FACT SHEET

PROPOSED PETROLEUM REFINERY SECTOR RISK AND TECHNOLOGY REVIEW AND NEW SOURCE PERFORMANCE STANDARDS

ACTION

- On May 15, 2014, the Environmental Protection Agency (EPA) issued a proposed rule that would further control toxic air emissions from petroleum refineries. This proposed 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).

- The EPA is proposing additional emission control requirements for storage tanks, flares and coking units at petroleum refineries. EPA is also proposing to require monitoring of air concentrations at the fenceline of refinery facilities to ensure proposed standards are being met and that neighboring communities are not being exposed to unintended emissions.
  - When fully implemented, the provisions in this rule will result in a reduction of 5600 tons per year of toxic air pollutants, and 52,000 tons per year of volatile organic compounds (VOC).

- For refinery flares, the EPA is proposing to amend the operational requirements for flares to ensure that a high level of combustion efficiency is achieved for the waste gases that continue to go to a flare. The EPA is also proposing MACT controls on delayed coking units.

- This proposed rule would also eliminate exemptions to emission limits during periods of startup, shutdown and malfunction. The proposed rule also includes technical corrections and clarifications to the 2008 Petroleum Refinery New Source Performance Standards (NSPS). The EPA is proposing 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.

- There are currently 142 large (major source) and 7 small (area source) petroleum refineries in the United States. There are 36 small businesses that own petroleum refineries.

- As a result of these proposed changes, refineries would reduce toxic emissions, improving air quality and protecting public health in communities surrounding these facilities.

- Exposure to toxic air pollutants can cause respiratory problems and other serious health issues, and can increase the risk of developing cancer.

- After application of the proposed standards for cokers and storage tanks, the EPA projects that toxic air pollutant emissions, such as benzene, toluene and xylene would be reduced by approximately 1,800 tons per year (tpy) and volatile organic compound emissions would be reduced by approximately 19,000 tpy.

- In addition, the proposed amendments for flaring will result in reductions of 3,800 tons per year of HAP and 33,000 tons per year of VOC. Due to uncertainty in these estimates, the flaring reductions
could be significantly higher.

- Also, as a co-benefit of these proposed standards, the EPA projects to eliminate emissions of approximately 700,000 metric tonnes of CO2 equivalents.

- The EPA estimates the capital cost of this proposed rule to be approximately $240 million, with an annualized cost of approximately $40 million. It is projected that these proposed standards will have a negligible impact on the costs of petroleum products.

- Today’s proposal incorporates findings from two types of analyses, a technology review and a residual risk assessment.

**Technology Review**

- The Clean Air Act requires the EPA to review and revise the national emission standards for air toxics, as necessary, taking into account developments in practices, processes and control technologies since the issuance of the original standards.

- As a result of this review, the EPA identified cost-effective advancements in technologies for these sources at refineries and so is proposing to upgrade storage tank controls and applicability thresholds to require controls on smaller tanks.

- The EPA has also identified advancements in monitoring technologies for detecting fugitive emissions, which are unintended emissions from sources such as equipment leaks and wastewater treatment and handling. As such, the EPA is proposing an annual average benzene concentration standard at the refinery fence line, measured using 2-week integrated samples placed around the refinery fence line perimeter.

**Residual Risk Assessment**

- The Clean Air Act requires the EPA to assess the risk remaining after the requirements of final air toxic standards have been implemented. This is known as a residual risk assessment.

- The residual risk assessment includes the following analyses:
  - estimates of individual source category risk;
  - risk estimates from all air toxics emissions at a facility (“total facility risk”);
  - risk estimates of cumulative source category risks;
  - risk estimates based on the actual emissions reported as emitted; and
  - risk estimates based on emissions allowed by the current air toxics standards.

- The EPA’s risk assessment found that when petroleum refineries fully comply with the current emission standards, the risks are acceptable. The EPA is requesting comment on its proposed determination that risks are acceptable. To provide an ample margin of safety, the EPA is also proposing to upgrade storage tank controls and applicability thresholds to require controls on smaller tanks.
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).

- A major source facility 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).

- On 9/27/12, 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, either updating the MACT standards or finding that such revisions are unnecessary.

HOW TO COMMENT

The EPA will accept comment on the proposal for 60 days after publication in the Federal Register. Comments, identified by Docket ID No. EPA-HQ-OAR-2010-0682, may be submitted by one of the following methods:

- [www.regulations.gov](http://www.regulations.gov): follow the online instructions for submitting comments.
- Email: Comments may be sent by electronic mail (email) to a-and-r-Docket@epa.gov.
- Fax: Fax your comments to: (202) 566-9744.
- Mail: Send your comments to:
  Air and Radiation Docket and Information Center, Environmental Protection Agency, Mail Code: 2822T 1200 Pennsylvania Ave., NW Washington, DC 20460
- Hand Delivery or Courier: Deliver your comments to:
EPA Docket Center
1301 Constitution Ave., NW
Room 3334
Washington, DC  20004

Such deliveries are only accepted during the Docket’s normal hours of operation and special arrangements should be made for deliveries of boxed information.

FOR MORE INFORMATION

• Interested parties can download the notice from EPA's web site at the following address: http://www.epa.gov/ttn/atw/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.