

Alerts & Publications

PDF



EPA and California Reduce Allowable Emissions from Large Ships

August 28, 2009

In two separate actions, the U.S. Environmental Protection Agency (“EPA”) and the California Air Resources Board (“ARB”) have announced steps to further limit emissions from diesel-powered, ocean-going ships.

CALIFORNIA’S REGULATIONS EFFECTIVE JULY 1, 2009

California’s new regulations require that ocean-going ships switch to fuels with lower sulfur content before coming within 24 nautical miles of the state’s coast. The regulations were originally promulgated in 2008; however, a legal challenge delayed implementation of the regulations. A federal court decision issued in June 2009 has cleared the way for imposition of the new requirements.

Under the regulations, an estimated 2,000 ocean-going vessels, both U.S.-flagged and foreign-flagged, have to use lower-sulfur marine distillates rather than the more polluting heavy-fuel oil (often called bunker fuel) when visiting California ports. The fuel requirements apply to ocean-going vessel main (propulsion) diesel engines, auxiliary diesel engines, and auxiliary boilers. Specifically, Phase I of the regulation requires marine gas oil at or below 1.5% sulfur; or marine diesel oil at or below 0.5% sulfur. Phase II of the program, which begins on January 1, 2012, requires marine gas oil or marine diesel oil at or below 0.1% sulfur. The use of cleaner fuel is expected to yield reductions in air pollutants such as diesel particulate matter, sulfur oxides, and nitrogen oxides.

New Recordkeeping Requirements

Along with the new, low-sulfur fuel requirements comes a new set of recordkeeping requirements. Parties subject to the regulation also must retain and maintain records (in English) for at least three years.

Recordkeeping requirements include:

- (1) The date, local time, and position (longitude and latitude) of the vessel for each entry and departure into and from Regulated California Waters;
- (2) The date, local time, and position (longitude and latitude) of the vessel at the initiation and completion of any fuel-switching procedures;
- (3) The type of fuel used (e.g., marine gas oil, marine diesel oil, or heavy fuel oil) in each auxiliary engine, main engine, and auxiliary boiler operated in Regulated California Waters; and
- (4) The types, amounts, and the actual percent of sulfur content, by weight, of all fuels purchased for use on the vessel, as reported by the fuel supplier or a fuel-testing firm.

Other information and documentation is also required to be kept onboard, including a fuel system diagram that shows all storage, service, and mixing tanks; fuel handling, pumping, and processing equipment; valves; and associated piping. Diagrams or other documentation are to list the fuel tank capacities and locations, and the nominal fuel consumption rate of the machinery at rated power. Documentation of the make, model, rated power, and serial numbers of all main engines, and auxiliary engines is also to be kept on board and available for inspection.

Ship owners and operators are subject to substantial penalties under state law if the required records are not kept as specified in the regulation.[1]

The Federal Court's Decision Regarding the ARB Regulations

The federal court's decision allowing California to proceed with its ocean-going vessel regulations suggests that other states might set emission requirements for vessels involved in international commerce. The shipping industry had objected to this approach, arguing that the federal government and international bodies should establish maritime rules. No further appeals by shipping interests are expected to the California regulations.

It remains to be seen whether other states will follow California's lead in requiring specific fuels within coastal areas, or whether they will undertake different efforts to reduce emissions from ships.

THE EPA'S REGULATORY PROPOSAL

The EPA, on July 1st, has also proposed a rule under the Clean Air Act ("CAA") that will set both engine and fuel standards for U.S.-flagged ships. The fuel standard requires fuel sulfur content to be below 1,000 parts per million within 200 miles of the U.S. coast, starting in 2015.

A related program authorized by International Maritime Organization would limit emissions within 200 miles of the U.S. and Canadian coasts.

EPA Engine Program

The EPA is proposing to revise the CAA engine program to include two additional tiers of oxides of nitrogen (“NOx”) standards for new Category 3 marine diesel engines (compression-ignition marine engines at or above 30 liters per cylinder displacement) installed on vessels flagged or registered in the United States. The proposed near-term Tier 2 standards for newly-built engines would apply beginning in 2011 and would require more efficient engine technologies (including advanced computer controls) resulting in a 15- to 25-percent NOx reduction below the current Tier 1 levels. The proposed long-term Tier 3 standards would apply beginning in 2016 and would require the use of high-efficiency aftertreatment technology, such as selective catalytic reduction, to achieve NOx reductions of 80 percent below the current levels.

In addition to the NOx emission limits, the EPA is proposing standards for emissions of hydrocarbons and carbon monoxide from new Category 3 engines. The EPA is not proposing to set a standard for particulate matter (“PM”) emissions for Category 3 engines. However, it is expected that significant PM emissions reductions will be achieved through the Emission Control Area (“ECA”) fuel sulfur requirements described below.

Finally, the EPA is proposing a change to the diesel fuel program that would prohibit the production and sale of marine fuel oil above 1,000 ppm sulfur for use in the waters within a U.S. ECA and internal U.S. waters and allow for the production and sale of 1,000 ppm sulfur fuel for use in Category 3 marine vessels.[2]

Under a rule which takes effect on August 8th 2009, the U.S. Coast Guard will allow recognized private classification societies to certify compliance with applicable international air pollution control requirements

The ECA Program

The International Convention for the Prevention of Pollution from Ships (“MARPOL”) Annex VI fuel sulfur limits apply to marine fuel oil used by any vessel beginning in January 2009. MARPOL Annex VI contains two sets of fuel sulfur limits, consisting of a global cap on fuel sulfur levels and regional requirements for designated ECAs that set the maximum content of fuel that can be used by vessels while operating in those areas. The United States ratified Annex VI in October 2008, and the requirements became enforceable through the Act to Prevent Pollution from Ships (APPS) in January 2009.

The United States and Canada have agreed to designate thousands of miles of the two countries’ coasts as an ECA. The UN’s International Maritime Organization (“IMO”), is also considering implementation of the proposed ECA, which would result in stringent standards for large ships operating within 200 nautical miles of the coasts of Canada and the United States.

ECA standards require fuel with no more than 1,000 parts per million (ppm)

sulfur beginning in 2015. New ships will have to use advanced emission-control technologies beginning in 2016. This is expected to lead to a 96-percent reduction in sulfur in ships' fuels, as well as a cut in emissions of PM by 85 percent and of NOx by 80 percent.

Shipping and cruise line concerns will need to evaluate retrofits and new installations to accommodate these new and proposed emission limits for main and auxiliary engines and boilers concurrently with greenhouse gas controls which may be proposed by the IMO Marine Environmental Protection Committee after it meets in London later this month. Additional recordkeeping and reporting requirements are likely to be the subject of ship board inspections. Significant penalties can arise from noncompliance with both emission control and recordkeeping requirements.

[1] Owners and operators should refer to the California Code of Regulations at 13 CCR§2299.2 and 17 CCR §93118.2 for the exact regulatory language.

[2] Without this proposed change to EPA's existing diesel-fuel regulations, fuel with a sulfur content of up to 1,000 ppm could be used in category 3 marine vessels, but it could not be legally produced in the U.S. after June 1, 2014.