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Draft Rule 9-10: NO_x and CO from Boilers, Steam Generators and Process Heaters in Petroleum Refineries

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**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**



Overview

- Background
- Objective
- Alternative NO_x Standard for Pre-1994 Heaters
- Non-CEMS Monitoring Provisions
- Errata
- Next Steps





Background

- **Rule first adopted in 1994 and fully effective in 2002.**
 - Average NO_x limit for pre-1994 heaters relative to fuel use (0.033 lb NO_x / MM BTU input).
 - Specific NO_x limit for CO boilers (150 ppmv NO_x).
 - Refinery heater NO_x reduced ~65% 1994 through 2002.
- **Rule amended in 2010.**
 - No change to average NO_x limit for pre-1994 heaters.
 - CO boiler NO_x limits reduced effective 2015.
 - Unresolved comments regarding rule disincentives.





Objective

Objective of “Alternate NO_x Compliance Plan” (ANCP):

Provide additional flexibility in achieving emission reduction goals of Reg 9-10 while minimizing cost-of-compliance.

- New heaters subject to BACT and offset requirements that are more stringent than Reg 9-10 requirements.
- ANCP allows replacement of pre-1994 heaters without triggering additional NO_x controls on pre-1994 heaters.





Proposed Alternative NO_x Standard

Elements of “Alternate NO_x Compliance Plan”

Voluntary alternative to 0.033 lb/MM BTU limit in 9-10-301.

- ANCP replaces limit on NO_x emission relative to fuel use with a NO_x mass cap based on recent, actual emissions.
- Applies to same heaters currently subject to 9-10-301 with same exemptions.
- Once elected, refinery must remain subject to ANCP.



A photograph of a white lighthouse with a black top, situated on a grassy cliff overlooking the ocean. The sky is blue with some clouds.

Proposed Alternative NO_x Standard - continued

Elements of “Alternate NO_x Compliance Plan”

Value of mass cap is sum of baseline emissions for each pre-1994 heater, expressed as a daily limit.

- Baseline emissions are calculated using “banking” procedure in Reg 2, Rule 2 (most recent 3-year period), with resulting annual average emission divided by 365.
- Value of mass cap is reduced whenever a heater that contributed to the cap is no longer subject to Reg 9-10 (reduction is equal to original contribution to cap).





Proposed Alternative NO_x Standard - continued

Elements of “Alternate NO_x Compliance Plan”

- If IERCs used to comply with 9-10-301 during baseline period OR if approved project requires NO_x controls on pre-1994 heaters, mass cap is reduced by amount of IERCs applied or NO_x controls required (ton/yr).
 - ERCs may be surrendered to mitigate this reduction at 1.15 to 1.0 ratio.
- All heaters subject to ANCP must have a CEMS within 18 months of ANCP approval.



Non-CEMS Monitoring Provisions

- Reg 9-10 heaters not equipped with Continuous Emissions Monitoring Systems (CEMS) are subject to some monitoring requirements in Reg 9-10 and others in their permit conditions, and these are inconsistent.
 - Reg 9-10 defines curtailed operation, which uses simplified monitoring, at $\leq 30\%$ of max firing rate, excluding startup and shutdown, while most permit conditions use $\leq 20\%$.
 - Reg 9-10 and permit conditions have different time limitations on the use curtailment monitoring.

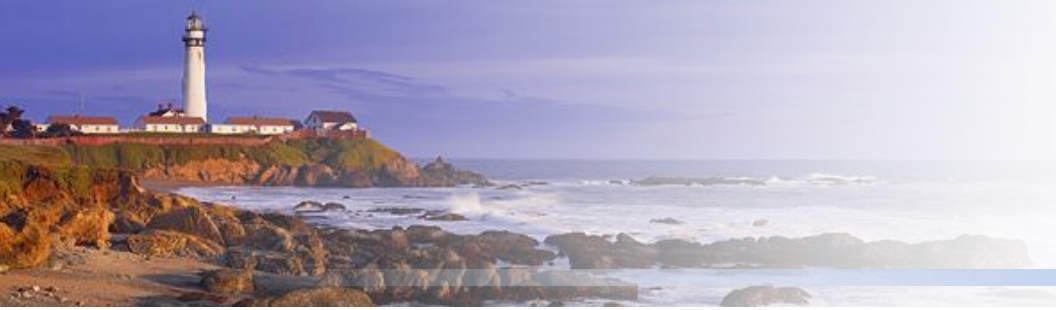


Non-CEMS Monitoring Provisions (continued)

Proposal includes two options for a curtailment definition:

- Option 1: Retain $\leq 30\%$ criteria, but require either conventional burner emission factor or other, approved conservative emission factor.
- Option 2: Definition reverts to $\leq 20\%$ criteria included in most Title V permits, with 5 consecutive-day and 60 day per calendar year limitations.





Errata

- **Section 9-10-204: Definition of CO Boiler.**

Underline marks in this section are in error; this section is unchanged.

- **Section 9-10-308.1.2: Adjustment of NOx mass cap.**

Reduction of NOx mass cap required for project that would require NOx controls to comply with 9-10-301:

9-10-308.1.2 At a refinery with an [A/C], if the actions permitted in the [A/C] would require additional NOx IERC credits or additional NOx controls to comply with Section 9-10-301...





Next Steps

- Submit comments by January 11, 2013.
- Meetings as requested by interested parties.
- Revision of proposal
 - Final Proposal
 - Staff Report
 - Socioeconomic & CEQA analyses
- Public Hearing 1st quarter 2013





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