



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 10B

Five Point Action Plan to Address Refinery Emissions

**Board of Directors Meeting
June 3, 2015**

**Eric Stevenson
Director of Meteorology, Measurement and Rules**

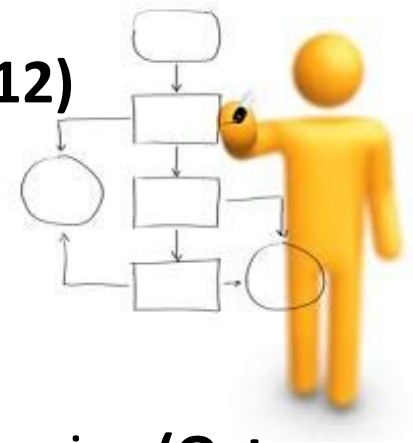
Overview

- Progress to date
- Five Part Action Plan
- Comprehensive Greenhouse Gas (GHG) program
- Comments and responses
- Precedent setting actions
- Next steps



Progress to Date

- Regulatory Concept paper **(2012)**
- Industrial Facility Accidental Releases Work Plan **(2012)**
- Reg 12, Rule 15 development **(2013 to the present)**
- Reg 12, Rule 16 development **(Oct. 2014 to present)**
- Resolution Addressing Emissions from Bay Area Refineries **(Oct. 2014)**
- Refinery Emission Reduction Strategy **(Dec. 2014)**
- Workshops for 12-15 and 12-16 **(Mar. 2015)**



Goals of the Five Part Action Plan

- Address refinery operations/impacts on communities
- Set cap on Toxic Air Contaminants (TACs) and criteria pollutants
- Refinery operation changes will not increase health burden
- Reduce refinery criteria pollutant emissions and health risks by 20%



Five Part Action Plan Elements

- Regulation 12, Rule 15 (12-15)
- Regulation 12, Rule 16 (12-16)
- Permit review for crude oil changes
- Refinery Emission Reduction Strategy Rulemaking
- Refinery Methane Rulemaking



Regulation 12, Rule 15 Elements

- Annual emissions inventories
- Crude oil composition characteristics
- Fence line and community monitoring systems
- Health Risk Assessments (HRAs)
- Total climate change footprint



Regulation12, Rule 15 Elements (new)

- Additional crude oil composition characteristics
- Energy efficiency audit
- Next draft by July



Regulation 12, Rule 16 New Elements

- Risk limit - 25 in 1 million using HRA required in 12-15
 - Future changes will likely incorporate this limit for all Bay Area facilities
- Implement criteria pollutant cap
- Next draft by July



Permit Review for Crude Oil Changes

- Crude slate modifications trigger permitting review
 - Engineering review of criteria pollutants, GHG and/or TACs
- Best Available Control Technology (BACT) for criteria pollutants, GHG and/or TACs
 - New Source Review for all affected systems



Refinery Emissions Reduction Strategy Rulemaking

- 20% criteria pollutant reductions by 2020
 - Includes five specific refinery emission reduction regulations
 - Additional rulemaking is being investigated
- 20% reduction in risk by 2020
 - 12-16 sets total risk at 25 in 1 million
 - 12-15 HRA and additional monitoring requirements will identify sources for further reductions



Refinery Strategy Rules

Title	Pollutant(s)	Amount Reduced	Projected Completion
Rule 9-14: Petroleum Coke Calcining	SO ₂	894 tons/year (tpy)	Fall 2015
Rule 6-5: Fluid Catalytic Cracking Units	Ammonia, PM	TBD	Fall 2015
Rule 8-18: Equipment Leaks	VOC, toxics, methane	1,227 tpy	Winter 2015
Rule 9-1: Sulfur Dioxide from Refineries	SO ₂	926 tpy	Winter 2015
Rule 11-10: Cooling Towers	VOC, toxics, methane	514 tpy	Winter 2015

Total Reductions for 2015: **3,561 tons per year or 23%** of total refinery criteria pollutant emissions.

Additional rulemaking for further reductions planned for 2016.

Refinery Methane Rulemaking

- Limit methane emissions from refineries by:

- Reducing equipment leaks
- Reducing cooling tower emissions
- Provides near-term climate benefits



- Limit emissions of specific sources not subject to Cap and Trade
- Investigate other areas that can provide methane emission reductions

Regulatory Program to Reduce GHG from Stationary Sources

- Incorporate GHG evaluation into permitting program
- Require BACT in New Source Review to limit GHG increases
- Develop regulatory proposals to limit short-lived climate pollutants
- Investigate and pursue areas for additional action to reduce GHG



Comments and Responses



- Suggestion to cap GHG
 - Response:
 - Comprehensive Regulatory Program to Reduce GHG from Stationary Sources
- Suggestion to address impacts “looking forward”
 - Response:
 - Changes to crude slate require permit review
 - Increases in criteria pollutant, GHG or TAC emissions trigger BACT

Comments and Responses (Continued)

- Suggestion to remove exemption for increased throughput
 - Response:
 - Exemption removed
- Cap criteria pollutant emissions
 - Response:
 - Required in 12-16



Precedent Setting Actions

- Fence-line and community monitoring required
- Updated HRA using latest methods
- Caps and reduces criteria pollutants
- Caps overall risk
- Identifies energy efficiency improvement opportunities
- Requires New Source Review for crude slate changes
- Reduces methane emissions from refineries
- Addresses GHG in permit review



Next Steps

- Finalize and bring 12-15 and 12-16 to the Board for consideration as soon as possible
- Finalize and bring new and modified regulations in the Refinery Strategy to the Board for consideration before the end of 2015
- Further develop and enact additional items in the five part action plan