



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

Review of Refinery Emission Reduction Approaches

**Stationary Source Committee
November 24, 2014**

**Greg Nudd
Rule Development Manager**



Background

Board Direction

October 15, 2014 Board Resolution 2014-17 directed staff to:

- Continue the development of Rule 12-15, Refinery Emissions Tracking;
- Prepare companion Rule 12-16, to set emissions thresholds and mitigate potential increases;
- **Develop a strategy to reduce emissions from refineries by 20% or as much as feasible.**



Overview of Evaluation

Refinery Emission Reduction Approaches Evaluated

- Bay Area RECLAIM (Market-based system as used in South Coast)
- Community-Worker Proposal
- Western States Petroleum Association (WSPA) Proposal
- Periodic Technology Review (staff approach)
- Best Available Retrofit Control Technology (BARCT)/Focused toxics (staff approach)

Evaluation Criteria

- Health and Safety Code (H&SC) compliance
- Reduction of health risk from toxics
- Reduction of criteria pollutants
- Process transparency/regulatory certainty
- Implementation speed/complexity
- Reduced impact on neighboring communities
- Net reduction of greenhouse gases (GHGs)



Evaluation Criteria

Health and Safety Code (H&SC) Compliance

1. Necessity – A need exists for the regulation;
2. Cost Effectiveness - The regulation must consider cost effectiveness including an analysis of the incremental cost effectiveness of progressively more stringent possible controls;
3. Nonduplication - The regulation does not impose the same requirements as an existing state or federal.

Reduction of Health Risks from Toxics

Includes consideration of relative toxicity, off-site concentrations, ages and sensitivities of exposed individuals

Reduction of Criteria Pollutants

Includes particulate matter (PM), oxides of nitrogen (NO_x), reactive organic gases (ROG), and sulfur dioxide (SO₂)



Evaluation Criteria cont.

Process Transparency/Regulatory Certainty

Ensures that all stakeholders can fully participate in the rule development process, understand how the rule will be implemented and be able to determine if the rule is working as expected.

Technology Forcing

Will the strategy encourage the development of new control technologies?

Implementation Speed/Complexity

Can the strategy be implemented quickly? Will the implementation require a significant, long-term resource commitment by the Air District?

Reduced Impact on Neighboring Communities

Will the neighborhoods around the refineries benefit from the strategy?

Net Reduction of GHGs

Will this result in an overall reduction in greenhouse gas (GHG) emissions considering all of the GHG regulations in place in California?



Bay Area RECLAIM

South Coast AQMD has a program in place to control NO_x and SO_x from large sources. The program has the following components:

- Market-based system allowing trading of emission credits.
- Multi-sector program including refineries
- 273 active sources in the program
- Sets overall emissions of these pollutants on a declining path.
- Emission credit availability is adjusted periodically to reflect new BARCT determinations.
- Requires extensive monitoring, reporting, recordkeeping.



Community/ Worker

- Identifies pollutants contributing to environmental health hazards PM_{2.5}, NO_x, SO_x, hydrogen sulfide, GHGs, benzene, toluene, xylene, lead, mercury, chromium, arsenic, nickel, vanadium, polycyclic aromatic hydrocarbons
- Defines baseline as three-year average for each pollutant *excluding* exceedances over regulatory/permitted limits
- Requires each refinery to decrease facility-wide emissions of each pollutant by 20% from baseline by 2020.
- If such progress is infeasible, Best Available Control Technology must be applied to all implicated sources

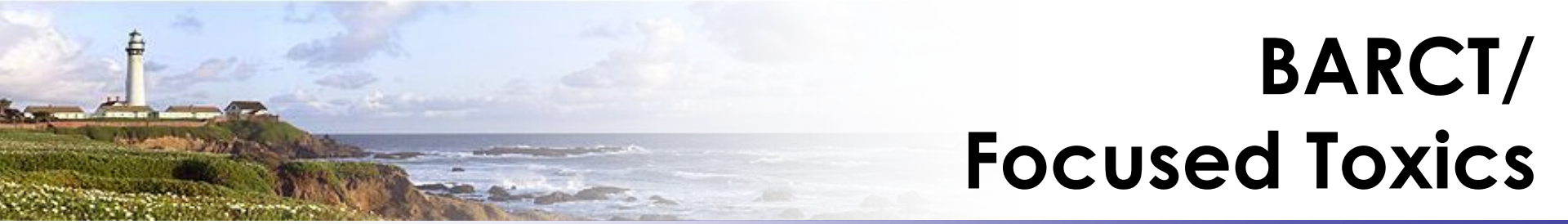
Western States Petroleum Association (WSPA)

- No specific controls proposed
- Regulatory certainty needed for planning investments
- Follow traditional rulemaking process:
 - Identify control strategies in Clean Air Plan
 - Develop source-category-specific rules through usual rulemaking process (BARCT process)



Periodic Control Technology Review

- Review all significant sources for appropriate control technology on a standard schedule (e.g. every 20 years)
- Begin with sources currently exempt from Best Available Control Technology Requirements (i.e. “grandfathered” sources)
- Applies to all significant sources, not just refinery sources



BARCT/ Focused Toxics

Best Available Retrofit Control Technology (BARCT)

- Identify specific source categories that are significant polluters.
- Investigate existing controls for these categories and the potential for additional control.
- Evaluate the feasibility of controls considering technical feasibility, emission reductions, and compliance costs.
- The development of the upcoming Clean Air Plan has resulted in the identification of a series of source-category-specific control measures (e.g. NO_x from turbines, condensable PM from catalytic cracking units).

Focused Toxics

- Adoption of EPA rules from Refinery Risk and Technology Review
- Maximize risk reductions by requiring additional controls on key sources identified in refinery health risk assessments.

Summary of Evaluation

Criteria	Bay Area RECLAIM	Community-Worker	WSPA	Periodic Technology Review	BARCT/ Focused Toxics
H&SC Compliance	Medium	Low	High	Medium	High
Reduction in health risk from toxics	Medium	Medium	Low	Medium	High
Reduction in criteria pollutants	High	High	Medium	High	High
Process transparency	Medium	Low	High	High	High
Technology forcing	High	Medium	Low	Low	Low
Implementation speed/complexity	Low	Medium	Medium	Medium	Medium
Reduced impact on neighboring communities	Low	High	Medium	High	High
Net reduction of GHGs	Low	Low	Low	Low	Low

Recommendations

BARCT Control Measures and Further Study Measures for Key Refinery Sources

Project	Expected Benefits	Status
Reduce SO ₂ from coke calciners	Reduce SO ₂ emissions	Rulemaking underway
PM from Fluid Catalytic Cracking Units	Reduce condensable PM and precursor emissions	Rulemaking underway
Stationary gas turbines	Reduce NO _x emissions from turbines	Draft control measure for 2015 Clean Air Plan (CAP)
Further reduce equipment leaks (tanks, valves, other)	Reduce ROG and toxic emissions	Draft control measure for 2015 CAP
Limit sulfur content of refinery fuel gas	Reduce SO ₂ emissions at some refineries	Draft control measure for 2015 CAP
Further reduce flaring	Reductions in all pollutants	Further study measure for 2015 CAP
Review of SO ₂ emissions from refineries	Determine if substantial SO ₂ reductions are available	Further study measure for 2015 CAP
Further reduce NO _x	Determine if substantial NO _x reductions are available	Further study measure for 2015 CAP



Recommendations

Focused Toxics Reduction

- Provide immediate reduction in Air Toxics by vigorous enforcement of new US EPA rules reducing toxics at refineries (final EPA rule expected in May of 2015).
- Conduct site-wide Health Risk Assessments as proposed in Rule 12-15.
- Identify key drivers of health risk from Health Risk Assessment and reduce emissions from those sources to reduce risk.

Global Goals of Strategy

- Aspire to 20% reduction in criteria pollutants and 20% reduction in health risk by 2020.
- Establish collaborative process with all stakeholders to ensure best practices and continuous improvement in emission reductions.



Next Steps

- Present evaluation and recommended strategy to the Board on December 17, 2014.
- Proceed with development of Regulations 12-15 and 12-16.
- Bring rule amendments to implement the emission reduction strategy through the rule development process as a package in 2015.
- Work with the community and industry to implement the strategy.
- Report progress to the Board at regular intervals.



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AGENDA: 5

Stationary Source Committee Meeting Tesoro Refinery Flaring Activity

November 24, 2014

**Wayne Kino
Director of Compliance and Enforcement**



Outline

- Flare Overview
- Flare Monitoring
- Flare Management
- Tesoro Flare System Overview
- Tesoro Flaring



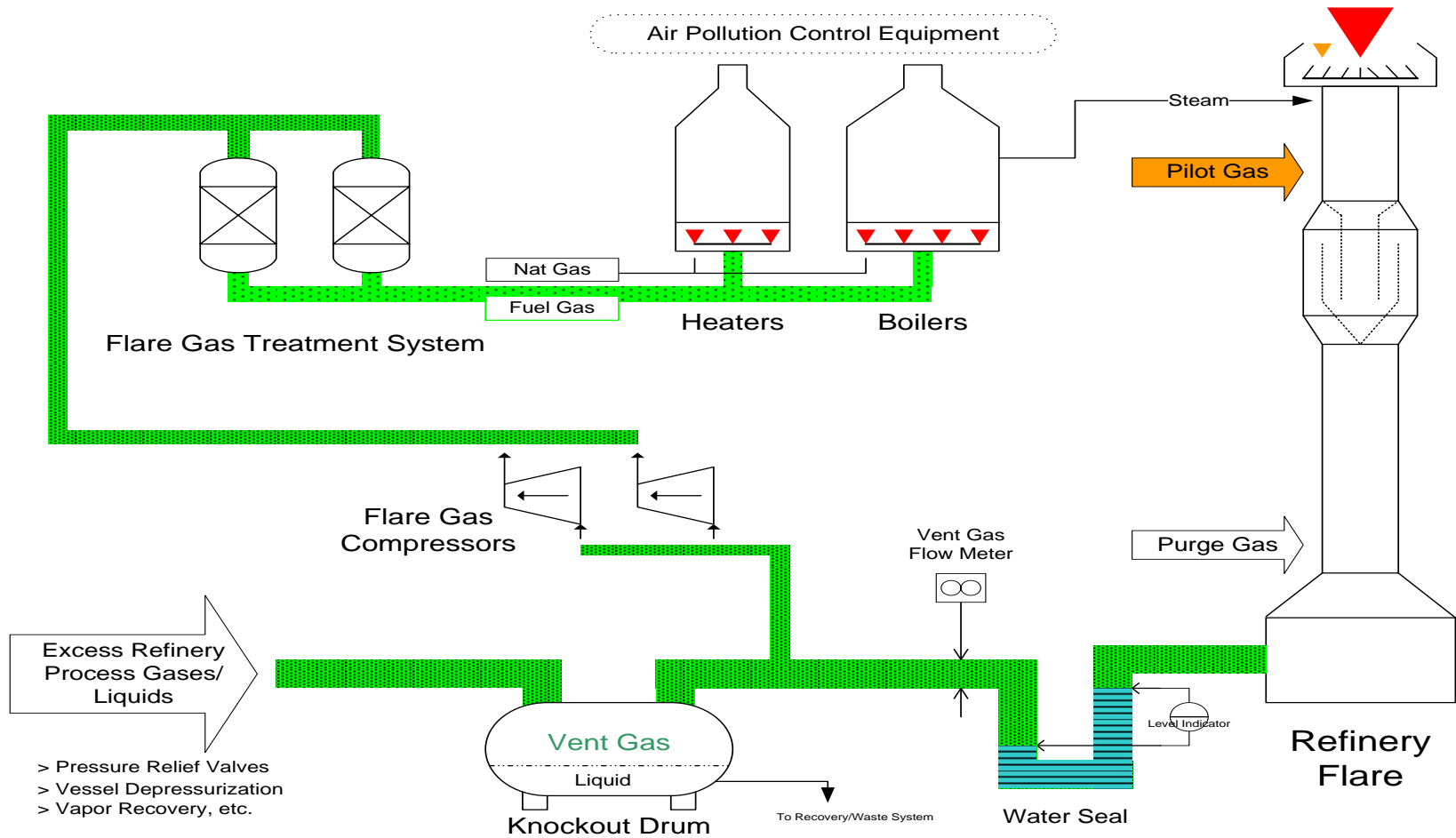
Flare Overview

- **Why Flare?**
 - Gas Quantity
 - Gas Quality
 - Emergency Conditions

- **Flare Gas Flow Characterization**
 - Routine
 - Maintenance
 - Emergency



Typical Flare System



Flare Monitoring

➤ Regulation 12, Rule 11:

- Monitoring
- Sampling
- Video surveillance
- Reporting of Emissions Data





Flare Management

➤ Regulation 12, Rule 12:

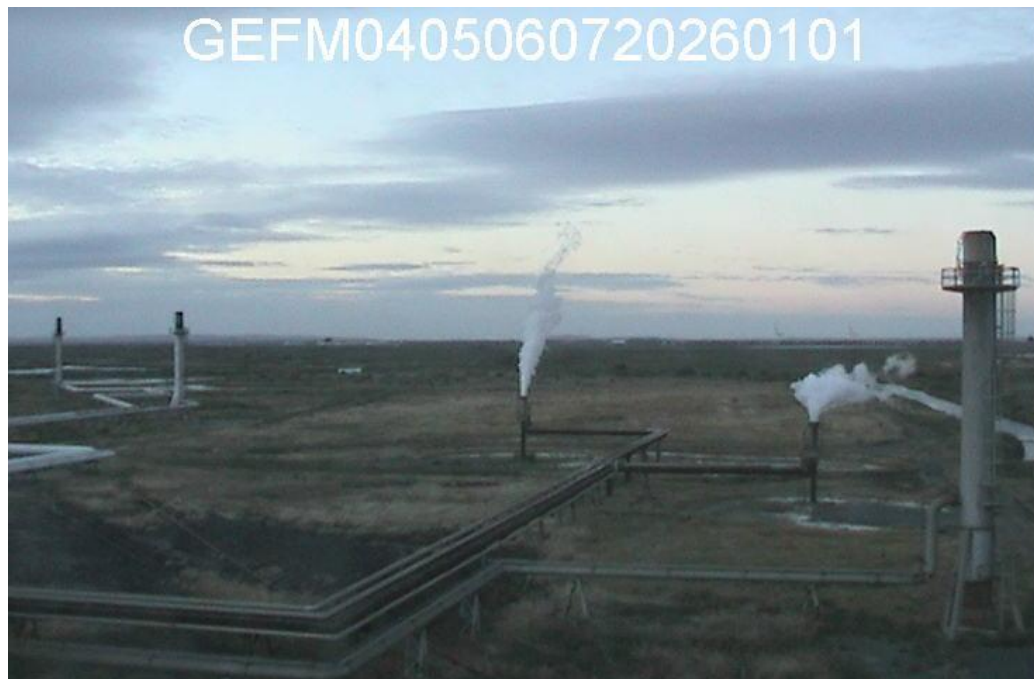
- Flare Minimization
- Notification
- Causal Analysis
- Flare Management Plan Updates



Tesoro Flare System

➤ 6 Flares:

- North Steam
- South Steam
- East Air
- West Air
- Coker
- Emergency





Tesoro Flaring

- **Maintenance/Turnaround**
 - Notifications and Reports
 - Causal Analysis & Prevention
 - Compliance Determination
 - Flare Management Plan Updates

Tesoro Flaring





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DISCRETIONARY PERMITS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

Alexander "Sandy" Crockett
Assistant Counsel

Bay Area Air Quality Management District
Stationary Source Committee Meeting
November 24, 2014



Presentation Outline

What Does It Mean To Be A “Discretionary” Permit Approval Subject To CEQA?

- “Big Picture” Summary
- CEQA Statutory Provisions
- CEQA Guidelines (OPR regulations)
- Court Cases Addressing “Discretionary” vs. “Ministerial” Projects
- Examples from Air District Regulatory Requirements





“Big Picture” Summary

- CEQA Applies To “Discretionary” Projects:
 - Projects where the agency uses its **professional judgment** in determining how the regulations apply to the project and what they require;
 - Projects where **reasonable minds can differ** about how the regulations apply and what they require;
 - Projects where the agency must make **policy decisions about whether the project is a good idea**.
- CEQA Does Not Apply to “Ministerial” projects:
 - Projects where approval is based on **fixed, objective standards** such as numerical emissions limits;
 - Projects where there is **no room for differences in professional opinion** about whether a project complies with the applicable regulations;
 - Projects where the agency does not decide on the **wisdom** or **appropriateness** of the project.





CEQA Statutory Provisions

- CEQA Applies Only To “Discretionary” Projects
- CEQA Does Not Apply to “Ministerial” Projects
 - **CEQA § 21080(b)(1):** (b) “This division does not apply to any of the following activities: (1) Ministerial projects proposed to be carried out or approved by public agencies.”
- ***But CEQA Itself Does Not Define These Terms***





OPR CEQA Guidelines

- Guidelines for implementing CEQA issued by Office of Planning and Research (OPR)
- Set forth in Title 14 of the California Code of Regulations
- Not binding, but highly influential in interpreting CEQA





CEQA Guidelines (cont'd)

CEQA Guidelines Defining “Discretionary”:

- “[R]equires the ***exercise of judgment or deliberation*** when the public agency or body decides to approve or disapprove a particular activity.” (§ 15357)
- “[S]ituations where a governmental agency can use its ***judgment in deciding whether and how to carry out or approve a project.***” (§ 15002(i))





CEQA Guidelines (cont'd)

CEQA Guidelines Defining “Ministerial”:

- Decisions involving:
 - “only the use of ***fixed standards or objective measurements***, and the public official ***cannot use personal, subjective judgment*** in deciding ***whether or how the project should be carried out.***” (§ 15369)
 - “***little or no personal judgment*** by the public official as to the ***wisdom or manner of carrying out the project.***” (§ 15369)
- Situations where:
 - “the law ***requires a governmental agency to act on a project in a set way*** without allowing the agency to use its own judgment.” (§ 15002(i))
 - “the [agency] ***merely has to determine whether there has been conformity with applicable statutes, ordinance, or regulations.***” (§ 15367)
 - The agency “merely ***applies the law to the facts as presented*** but ***uses no special discretion or judgment*** in reaching a decision.” (§ 15369)



Court Decisions

- ***Ministerial*** – Fixed Standards

- 15-foot setback requirements
- 50-foot height limits
- 3-story building size limits

(Friends of Westwood, Inc. v. City of Los Angeles (1987) 191 Cal.App.3d 259.)

- ***Discretionary*** – Open-Ended Standards

- “adequate” water supply
- “satisfactory” sewage disposal
- “sufficient” lighting
- “well-drained and graded” site

(People v. Dept. of Housing & Community Development (1975) 45 Cal.App.3d 185.)



Court Decisions (cont'd)

- “[T]he touchstone is whether the approval process allows the government to shape the project in any way which could respond to any of the concerns which might be identified in an environmental impact report.”

(Friends of Westwood, Inc. v. City of Los Angeles (1987) 191 Cal.App.3d 259, 267.)

- Permit conditions “do not render a project discretionary” (unless the agency can use them to force changes to the project).

(Friends of the Juana Briones House v. City of Palo Alto (2010) 190 Cal.App.4th 286, 309.)



Examples from Air District Regulations

- ***Discretionary:*** Applying “Best Available Control Technology” at a Major Facility

For any new or modified source, the more stringent of:

- The ***most effective*** emission control device or technique ***which has been successfully utilized for the type of equipment*** comprising such a source; or
- The ***most stringent emission limitation achieved*** by an emission control device or technique ***for the type of equipment*** comprising such a source; or
- Any emission control device or technique ***determined*** to be ***technologically feasible*** and ***cost-effective*** by the APCO.

(Air Dist. Reg. 2-2-206; *see also* Air Dist. Reg. 2-2-301.)



Examples from Air District Regulations

- ***Ministerial:*** NO_x Limits for Heat Transfer Operations

A person shall not emit, from any existing heat transfer operation designed for a maximum heat input of 1850 GJ (1.75 billion BTU) per hour or more, nitrogen oxides in excess of

- 175 ppm when gaseous fuel is burned or
- 300 ppm when liquid fuel is burned.

(Air Dist. Reg. 9-3-301.)

