New Jersey Clean Air Council

Air Toxics: How Far Has New Jersey Come in Almost a Quarter Century?

Chemistry Council of New Jersey (CCNJ) Comments

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Overview

1. *Overview of New Air Toxic Regulations that Apply to CCNJ Members Since 2000*
2. *Air Toxic Regulations for the Refining Sector*
3. *Refinery Sector – Nationwide Investment and Emissions Reductions*
4. *Refinery Fence Line Monitoring Program*
5. *New Jersey Air Toxics Health Risk Assessments*
6. *Summary and Recommendations*

Federal Emissions Control Regulations
2000-Present

National Emissions Standards for Hazardous Air Pollutants (NESHAPS)

Sector	Citation	Most Recent Promulgation
Bulk Gasoline Terminals	40 CFR Subpart BBBBBB	2011, Proposed 2022
Synthetic Organic Chemical Manufacturing Industry	40 CFR 63 Subpart F, G, H, I	2006
Miscellaneous Organic Chemical Production and Processes (MON)	40 CFR 63 Subpart FFFF	2022
Petroleum Refineries	40 CFR 63 Subpart CC	2013
Petroleum Refineries	40 CFR 63 Subpart UUU	2005
Polymers & Resins	40 CFR 63 Subpart U, W, OOO, JJJ	2011, 2008, 2018, 2014
Chemical Manufacturing Industry (CMAS)	40 CFR 63 Subpart VVVVVV	2012
Chemical Preparations Industry	40 CFR 63 Subpart BBBBBBB	2009

Federal Emissions Control Regulations
2000-Present

New Source Performance Standards (NSPS)

Sector	Citation	Most Recent Promulgation
Petroleum Refineries Equipment Leaks	40 CFR 60 Subpart GGG-GGGa	2008
Petroleum Refineries	40 CFR 60 Subpart J - Ja	2020
Volatile Organic Liquid Storage Vessels Including Petroleum Storage Vessels	40 CFR 60 Subpart Kb	2021
Bulk Gasoline Terminals	40 CFR 60 Subpart XX	2003, Proposed 2022

Refinery Sector Regulations

- Heavy regulatory tightening of emissions standards since 2000
- As part of CAA Section 112(d)(6) 8-year technology review requirements, in 2012 EPA promulgated NSPS Ja performance requirements for Petroleum Refineries for heaters, flares, and coking units.
- As part of the same CAA (112(f)) requirements, after 8 years of promulgation, the EPA must perform a one-time residual risk review. As part of this review completed in 2015, the EPA promulgated the Refinery Sector Rule (RSR), which included revisions to two NSPS (Subparts J and Ja) and two MACT regulations (Subparts CC and UUU)
  - Benzene Fenceline Monitoring (FLM)
    - Real time results and annual operating expenses
  - Pressure Relief Devices (PRDs) – Monitoring and recordkeeping requirements
  - Flare combustion efficiency – monitoring, measurement, and capital investment
  - Storage Tanks – work practices, capital investments
  - Delayed Coking Units – monitoring, work practices, recordkeeping

DEP's own air toxics monitoring shows a downward trend in ambient benzene concentrations statewide since the early 2000s

Refinery Sector Regulations – Investments in Emission Reductions, Monitoring, and Compliance - Nationwide

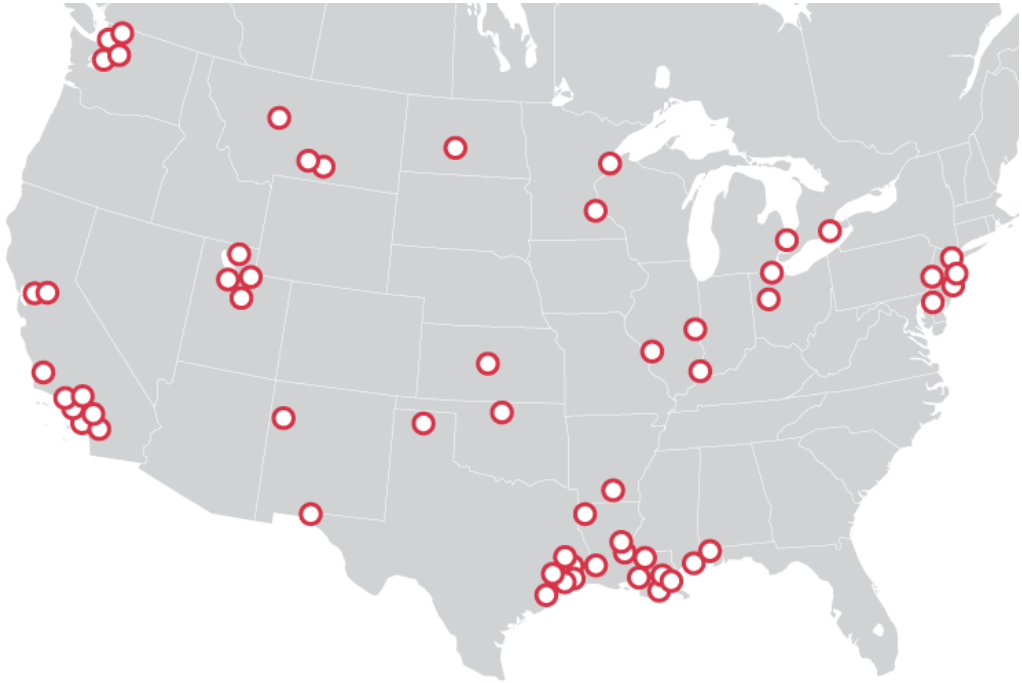
- **NSPS (J – Ja) and NESHAPS (CC and UUU)**
  - Total Capital Investment
    - Storage Vessels - $18.5MM
    - Delayed Coking Units - $81MM
    - FLM - $12.5MM
  - Total Annualized Cost - $13MM
  - **Hazardous Air Pollutant Reductions – 1,323 tons/yr**
  - Costs to Ensure Compliance
    - Relief Device Monitoring: $3.3MM/yr
    - Flare Monitoring: $46.5MM/yr
    - FCCU Testing: $0.4MM/yr
    - **Total: $50.2MM/yr**

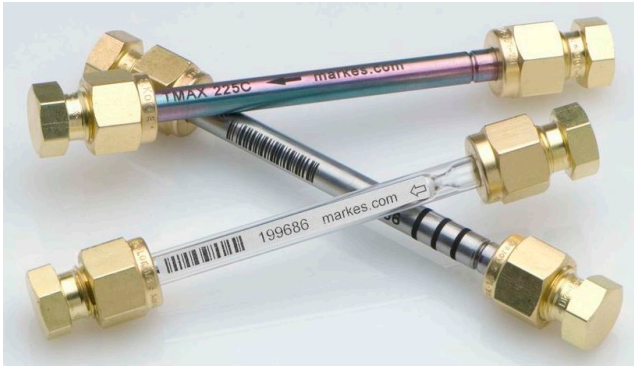
Costs expressed in 2010 USD

Refinery FLM Data

Beyond emissions standards

- Network of passive diffusion samplers surrounding petroleum refineries
- Measures Benzene, but indicative of compliance with other HAPs (e.g., ethylbenzene, toluene)
- Required under the Refinery MACT I (NESHAPS CC) since 2015
- Public has direct access to the most recent data and archives
- Direct link to a site-specific air quality outcome, and a near real time demonstration of the effectiveness of the refinery controlling emissions
- Sources are responsible to investigate benzene concentrations greater than the action level and take timely corrective action





New Jersey Air Toxic Health Risk Assessments

- **NJDEP implements one of the US's most comprehensive air toxic risk assessment programs in the US**
- **The requirements are in addition to applicable federal regulations aimed at reducing air toxic emissions**
- **Purpose of DEP's risk assessment (from DEP Technical Manual 1003):**
  - Evaluate potential air toxics risks remaining (residual health risk), either from individual source operations or from entire facilities, after applicable pollution controls; and
  - Make decisions regarding permitting, control, and/or regulation of air toxics.
- **Applicable to new and existing emission sources**
  - Existing sources: Facility-Wide health risk assessment as part of Title V Air Permit Renewals
- **USEPA approved air quality models (either screening or refined) are the only tool accepted by DEP for use in air toxic risk assessments**
- **Answers the question – do an emission source's permitted emission rates result in safe levels off-site?**

Summary

- Air pollution sources in the chemical and petroleum sectors in the US comply with over 100 federal and state regulations and policies controlling and minimizing air toxic emissions
- The refining sector in particular has invested heavily in emissions reductions and compliance since 2000, including a near real time air toxics monitoring program around every refinery in the US
- DEP's risk assessment process is conservative and on top of the federal regulations, and currently relies solely on one tool for assessment

Recommendations

- DEP should consider the value of the data from FLM programs at both New Jersey refineries, and how these data may be used to supplement health risk assessment in the areas of these facilities, and used as weight of evidence during risk assessment reviews
- DEP should consider frequency of occurrence in evaluating operating scenarios for health risk assessment
- NJ's air toxics ambient concentrations are largely resulting from non-industrial source categories, such as transportation emissions. DEP should carefully consider the increasing costs and decreasing benefits of further air toxics requirements for the industrial community.