

US EPA ARCHIVE DOCUMENT



16613
February 21, 2011

To: Mr. Donald Dahl
Title V Regional Permits
US EPA Region I
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Boston, MA 02109-3912

Subj: Requirements for Oil-Fired Pilots on Excelerate LNG Carrier Boilers for the Northeast Gateway Deepwater Port Air Permit Modification

Dear Mr. Dahl

In follow-up to the interagency meeting with Excelerate on January 25-26, 2011 and your phone conversation on February 2, 2011 with Mr. Roddy Bachman of my staff, this memo confirms that oil-fired pilots are required on Excelerate's LNG carriers. This is relevant to EPA Region One's processing of Excelerate's request to modify the Northeast Gateway air permit. The applicable regulations that require Excelerate, or any LNG carrier using boil off gas as fuel, to have an oil-fired pilot on main propulsion boilers (or pilot fuel oil on internal combustion engines) are found in Title 46 CFR Part 154. For purposes of this question the relevant sections are:

- 46 CFR §154.705 (c): A gas fired main propulsion boiler or combustion engine must have a fuel oil fired pilot that maintains fuel flow as required under §154.1854 if the gas fuel supply is cut-off.
- 46 CFR §154.1854 (a): If methane (LNG) vapors are used as fuel in the main propulsion system of a vessel, the master shall ensure that the fuel oil fired pilot under §154.705(c) is used when the vessel is on the navigable waters of the United States.¹

In addition to U.S. regulations, the requirement for an oil-fired pilot is included in the International Maritime Organization (IMO) International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) under Chapter 16, Use of Cargo as Fuel, Section 16.5 Special Requirements for Main Boilers:

- 16.5.4: The burner systems should be of dual fuel type, suitable to burn either oil fuel or gas fuel alone or oil and gas fuel simultaneously. Only oil fuel should be used during maneuvering and port operations unless automatic transfer from gas to oil burning is provided, in which case the burning of a combination of oil and gas or gas alone may be permitted provided the system is demonstrated to the satisfaction of the Administration. It should be possible to change over easily and quickly from gas fuel operation to oil fuel operation. Gas nozzles should be fitted in such a way that gas fuel is ignited by the flame of the oil fuel burner [*the oil-fired pilot concept*].

¹ Northeast Gateway deepwater port is located within the territorial sea of United States and vessels operating at the port are "on the navigable waters of the United States."

Classification Societies have included the U.S. regulations and IGC Code requirements in their guides, rules and standards for classing LNG carriers to meet their Certificate of Fitness for the port state and the Coast Guard's Certificate of Compliance to enable delivery to U.S. ports. Examples include the following:

- The American Bureau of Shipping (ABS) Guide for Propulsion Systems for LNG Carriers.
- The American Bureau of Shipping (ABS) Guide for the Design and Installation of Dual Fueled Engines.
- Det Norske Veritas (DNV) Standard for Certification: Gas Burning Internal Combustion Engine Installations

This requirement for dual-fueled propulsion systems with oil pilots on steam turbine boiler burners or pilot oil fuel in internal combustion engines was developed to increase the reliability of vessel propulsion systems using boil-off gas as fuel and to better manage the risks of gas fuel system leaks in shipboard engine rooms. Oil was and still is considered a more dependable fuel supply process than boil off gas and provides a redundant system to maintain propulsion and navigational control in higher risk maneuvering locations such as ports and waterways.

For the Northeast Gateway deepwater port, the Excelerate LNG carriers must operate their steam turbine propulsion systems in a dual-fuel mode using oil pilots to light off the boiler gas burners to remain in compliance with both U.S. and international requirements. Similarly, the Suez Neptune LNG carriers' dual fuel diesel electric internal combustion engines must initially operate using pilot fuel oil before switching solely to boil off gas.

This position was reviewed and agreed upon by U.S. Coast Guard Sector Boston, the U.S. Coast Guard Liquefied Gas Carrier National Center of Expertise, the U.S. Coast Guard Hazardous Materials Standards Division, and the U.S. Coast Guard Deepwater Ports Standards Division. If you have any questions or we can be of further assistance, please do not hesitate to contact Mr. Roddy Bachman, U.S Coast Guard at (202) 372-1451 or Roddy.C.Bachman@uscg.mil.

Sincerely,



M.A. PRESCOTT
Chief, Deepwater Ports Standards Division
U.S. Coast Guard
By direction

cc: Steve Garrity, USCG
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