

FACT SHEET

FINAL PETROLEUM REFINERY SECTOR RISK AND TECHNOLOGY REVIEW AND NEW SOURCE PERFORMANCE STANDARDS OVERVIEW

ACTION

- On September 29, 2015, the Environmental Protection Agency (EPA) issued a final rule that will further control toxic air emissions from petroleum refineries and provide important information about refinery emissions to the public and neighboring communities. This rule will virtually eliminate smoking flare emissions and upset emission events, and for the first time in a national regulation require refineries to monitor emissions at key emission sources within their facilities and around their fencelines.
- These final requirements, when fully implemented in 2018, will reduce toxic emissions from refineries, improve air quality and significantly reduce risk to public health in communities surrounding these facilities.
 - This rule will result in a reduction of 5,200 tons per year of toxic air pollutants, and 50,000 tons per year of volatile organic compounds (VOC).
 - Because communities located near the fence-line of refineries have low income and minority populations at nearly twice the rate as the general population, these vulnerable communities will benefit significantly from the emission reductions achieved by this final rule.
 - Exposure to toxic air pollutants from refineries can cause respiratory problems and other serious health issues, and can increase the risk of developing cancer.
- As part of this rulemaking process, EPA engaged extensively with communities who are affected by refinery emissions. EPA also conducted a demographic analysis to evaluate the potential cancer risks associated with inhalation and air-related exposures to toxic air emissions in different social, demographic, and economic groups within the population living near petroleum refineries in the United States.
 - The emission reductions from this final rule will result in over 1.4 million fewer people being exposed to cancer risks from refineries of more than 1-in-1 million.
 - This represents a 15-20 percent reduction in cancer incidence associated with refinery emissions.
 - 6.1 million people live within three miles of a petroleum refinery.
- EPA is taking significant action to reduce toxic emissions from important emission sources within refineries by:
 - Requiring continuous monitoring of benzene concentrations at the fenceline of refinery facilities to ensure that refineries appropriately manage toxic emissions from fugitive sources such as leaking equipment and wastewater treatment. Requiring corrective action will mean less pollution in neighboring communities.
 - Monitors must encircle the facility to better identify sources of pollution under any wind direction.

- The fenceline monitoring required by this rule is able to detect benzene at very low levels. In addition, in response to what we heard during our extensive public outreach, the rule provides room for alternative monitoring methods that will allow for real time monitoring in the future as technology advances and real time monitoring becomes capable of measuring these lower levels of benzene.
 - If monitored fenceline emissions from the facility exceed the level established in this rule, a refinery will be required to take corrective action.
 - Significantly reduce smoking flare emissions and releases by pressure release devices by requiring a comprehensive program of process changes and pollution prevention measures for these emission sources. This first of its kind national program will require:
 - A minimum of three pollution prevention measures be installed;
 - Continuous monitoring of flares and pressure release devices (PRD);
 - Release events must be analyzed to determine the cause and remedied; and
 - A hard limit of no more than three events in three years per device or flare.
 - Requiring additional emission reductions from storage tanks and delayed coking units at petroleum refineries, some of which had no previous required controls.
 - The final rule also includes technical corrections and clarifications to the 2008 Petroleum Refinery New Source Performance Standards (NSPS). The EPA is finalizing these NSPS edits now in an effort to improve consistency and clarity for sources that are regulated under both the NSPS and Refinery MACT 2.
- The emission reductions from this rule are significant.
 - The final requirements for flaring will result in reductions of 3,900 tons per year of HAP and 33,000 tons per year of VOC.
 - After application of these standards for delayed cokers and storage tanks, the EPA projects that toxic air pollutant emissions, such as benzene, toluene and xylene would be reduced by approximately 1,300 tons per year (tpy) and volatile organic compound emissions would be reduced by approximately 17,000 tpy. Also, as a co-benefit of these final standards, the EPA projects to eliminate emissions of greenhouse gasses equivalent to approximately 660,000 tons per year of CO₂.
- The EPA estimates the capital cost of this final rule to be approximately \$283 million, with an annualized cost of approximately \$63 million. The EPA estimates that these final standards will have a negligible impact on the costs of petroleum products.
- Based on data from EPA's 2011 Information Collection Request, there were 142 major source (large) and 7 area source (small) petroleum refineries operating in 2010 in the United States. This final action applies only to refineries that are considered "major sources."
- This final rule is based on the risk and technology review of two emissions standards already in place at refineries: the National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries (Refinery MACT 1) and the National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (Refinery MACT 2).

BACKGROUND

- The Clean Air Act (CAA) directs the agency to assess the risk remaining (i.e., residual risk) after the application of the maximum achievable control technology (MACT) standards and to promulgate additional standards, if required, to provide an ample margin of safety to protect health or prevent an adverse environmental effect.
- In addition, the CAA requires the agency to review and to revise the MACT, if necessary, taking into account developments in practices, processes and control technologies (i.e., technology review). The CAA requires this review to be conducted eight years following MACT promulgation.
- A major source facility is one that emits or has the potential to emit 10 or more tpy of any single air toxic, or 25 tpy or more of any combination of air toxics.
- To determine the emission limits, the EPA gathered information on petroleum refineries through a comprehensive information collection request, review of previously collected information, current literature, and meetings with and information shared by industry and the industry trade association.
- To examine potential environmental justice issues, the EPA performed a demographic analysis of individuals living near petroleum refineries for different social, demographic and economic groups. Of the population of people most at risk from refinery emissions, about half are minorities (or about twice the percentage of minorities in the general population).
- The EPA did not meet the scheduled review established by the Clean Air Act and on September 27, 2012, the EPA received a mandatory duty lawsuit, filed by several environmental groups, concerning a schedule for the mandatory review of Refinery MACT 1 and 2 standards. The EPA reached a settlement agreement with the litigants. Filed January 13, 2014, in the U.S. Court of Appeals for the District of Columbia Circuit, the consent decree commits the EPA to perform the risk and technology review for Refinery MACT 1 and 2 and to propose by May 15, 2014, and promulgate final standards by April 17, 2015. However, the consent decree was amended to extend the final rule signature date to September 30, 2015. This additional time was needed to accommodate more time for public comment and to allow time to review and analyze the comments submitted on the proposal.

FOR MORE INFORMATION

- Interested parties can download the notice from EPA's website at the following address:
<http://www.epa.gov/airtoxics/petref.html>.
- The final 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 hard copy 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 Avenue, NW, Washington, DC. 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-2010-0682.
- For further information, contact Brenda Shine of the EPA's Office of Air Quality Planning and Standards by phone at (919) 541-3608, or by email at shine.brenda@epa.gov.