapor control system.
- EV = the equivalent volume of crude oil transferred corresponding to the captured vapors emitted directly to the atmosphere as a result of depressurization. The equivalent volume shall be calculated using a method approved by the Department. **[Note – A recommendation has been made to include**

methodology in paragraph (d)(i)(D)(10) in Section 1257 of 40 CFR Part 63 Subpart FFF]

- i = the individual uncontrolled venting when transferring crude oil.
- j = the individual depressurization venting.
- m = the total number of uncontrolled ventings of displaced vapors when transferring crude oil for each given lightering operation.
- n = the total number of depressurization ventings for each given lightering operation.

(This is an entirely new paragraph)

2. Ozone Action Day limitations. Beginning May 1, 2007, uncontrolled lightering operations shall be curtailed as follows on any day that the Department declares an Ozone Action Day.
 - i. Uncontrolled lightering operations shall not be carried out from 0230 hours until 1630 hours (local time) of the declared Ozone Action Day. However, if an uncontrolled lightering operation had begun prior to the declaration of the Ozone Action Day, that lightering operation may continue until 0230 hours (local time) or until the service vessel is fully loaded, whichever is later.
 - ii. If the Department declares consecutive Ozone Action Days, the owner or operator of a lightering **service** shall, to the greatest extent practicable, minimize uncontrolled lightering operations on the second and subsequent consecutively declared Ozone Action Days as follows:
 - A. Carrying out controlled lightering operations, if vapor balancing compatible service vessels and ships to be lightered are available.
 - B. Rescheduling the uncontrolled lightering operations to the periods of 1630 hours to 0230 hours (local time) of the second and subsequent consecutively declared Ozone Action Days.
3. No later than January 1, 2014, the Department, owners or operators of existing lightering services subject to this section, and cargo owners shall determine the feasibility of achieving a 25 per cent maximum allowable uncontrolled lightering volume by May 1, 2017. If a 25 per cent maximum allowable uncontrolled lightering volume is determined to be feasible, the Department shall amend the requirements of Table 46-1 by January 1, 2016. The amended requirements shall establish a maximum allowable uncontrolled lightering volume of 25% beginning on May 1, 2017.
4. If a 25 per cent maximum allowable uncontrolled lightering volume is determined not to be feasible under paragraph d.3., the Department shall amend the requirements of Table 46-1 by January 1, 2016. The amended requirements shall establish the feasible maximum allowable uncontrolled lightering volume beginning on May 1, 2017.
5. No later than January 1, 2019, the Department, owners or operators of existing lightering services subject to this section, and cargo owners shall determine the feasibility of achieving a 5 per cent maximum allowable uncontrolled lightering volume by May 1, 2022. If a 5 per cent maximum allowable uncontrolled lightering volume is determined to be feasible, the

Department shall amend the requirements of Table 46-1 by January 1, 2021. The amended requirements shall establish a maximum allowable uncontrolled lightering volume of 5% beginning on May 1, 2022.

6. If a 5 per cent maximum allowable uncontrolled lightering volume is determined not to be feasible under paragraph d.5., the Department shall amend the requirements of Table 46-1 by January 1, 2021. The amended requirements shall establish the feasible maximum allowable uncontrolled lightering volume beginning on May 1, 2022.
7. Any changes to the requirements of Table 46-1 shall be made in accordance with the requirements of Title 7 Delaware Code, Chapter 60.

e. Compliance Plan.

1. Within 120 days after the effective date of this section or upon initial startup of each vapor control system, whichever is later, the owner or operator of a lightering **service** shall develop and implement a compliance plan that describes how initial and ongoing compliance will be demonstrated. The owner or operator of a lightering **service** shall make the compliance plan for each vapor control system available for inspection, upon request, by the Department.
2. Initial Compliance. The owner or operator of a lightering service may provide the Department with a certified copy of the service vessel's vapor control system Approval Letter issued by or on behalf of the United States Coast Guard in accordance with 46 CFR 39.10-13 and 46 CFR 31.01-3, to demonstrate initial compliance.
3. Ongoing Compliance. The ongoing compliance demonstration **plan** shall include, at a minimum, the information specified in paragraphs e.3.i. through e.3.v.
 - i. The recommended instrumentation for the continuous measurement and recording of the operating pressures of the vapor control system during lightering operations.
 - ii. The recommended operating and maintenance procedures for the vapor control system.
 - iii. The recommended startup, shutdown, and malfunction plan for the vapor control system, **which shall include the approved calculation methodology to determine the volume of uncontrolled lightering in paragraph d.1.v. of this section.**
 - iv. The recommended operating procedures to prevent inadvertent uncontrolled VOC emissions to demonstrate compliance with paragraph c.3. of this section.
 - v. The recommended leak testing procedures to demonstrate compliance with paragraph c.4. of this section.
4. To the extent practical, the lightering **service's** standard operating and maintenance manuals and standard log sheets may be used to satisfy the requirements of the compliance plan, provided these manuals and log sheets meet the individual requirements of paragraph e.3.

f. Equivalent methods of control.

1. Upon written application, the Department may approve the use of an alternative control technology to satisfy the requirements of paragraph c.1. of this section.
 2. The application must contain a complete description of the alternative control technology, proposed compliance demonstration plan, proposed testing procedures, recordkeeping requirements, and expected startup of the vapor control system.
- g. Recordkeeping. The owner or operator of a lightering service subject to this section shall keep the records specified in this paragraph in a readily accessible location for at least five years. These records shall be made immediately available to the Department on verbal or written request. For the purposes of this section, the terms “readily accessible location” and “immediately available” may apply to records located on a service vessel.
1. Beginning on the effective date of this section, the owner or operator of a lightering service subject to this section shall keep the following information for each lightering operation.
 - i. The dates and times that the lightering operation began and ended.
 - ii. The lightering location.
 - iii. The name or identification of the service vessel or vessels involved.
 - iv. The name or identification of the ship to be lightered.
 - v. The total volume of crude oil transferred during the lightering operation.
 - vi. The total uncontrolled volume of crude oil transferred during the lightering operation, including all monitoring records, operating logs and calculations made in accordance with paragraph d.1.v. of this section.
 2. Beginning on the effective date of this section or upon the initial startup of each vapor control system, whichever is later, the owner or operator of a lightering service shall keep the following information.
 - i. Vapor tightness documentation for each service vessel used in a lightering operation. The documentation shall include, at a minimum, the information specified in paragraphs g.2.i.A. through g.2.i.G.
 - A. The service vessel name or identification.
 - B. The name and address of the owner or operator of the service vessel.
 - C. The date and location of vapor tightness test.
 - D. The vapor tightness test method used.
 - E. The test results.

- F. The tester's name and signature.
- G. The **certified copy of the service vessel's vapor control system Approval Letter issued by or on behalf of the United States Coast Guard in accordance with 46 CFR 39.10-13 and 46 CFR 31.01-3** may be used to meet the requirements of g.2.i.A through g.2.i.F. for the first year following startup of the vapor control system of a service vessel.
 - ii. Operating and maintenance logs for the vapor control system and monitoring instrumentation **of each service vessel**, including records of any repairs made in accordance with paragraph c.4. of this section.
 - iii. Records of the occurrence and duration of a malfunction of the vapor control system.
 - iv. Records of any corrective action taken, as a result of a malfunction, that **was** inconsistent with the startup, shutdown, and malfunction plan.
 - v. Records or logs of inspections conducted to prevent inadvertent uncontrolled VOC emissions in accordance with paragraph c.3. of this section.
 - vi. Records or logs of leak test inspections conducted in accordance with paragraph c.4. of this section.
 - vii. For existing lightering **services**, records used to determine the lightering **service's** baseline volume.
- 3. Beginning on the effective date of this section or upon the initial startup of each vapor control system, whichever is later, the owner or operator of a lightering **service** shall keep the following additional information for each lightering operation.
 - i. Records identifying whether vapor balancing was or was not conducted.
 - ii. If vapor balancing was not conducted, records identifying the reason that vapor balancing was not attempted.
 - ~~iii. If vapor balancing was conducted, records identifying the total volume of crude oil that was transferred and the uncontrolled volume of crude oil that was transferred during the lightering operation. The owner or operator of the lightering shall determine the uncontrolled volume of crude oil transferred using a method approved by the Department.~~
(Now achieved with paragraph g.1.v. and vi.)
 - iv. If vapor balancing was conducted and there was an uncontrolled volume of crude oil transferred during the lightering operation, records identifying the reasons the lightering operation was not fully controlled.
 - v. If vapor balancing was conducted, records of operating pressures monitored in the vapor control system during the lightering operations.

- h. Emergency lightering operation exemption. The owner or operator of a lightering **service** shall be exempted from the requirements of this section while carrying out emergency lightering operations, except for the requirements of paragraphs h.1. and h.2.
1. The owner or operator of a lightering **service** that carried out emergency lightering operations shall submit a written notification to the Department within 24 hours of the completion of the emergency lightering operations. The notification shall include, at minimum, the following information.
 - i. A brief description of the emergency, which may be limited to the following:
 - A. The name, organization, and telephone number of the person requesting the emergency lightering operation,
 - B. The name and location of ship to be lightered, and
 - C. The circumstances of concern.
 - ii. The name, organization, and telephone number of the person submitting the written notification.
 - iii. The written notification may be submitted to the Department by fax or electronic mail.
 2. The owner or operator of a lightering **service** that carried out emergency lightering operations shall submit a written report to the Department within 30 days following the completion of the emergency lightering operations. The report shall include, at minimum, the following information.
 - i. A brief description of the emergency, which may be limited to the following:
 - A. The name, organization, and telephone number of the person requesting the emergency lightering operation,
 - B. The name and location of ship to be lightered, and
 - C. The circumstances of concern.
 - ii. The names or identifications of the service vessels involved in the emergency lightering operations.
 - iii. The dates and times that the emergency lightering operations started and ended.
 - iv. The total volume of crude oil transferred during the emergency lightering operations.
 - v. A certification by a responsible official as to the truth, accuracy, and completeness of the written report.

- vi. The name and signature of the responsible official certifying the written report.
- i. Reporting requirements.
 1. The owner or operator of a lightering **service** subject to this section shall submit to the Department an initial compliance certification immediately upon initial startup of each vapor control system. The initial compliance notification shall provide, at a minimum, the following information.
 - i. The name, address, and telephone number of the owner or operator of the service vessel.
 - ii. The name or identification of the service vessel.
 - iii. **The certified copy of the service vessel's vapor control system Approval Letter issued by or on behalf of the United States Coast Guard in accordance with 46 CFR 39.10-13 and 46 CFR 31.01-3.**
 2. Reports of excess emissions. The owner or operator of a lightering **service** subject to this section shall, for each occurrence of an excess emission, submit a report to the Department within 30 calendar days of becoming aware of such occurrence. Excess emissions can includes, but are not limited to, failing to operate the vapor control system when practicable, inadvertently or knowingly venting VOCs from the vapor control system to the atmosphere during controlled lightering operations, conducting uncontrolled lightering operations on an Ozone Action Day during prohibited times, exceeding the maximum allowable uncontrolled lightering **volume** percentages in Table 46-1, etc. The report shall contain the following information, in addition to complying with any other reporting requirements required by the Department.
 - i. The name of the owner or operator of the lightering **service**.
 - ii. The name or identification of the service vessel.
 - iii. The date and time of first observation of the excess emission.
 - iv. The cause and duration of the excess emission.
 - v. The corrective actions taken or the schedule to correct the conditions that caused the excess emission.
 - vi. The estimated quantity of excess emission (pounds per lightering operation) and the operating data and calculations used in determining the magnitude of the excess emission.