

January 15, 2013

FACT SHEET

FINAL AMENDMENTS TO THE EMISSION STANDARDS FOR RECIPROCATING INTERNAL COMBUSTION ENGINES

ACTION

- On January 14, 2013, the Environmental Protection Agency finalized amendments to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines (RICE).
- In this rulemaking, EPA addressed several petitions for reconsideration, legal challenges and new technical information submitted by stakeholders, including industry and environmental groups, which were brought to the EPA's attention after publication of the 2010 standards.
- The final amendments will ensure that the standards are cost effective, achievable and protective.
- The final revisions will reduce the capital and annual costs of the original 2010 rules by \$287 million and \$139 million, respectively, while still reducing 2,800 tons per year (tpy) of hazardous air pollutants (HAP); 36,000 tpy of carbon monoxide; 2,800 tpy of particulate matter; 9,600 tpy of nitrogen oxides, and 36,000 tpy of volatile organic compounds.
- Pollutants emitted from diesel engines are known or suspected of causing cancer and other serious health effects including:
 - Aggravation of respiratory and cardiovascular disease
 - Changes in lung function and increased respiratory symptoms
 - Premature death in people with heart or lung disease
 - Neurological, cardiovascular, liver, kidney health effects, and also effects on immune and reproductive systems.
- Stationary engines generate electricity and power equipment at industrial, agricultural, oil and gas production, power generation and other facilities. EPA estimates there are over 1 million of these engines in the U.S., and this rule will apply to some of these engines.
- The final amendments generally apply to the following:
 - engines typically used in sparsely populated areas for oil and gas production
 - engines in remote areas of Alaska
 - engines scheduled to be replaced in the next few years due to state or local requirements, and certain engines installed in 2006
 - engine testing requirements for formaldehyde emissions
 - engines for offshore vessels operating on the Outer Continental Shelf
 - engines used in emergency demand response programs

- CI engines are compression ignition engines that use diesel fuels. SI engines are spark ignition engines that use mainly natural gas and gasoline fuels.
- EPA is also revising the new source performance standards (NSPS) for stationary internal combustion engines (ICE) to ensure consistency with the RICE NESHAP. In particular, specifying how the NSPS standard will apply to emergency engines used for demand response purposes.

AMENDMENTS

Area Source Stationary Spark Ignition Engines Above 500 HP

- These engines are typically natural gas powered engines that are used to power equipment for oil and gas production.
- EPA is replacing numerical emission limits for existing area source stationary spark ignition (SI) 4-stroke engines above 500 horsepower (HP) that are located in populated areas with requirements to install catalytic controls, conduct an initial test and annual performance checks of the catalyst, and equip the engine with a high temperature shutdown device or monitor the catalyst inlet temperature continuously.
 - Populated areas are defined as not being on Department of Transportation (DOT) Class 1 pipeline segments or having more than 5 buildings within 0.25 mile radius of the engine.
- EPA is specifying that existing area source stationary SI 4-stroke engines above 500 HP that are not located in populated areas are subject to management practices.
 - Unpopulated areas are DOT Class 1 pipeline segments or having 5 or fewer buildings within 0.25 mile radius of the engine.

Remote Areas of Alaska

- EPA is expanding the definition of remote areas of Alaska beyond those not on the Federal Aid Highway System.
- This amendment addresses issues unique to Alaska residents who have more energy supply challenges and face harsh weather conditions.

Engines scheduled to be replaced in the next few years due to state or local rules, and certain engines installed in 2006

- EPA is amending the RICE NESHAP to:
 - Allow Tier 1 and Tier 2 certified stationary CI engines, that are scheduled to be replaced due to state or local rules, to meet management practices until January 1, 2015, or 12 years after installation date, but not later than June 1, 2018.
 - Specify that existing stationary area source Tier 3 certified CI engines installed before June 12, 2006, are in compliance with the NESHAP.

Compliance Alternative for Formaldehyde Emissions

- EPA is adding an option for demonstrating the engines can meet the formaldehyde emission standard including:
 - For existing and new SI 4-stroke rich burn (4SRB) non-emergency engines greater than 500 HP located at major sources, showing compliance with the formaldehyde percent reduction standard by demonstrating compliance with a 30 percent reduction of total hydrocarbon emissions.

Stationary CI Engines on Offshore Vessels on the Outer Continental Shelf

- EPA is specifying that existing area source stationary CI non-emergency engines above 300 HP that are on offshore drilling vessels on the Outer Continental Shelf are subject to management practices.

Emergency Engines

- EPA is specifying how NESHAP and NSPS standards will apply to a category of engines called emergency engines.
- Emergency engines may be used to prevent electrical outages and to test and maintain engines for up to a total of 100 hours per year.
- In 2015, emergency engines will be required to use cleaner fuel -- ultra low sulfur diesel (ULSD) -- if they operate, or commit to operate, for more than 15 hours annually as part of blackout and brownout prevention, also known as emergency demand response.
 - Switching to cleaner fuel will reduce emissions of HAP, particulate matter and sulfur dioxide. Our information shows that only a small percentage of emergency engines currently use ULSD fuel. This will result in lower emissions.
- Starting in 2015, entities with 100 horsepower (hp) or larger engines that operate, or commit to operate, for more than 15 hours and up to 100 hours per year for emergency demand response will need to collect and submit an annual report including location, dates and times of operation.
 - Reporting requirements ensure compliance with the regulations and provide information about the air pollution impacts of the engines.
- For a combined total of 100 hours per year, emergency engines can be used for the following purposes:
 - maintenance and testing,
 - emergency demand response for Energy Emergency Alert Level 2 situations,
 - responding to situations when there is at least a 5 percent or more change in voltage, and
 - operating for up to 50 hours to head off potential voltage collapse, or line

overloads, that could result in local or regional power disruption.

- The rules restate that in an emergency, such as hurricane or ice storm, any engine of any size can operate without meeting control requirements or emission limits.
- Emergency engines that commit to run less than 15 hours for emergency demand response can operate without meeting federal control requirements or numeric emission limits.

BENEFITS AND COSTS

- The amendments will reduce the capital and annual costs of the original 2010 rules by \$287 million and \$139 million, respectively. EPA estimates that, with the amendments incorporated, the capital cost of the rules is \$840 million and the annual cost is \$490 million.
- The updated estimated reductions each year starting in 2013 are:
 - 2,800 tons per year (tpy) of HAP,
 - 36,000 tpy of carbon monoxide,
 - 2,800 tpy of particulate matter,
 - 9,600 tpy of nitrogen oxides, and
 - 36,000 tpy of volatile organic compounds.
- EPA estimates the monetized co-benefits of the updated standards to be \$830 million to \$2.1 billion. EPA did not monetize the benefits associated with reducing exposure to air toxics or other air pollutants, ecosystem effects, or visibility impairment.

BACKGROUND

- In 2004, EPA finalized the first regulation for stationary RICE greater than 500 HP located at major sources of HAP. In 2008, EPA finalized regulations for new RICE less than or equal to 500 HP located at major sources and new RICE located at area sources.
- On March 3, 2010, EPA promulgated NESHAP for existing stationary CI RICE that are used at:
 - area sources of air toxics emissions and constructed or reconstructed before June 12, 2006,
 - major sources of air toxics emissions, have a site rating of less than or equal to 500 HP and constructed or reconstructed before June 12, 2006,
 - major sources of air toxics for non-emergency purposes, have a site rating of greater than 500 HP and constructed or reconstructed before December 19, 2002.
- On August 20, 2010, EPA promulgated NESHAP for existing stationary SI RICE that are used at:
 - area sources of air toxics emissions and constructed or reconstructed before June 12, 2006,

- major sources of air toxics emissions, have a site rating of less than or equal to 500 HP and constructed or reconstructed before June 12, 2006.
- After the publication of the final rules in 2010, various stakeholders raised a number of issues through lawsuits, petitions for reconsideration of the final rule and other communications. The stakeholders requested that EPA reconsider requirements for operation of emergency engines, the control and monitoring requirements associated with existing SI engines at area sources, the requirements affecting engines in remote areas of Alaska and provisions related to agricultural engines. EPA granted the petitions, and, to address the issues, is making these amendments.
- EPA proposed amendments on May 22, 2012. A public hearing was held in Washington, D.C. on July 10, 2012, and comment was accepted on the proposed amendments through August 9, 2012. EPA has evaluated the issues raised and has made amendments based on our assessment of the comments provided.

FOR MORE INFORMATION

- The rule is posted at: <http://www.epa.gov/ttn/oarpg/new.html>.
- For more information on how to comply with the rule, please see: <http://www.epa.gov/ttn/atw/rice/ricepg.html>.
- Today's rule and other background information are also available either electronically at <http://www.regulations.gov>, EPA's electronic public docket and comment system, or in hardcopy at the EPA Docket Center's Public Reading Room.
 - The Public Reading Room is located in the EPA Headquarters Library, Room Number 3334 in the EPA West Building, located at 1301 Constitution Ave., NW, Washington, D.C. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding federal holidays.
 - Visitors are required to show photographic identification, pass through a metal detector and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.
 - Materials for this action can be accessed using Docket ID No. EPA-HQ-OAR-2008-0708.
- For further information about the action, contact Melanie King of EPA's Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Energy Strategies Group at (919) 541-2469 or by email at king.melanie@epa.gov.