



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



MELANIE LOYZIM
COMMISSIONER

TESTIMONY OF
JEFF CRAWFORD, BUREAU DIRECTOR OF AIR QUALITY
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

SPEAKING NEITHER FOR NOR AGAINST L.D. 809

**AN ACT TO PROHIBIT THE PURGING OF VOLATILE ORGANIC COMPOUND
GASES FROM OIL TANKERS IN THE WATERS OF MAINE**

SPONSORED BY SEN. MIRAMANT

**BEFORE THE JOINT STANDING COMMITTEE
ON
ENVIRONMENT AND NATURAL RESOURCES**

DATE OF HEARING:

APRIL 7, 2021

Senator Brenner, Representative Tucker, and members of the Committee, I am Jeff Crawford, Director of the Bureau of Air Quality at the Department of Environmental Protection, speaking neither for nor against L.D. 809.

Shipping activities are responsible for significant air emissions, and over the last decade, new federal and international standards for marine vessels and their fuels have led to significant reductions in air emissions. Engines, however, are not the only source of air emissions from shipping, with petroleum products conveyed to fuel marketing

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

terminals and petrochemical industries via ships and barges also accounting for evaporative emissions in some urban coastal areas and inland waterway ports.

Evaporative emissions from marine vessel operations typically result from three processes: loading, ballasting, and transit.

- 1) Loading losses occur as organic vapors in “empty” cargo tanks are displaced to the atmosphere by the liquid being loaded into the tanks and are usually the largest source of evaporative emissions from petroleum vessels. Vessel loading usually only occurs at refineries or at the terminal at the end of the pipeline where the product is loaded for distribution. However, petroleum liquids shipped in “super tankers” may be unloaded to barges or smaller ships in a harbor or bay to allow the larger tanker to enter shallower ports. In this situation called “lightering operations”, vessel loading emissions occur along with ship transit and ballasting emissions.
- 2) Ballasting emissions may occur during ballasting, which is the process of drawing ballast (i.e., water) into a cargo hold. When ballast is loaded into tanks that contain vapors from the preceding cargo, the vapor is displaced and emitted from the vessel. Most ships and barges carrying crude oil and other petroleum products built since 1980 are required by domestic law and international agreement to use segregated ballast tanks, which prevent the possibility of ballast emissions.
- 3) Transit losses are similar to breathing losses associated with petroleum storage. Transit loss is the expulsion of vapor from a vessel compartment through vapor contraction and expansion, which is the result of changes in temperature and barometric pressure.

As I have noted, evaporative emissions from marine vessel operations are significant in ports with large petroleum refineries and distribution operations. The United States

Environmental Protection Agency regulates this activity at larger facilities through its National Emission Standards for Hazardous Air Pollutant (or NESHAPS) program, and some areas with significant air pollution problems like Houston, Texas and Long Beach, California also regulate vessel loading activities and vessel ballasting activities. Maine does not regulate vessel loading operations since our ports are routinely unloading, rather than loading marine vessels. Ballasting is likewise not regulated beyond federal and international requirements in Maine ports.

A fourth source of evaporative emissions is not associated with typical operations but is a result of degassing operations undertaken to remove volatile organic compounds in preparation of cleaning a marine vessel. Some jurisdictions regulate the cleaning and degassing of marine vessels and petroleum bulk storage tanks, requiring the use of add-on emission controls for vessels and tanks carrying volatile products, and the Department is currently developing rules to address this activity.

Thank you for the opportunity for us to provide our comments to you, and I will be happy to answer your questions.