PUBLIC WORKSHOP

PROPOSED RULE 1159.1 – CONTROL OF NOx EMISSIONS FROM NITRIC ACID TANKS

South Coast AQMD

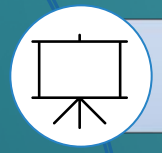
September 29, 2022

1:00 PM

Zoom webinar link:
https://scaqmd.zoom.us/j/94713262524
Join via teleconference:
Dial-in Number: +1 669 900 6833
Zoom Webinar ID: 947 1326 2524

Agenda

Proposed Rule 1159.1 Background



BARCT Assessment

Preliminary Draft Rule Language

NOx Emissions and Emission Reductions

CEQA & Socioeconomic Impacts of PR 1159.1

Next Steps

PROPOSED RULE 1159.1 BACKGROUND

Background

- 2016 Air Quality Management Plan
  - 5 tons per day NOx reduction to be achieved with Best Available Retrofit Control Technology (BARCT) by 2025
  - Transitioning RECLAIM to command-and-control
- 2017 – Assembly Bill 617
  - Applicable to facilities in the state greenhouse cap and trade program
  - Requires expedited BARCT implementation by December 31, 2023
- Proposed Rule 1159.1 (PR 1159.1) would address NOx emissions from nitric acid tanks (non-combustion)

Equipment*	Rule	Status
Boilers	1146.2	√
Flares	1118.1	√
Gas Turbines	1134	√
Gaseous Liquid Fuel Engines	1110.2	√
Food Ovens	PAR 1153.1	Underway
Metal Melting and Heating Furnaces	1147.2	√
Miscellaneous Combustion Sources	1147	√
Nitric Acid Tanks	PR 1159.1	Underway

*not a comprehensive list

Applicability

- Facilities with nitric acid tank(s): equipment containing nitric acid where nitric acid either reacts with a metal or decomposes at high temperatures

Typical operations

Metal finishing

Treating metal surfaces (e.g., cleaning and chemical milling) to obtain desired characteristics

Precious metal reclamation

Recovering valuable metals from scraps

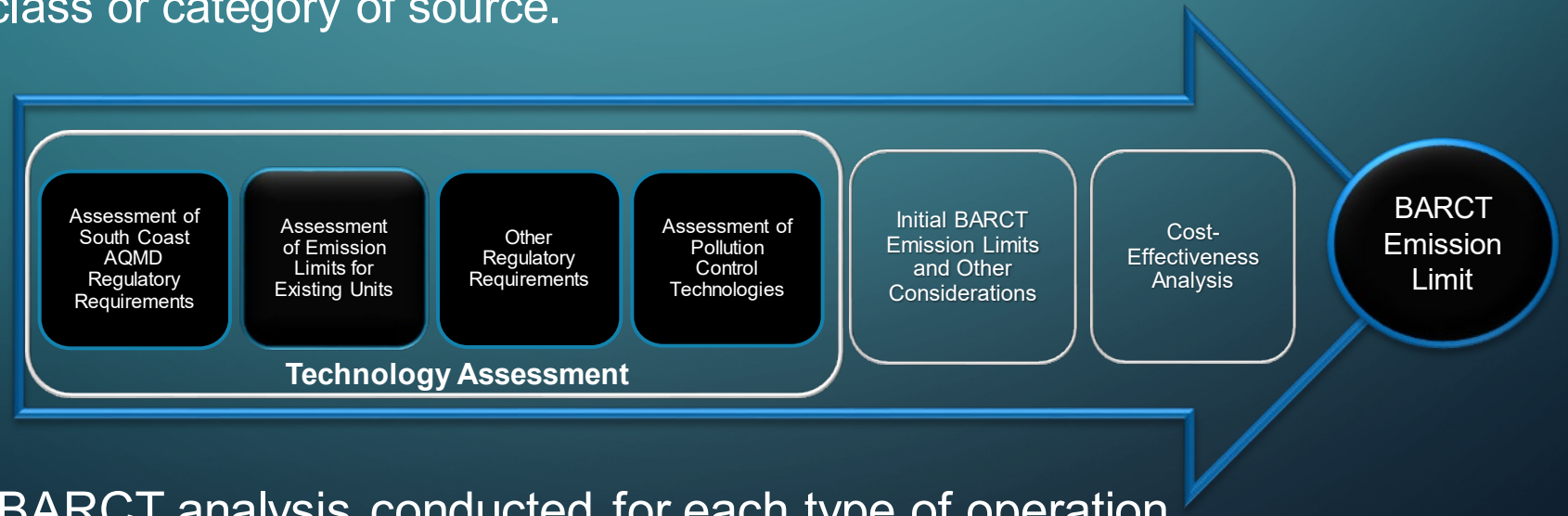
Expandable graphite foil production

Producing graphite products from raw graphite flakes

BARCT ASSESSMENT

BARCT Analysis – Background

- Best Available Retrofit Control Technology (BARCT) analysis required when establishing emission limits
- California Health and Safety Code Section 40406 defines BARCT as:
  - "…an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source."



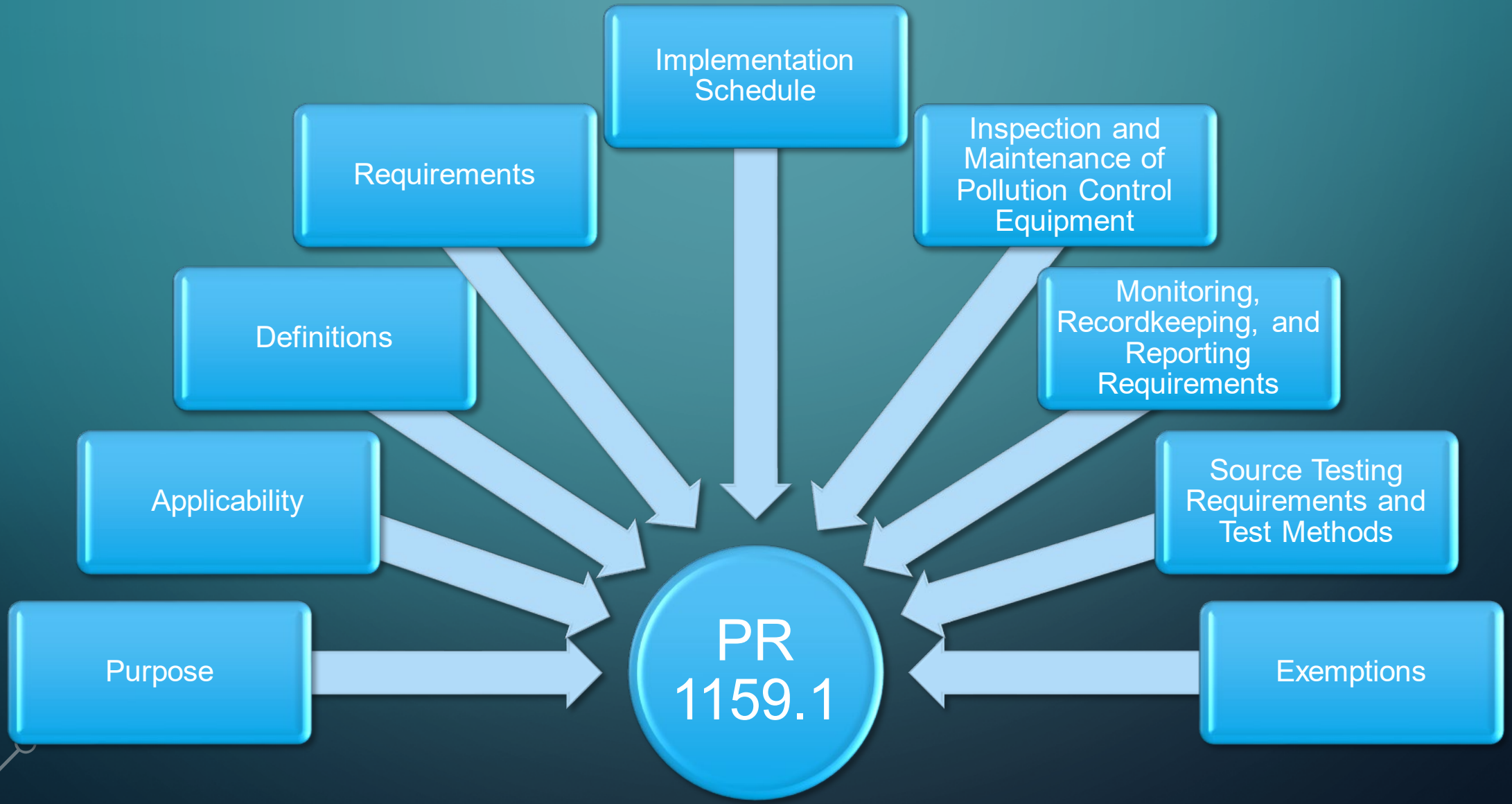
BARCT analysis conducted for each type of operation

BARCT Assessment Summary

	South Coast AQMD Regulatory Requirements	Existing Units (Source Tests)	Other Regulatory Requirements	Technology Assessment	Initial BARCT Emission Limit	Final BARCT Emission Limit Considering Cost Effectiveness	
Metal Finishing	<u>BACT</u> Packed Chemical Scrubber	0.29 lb/hr 44% Control Efficiency (CE)	None	Multi-stage scrubber (99% CE)	0.005 lb/hr	0.3 lb/hr	Alternative Compliance Option of 99% CE
		0.23 lb/hr 97% CE			0.08 lb/hr	0.3 lb/hr	
Precious Metal Reclamation	<u>BACT</u> 3-Stage NOx Reduction Scrubber	0.26 lb/hr 99% CE			0.3 lb/hr	0.3 lb/hr	
Expanded Graphite Foil Production	None	0.26 lb/hr Multi-stage scrubber		Multi-stage scrubber (99% CE)	0.3 lb/hr	0.3 lb/hr	

PRELIMINARY DRAFT RULE LANGUAGE

PR 1159.1 Structure



Purpose (a)

The purpose of this rule is to reduce emissions of Nitrogen Oxide (NOx) from the chemical reaction of nitric acid with metals or decomposition of nitric acid at high temperatures.

- PR 1159.1 includes a subdivision to state the purpose of the rule

Applicability (b)

This rule applies to an owner or operator of a facility with Nitric Acid Unit(s) used in operations including but not limited to Metal Finishing, Precious Metal Reclamation, or Expanded Graphite Foil Production.

- Specifies equipment subject to PR 1159.1
  - Nitric Acid Units
  - Typical operations using nitric acid units subject to rule

Definitions (c)

(2) EXPANDED GRAPHITE FOIL PRODUCTION means the production of graphite products from raw graphite flakes.

(3) METAL FINISHING means the treatment of metal surfaces to obtain desired characteristics using open process tanks.

(8) PRECIOUS METAL RECLAMATION means the recovery of valuable metals from scraps.

(10) RECYCLE means the reuse of solution containing nitric acid taken from a Nitric Acid Unit.

(11) REPLENISHMENT means the volume of nitric acid added to a Nitric Acid Unit.

(12) REPLENISHMENT ADJUSTMENT means the volume of new nitric acid added to a Nitric Acid Unit that replaces nitric acid that is evaporated, or disposed of, in part or whole, and is not Recycled at the facility.

- Includes definitions for the different operations that typically would be subject to PR 1159.1
- Includes definitions related to nitric acid recordkeeping for low-use exemption

Definitions (c) *(continued)*

(1) AIR POLLUTION CONTROL DEVICE (APCD) means equipment installed for the purpose of collecting and reducing emissions from a Nitric Acid Unit(s).

(2) EMISSIONS OF NOx means the sum of nitric oxides and nitrogen dioxides emitted, calculated as nitrogen dioxide.

(5) NEW AIR POLLUTION CONTROL DEVICE (New APCD) means an APCD installed, relocated, modified or replaced after [Date of Rule Adoption]

(6) NITRIC ACID UNIT means tank, reactor, vessel, or other container containing nitric acid (HNO_3) where nitric acid either reacts with a metal or decomposes at high temperatures. A Nitric Acid Unit does not include a container used exclusively to store nitric acid or a Rinse Tank.

(7) OPERATING PARAMETER VALUE means a minimum or maximum value established to monitor the proper operation of an Air Pollution Control Device.

(9) PROCESS LINE means a series of tanks, including Nitric Acid Units, necessary to conduct a specific process at the facility.

(13) RINSE TANK means any tank where a part is partially or fully submerged into a liquid to remove any residual solution from a Nitric Acid Unit.

- Includes definition for equipment subject to the rule
  - Nitric Acid Units
- Includes definition of Air Pollution Control Device (APCD)
- Process Lines are operations with multiple tanks
- Rinse Tanks may have residual nitric acid but are excluded

Requirements (d)

(1) An owner or operator of a Nitric Acid Unit(s) shall not operate a Nitric Acid Unit(s) unless it is equipped with an Air Pollution Control Device (APCD).

(A) The APCD shall meet either:

(i) A NOx emission limit of 0.30 pounds per hour (lb/hr), as demonstrated pursuant to subdivision (h); or

(ii) A NOx control efficiency of 99%, as demonstrated pursuant to subdivision (h).

(B) The APCD shall meet the requirements of subparagraph (d)(1)(A) pursuant to the implementation schedule in subdivision (e).

(2) Beginning June 1, 2023, an owner or operator of a Nitric Acid Unit shall maintain clear labeling on each Nitric Acid Unit with the South Coast AQMD tank number or other identifier, South Coast AQMD permit number, and maximum nitric acid concentration by weight.

<u>For non-exempt units</u>

- Specifies NOx control (APCD) requirements:
  - NOx emission limit:
    - 0.30 lb/hr; <u>or</u>
  - NOx control efficiency
    - 99%
- Implementation schedule in subdivision (e)
- Labeling requirements
  - Label tanks with tank operational information
  - June 1, 2023 start date to allow facilities time to implement provision

Requirements (d) *(continued)*

(3) Air Pollution Control Device

(A) An owner or operator of a Nitric Acid Unit shall not remove or render inoperable an APCD subject to requirements of subparagraph (d)(1)(A) unless it is replaced by an APCD that meets the requirements of subparagraph (d)(1)(A).

(B) Beginning June 1, 2023, an owner or operator of an APCD subject to the requirements of subparagraph (d)(1)(A) shall maintain clear labeling on the gauges of the APCD for the following Operating Parameter Values, if listed on the permit:

(i) Flowrate of scrubber solution;

(ii) pH of the scrubber solution;

(iii) Oxidation Reduction Potential meter reading of the scrubber solution; and

(iv) Pressure drop across stage(s) of the scrubber system.

(C) Beginning June 1, 2023, an owner or operator of an APCD subject to the requirements of subparagraph (d)(1)(A) shall not operate a Nitric Acid Unit unless all visible emissions are collected by the APCD.

<u>For non-exempt units</u>

- Provisions to ensure that APCDs are operating properly to capture and control NOx emissions

Implementation Schedule (e)

(1) Nitric Acid Units Equipped with an APCD in Operation on or before [Date of Adoption]

No later than March 1, 2023, an owner or operator of a Nitric Acid Unit(s) equipped with an APCD in operation on or before [Date of Adoption] shall submit a source test protocol that meets the requirements of paragraph (h)(1) to the Executive Officer. No later than 120 days after written approval of the source test protocol by the Executive Officer, the owner or operator shall conduct the source test according to the approved source test protocol and no later than December 31, 2023, demonstrate compliance with the requirements of subparagraph (d)(1)(A).

- (e)(1) specifies timeline for non-exempt units with existing APCDs to meet emission limits
  - Considering removing December 31st deadline
- Source test protocols must be approved by South Coast AQMD before conducting source test to demonstrate meeting emission limits

Implementation Schedule (e)

(2) New APCDs

No later than 60 days after completion of construction of an APCD, an owner or operator shall submit a source test protocol that meets the requirements of paragraph (h)(1) to the Executive Officer. No later than 120 days after written approval of the source test protocol by the Executive Officer, the owner or operator shall conduct a source test according to the approved source test protocol and no later than 270 days after completion of construction, demonstrate compliance with the requirements of subparagraph (d)(1)(A).

- (e)(2) specifies timeline for new APCDs to meet emission limits
  - Considering removing 270-day deadline
- Monthly recordkeeping of Replenishments allows facility to anticipate increases that would trigger control requirements before unit loses exemption status

Implementation Schedule (e) *(continued)*

(3) Exceedance of Per Nitric Acid Unit or Reduced Per Nitric Acid Unit Threshold

A Nitric Acid Unit that exceeds the applicable Per Nitric Acid Unit or Reduced Per Nitric Acid Unit Threshold in Table A after June 1, 2023, where the owner or operator has not submitted a permit application(s) for the APCD(s) for the Nitric Acid Unit(s) that exceeded the applicable low-use threshold, will not constitute a violation of the requirements of subparagraph (d)(1)(A) provided that the owner or operator of such unit:

(A) No later than 120 days from the last day of the month the Nitric Acid Unit(s) exceeded the applicable low-use threshold, submits a permit application(s) to the South Coast AQMD for an APCD(s) that meets requirements of subparagraph (d)(1)(A) for the Nitric Acid Unit(s) that exceeded the low-use threshold, and all Nitric Acid Units located in the same Process Line(s) as the Nitric Acid Unit(s) that exceeded the low-use threshold if applicable;

(B) Completes the construction of the APCD(s) no later than the permit expiration date, including any written extension(s) issued pursuant to Rule 205; and

(C) Complies with the requirements in paragraph (e)(2).

For units exceeding Per Unit Threshold

- Specifies timeline to demonstrate compliance with emission limits when individual unit exceeds low-use threshold
- Control units in same Process Line
- Would not take effect until June 1, 2023 to allow facilities to better understand their nitric acid usage

Implementation Schedule (e) *(continued)*

(4) Exceedance of the Facility-Wide or Reduced Facility-Wide Threshold

Nitric Acid Units that exceed the applicable Facility-Wide or Reduced Facility-Wide Threshold in Table A after June 1, 2023, where the owner or operator has not submitted a permit application(s) for an APCD(s) for the Nitric Acid Unit that exceeded the applicable low-use threshold, will not constitute a violation of the requirements of subparagraph (d)(1)(A) provided that the owner or operator of such units:

(A) No later than 120 days from the last day of the month the Nitric Acid Units exceeded the Facility-Wide Threshold or the Reduced Facility-Wide Threshold in Table A, submits a permit application(s) to the South Coast AQMD for an APCD(s) that meets the requirements of subparagraph (d)(1)(A) for all Nitric Acid Units at the facility.

(B) Completes the construction of the APCD(s) no later than the permit expiration date, including any written extension(s) issued pursuant to Rule 205; and

(C) Complies with requirements in paragraph (e)(2).

<u>For units exceeding Facility-Wide Threshold</u>

- Specifies timeline to demonstrate compliance with emission limits when units exceeds <u>facility-wide</u> low-use threshold
- Control all units at facility
- Would not take effect until June 1, 2023 to allow facilities to better understand their nitric acid usage

Implementation Schedule Option to Exclude Units (e)(5)

(5) An owner or operator of a Nitric Acid Unit(s) subject to the requirements of subparagraph (e)(3)(A) for an exceedance of the Per Nitric Acid Threshold or subparagraph (e)(4)(A) for an exceedance of the Facility-Wide Threshold may elect to exclude Nitric Acid Unit(s) from the requirements of (e)(3)(A) or (e)(4)(A) as specified in subparagraphs (e)(5)(A) or (e)(5)(B), respectively.

(A) An owner or operator of a Nitric Acid Unit(s) that exceeded the Per-Nitric Acid Unit Threshold may exclude the Nitric Acid Unit(s) from the requirements of subparagraph (e)(3)(A) with monthly Replenishments less than the applicable Reduced Per Nitric Acid Unit Threshold for the month the exceedance occurred, provided that the Nitric Acid Unit(s) that is excluded then complies with the applicable Reduced Per Nitric Acid Unit Threshold in Table A.

(B) An owner or operator of Nitric Acid Units that exceeded the Facility-Wide Threshold may exclude the Nitric Acid Unit(s) from the requirements of subparagraph (e)(4)(A) with monthly Replenishments, that when totaled together, are less than the applicable Reduced Facility-Wide Threshold in Table A for the month the exceedance occurred, provided that the Nitric Acid Unit(s) that is excluded then complies with the applicable Reduced Facility-Wide Threshold in Table A.

- Option to exclude certain units from controls after a threshold exceedance
  - Per unit - (e)(3)
  - Facility-wide - (e)(4)
- Excluded units would be limited to lower nitric acid use
  - Reduced Per Unit Threshold
  - Reduced Facility-Wide Threshold

Implementation Schedule Source Test Alternative (e)(6)

(6) Source Testing Alternative to Installation of New APCD

For each exceedance of the applicable low-use threshold in Table A, in lieu of complying with the requirements in paragraphs (e)(3) or (e)(4), an owner or operator of a Nitric Acid Unit(s) equipped with an APCD shall comply with subparagraphs (e)(6)(A)-(D). The Source Testing Alternative provided in this paragraph that is used in lieu of paragraph (e)(4) shall only be allowed provided that the Replenishments for the Nitric Acid Unit(s) not equipped with an APCD total less than the applicable Facility-Wide Threshold for the month that the exceedance occurred.

(A) No later than 90 days from last day of the month the Nitric Acid Unit(s) exceeded the applicable low-use threshold, submit a source test protocol that meets the requirements of paragraph (h)(1) to the Executive Officer;

(B) No later than 90 days after written approval of the source test protocol by the Executive Officer, the owner or operator shall conduct the source test according to the approved source test protocol; and

(C) No later than 270 days from the last day of the month the Nitric Acid Unit(s) exceeded the applicable low-use threshold, demonstrate compliance with the requirements of subparagraph (d)(1)(A).

Alternative option to controls when exceedance occurs

- Provision allows units already equipped with controls to source test
- Upon demonstration of meeting emission limit
  - Units compliant with (d)(1)(A)
  - Replenishments from those units excluded for determining usage for low-use exemption

Implementation Schedule Failed Source Test for (e)(6)

(D) If the source test fails to demonstrate compliance with requirements of subparagraph (d)(1)(A), the owner or operator shall submit a permit application(s) to the South Coast AQMD for an APCD(s) that meets the requirements of subparagraph (d)(1)(A) no later than 270 days from either receiving a source test report where the APCD did not comply with the requirements of subparagraph (d)(1)(A) or receiving written notification electronically distributed by the Executive Officer that the source test report submitted is not acceptable or does not demonstrate compliance with the requirements of subparagraph (d)(1)(A).

Procedure and timeline when APCD fails to demonstrate compliance with emission limits with Source Testing Alternative in (e)(6)

- Submit permit applications for APCD that would meet emission limits in (d)(1)(A)

Inspection and Maintenance of APCD (f)

(f) Inspection and Maintenance of Air Pollution Control Device

(1) An owner or operator of a facility with a Nitric Acid Unit equipped with an APCD shall conduct visual inspections for leaks and malfunctions on the APCD per the manufacturer's recommended schedule or at least once every quarter, whichever is more frequent.

(2) An owner or operator of a facility with a Nitric Acid Unit equipped with an APCD shall maintain and operate the APCD in accordance with manufacturer's specifications and recommendations.

- Specifies inspection and maintenance requirements to ensure APCD is operating properly to reduce NOx emissions

Monitoring, Recordkeeping, and Reporting (g)

(1) Air Pollution Control Devices

Beginning January 1, 2023, an owner or operator of an APCD subject to the requirements of subdivision (d)(1)(A) shall monitor and record the following Operational Parameter Values, on a weekly basis for weeks the APCD is in operation:

(A) Flowrate of scrubber solution;

(B) pH of the scrubber solution;

(C) Oxidation Reduction Potential meter reading of the scrubber solution, if equipped; and

(D) Pressure drop across each stage of the scrubber system.

(2) Nitric Acid Units

Beginning January 1, 2023 and ending December 31, 2024, an owner or operator of a Nitric Acid Unit that is not exempt pursuant to subdivision (i), and beginning January 1, 2023 an owner or operator of a Nitric Acid Unit that is exempt pursuant to subdivision (i), shall:

(A) Record all Replenishments and nitric acid concentrations (in percent by weight (WT%)) for each Nitric Acid Unit;

(B) Record all Replenishments Adjustments, nitric acid concentrations (in WT%), and calculations for each Nitric Acid Unit; and

(C) Determine total monthly Replenishments (in gallons) and highest nitric acid concentration (in WT%) used, for each Nitric Acid Unit.

- Parametric monitoring of APCD to ensure operational parameters are checked weekly
- Two-year nitric acid usage recordkeeping requirements for all facilities
- Exempt units must continue to demonstrate usage below thresholds

Monitoring, Recordkeeping, and Reporting (g)

(3) No later than February 1, 2025, an owner or operator of a Nitric Acid Unit(s) shall prepare annual reports for calendar years 2023 and 2024, that include the following information:

(A) Records of all nitric acid usage pursuant to paragraph (g)(2) for each nitric acid unit;

(B) Identification of each heated Nitric Acid Unit;

(C) Identification of all Nitric Acid Unit(s) controlled by each APCD; and

(D) Source test report (or source test report number if already evaluated by the South Coast AQMD) for any Nitric Acid Unit(s) where a source test was conducted in the previous five calendar years.

(4) No later than February 15, 2025, an owner or operator of a Nitric Acid Unit(s) shall submit the two annual reports for calendar years 2023 and 2024 prepared pursuant to paragraph (g)(3) to the Executive Officer at [Rule1159_1_Reports@aqmd.gov].

(5) All records shall be maintained for at least five years with the two most current years kept on site and made available to the Executive Officer upon request.

- One-time report submittal requirement for all facilities
  - Year 2023
  - Year 2024
- Five-year record retention with most recent 2 years kept onsite

Source Testing Requirements and Test Methods (h)

(1) The source test protocol shall include the following information:

(A) Facility information;

(B) Description of the operations to be tested;

(C) Target NOx emission rate or control efficiency;

(D) Source test methods used and shall include South Coast AQMD Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989) and South Coast AQMD, Method 7.1 – Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989) to measure NOx emissions, and South Coast AQMD Methods 1.1-4.1 to determine stack gas flowrate;

(E) Design criteria and ventilation requirements at or above the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the South Coast AQMD permit application was deemed complete by South Coast AQMD) of *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists for the APCD or a permanent total enclosure as defined in U.S. EPA Method 204;

(F) South Coast AQMD permits;

(G) The number of test runs; and

(H) Test conditions that represent normal operations of the Nitric Acid Unit(s).

- Specifies required elements to be included in source test protocol

Source Testing Requirements and Test Methods (h)

(2) Disapproval of Source Test Protocol

No later than 30 days after written notification of the disapproval of the source test protocol by the Executive Officer is electronically distributed, the owner or operator of a Nitric Acid Unit(s) shall submit a revised source test protocol addressing deficiencies identified by South Coast AQMD.

(3) Periodic Source Testing

No later than five years from the last source test that demonstrated compliance with the requirements of subparagraph (d)(1)(A), the owner or operator of the APCD shall conduct a subsequent source test, except:

(A) For a Nitric Acid Unit(s) that is not in operation on the date the source test is required, conduct the source test no later than the end of seven consecutive days or 15 cumulative days of resuming operations.

(4) Qualifications of Contractor Conducting Source Test

Source tests conducted to demonstrate compliance shall use a South Coast AQMD-approved contractor under the Laboratory Approval Program.

(5) Source test reports shall be submitted to the Executive Officer within 60 days of completion of the source test.

- Requirements when a source test protocol is disapproved by South Coast AQMD
- Source testing every five years
- Use of qualified source testing contractor
- Source test report must be sent to South Coast AQMD for review and approval

Source Testing Requirements and Test Methods (h)

(6) Source Test Reports Unable to Demonstrate Compliance

No later than 90 days of written notification electronically distributed by the Executive Officer that the source test report submitted pursuant to paragraph (h)(5) is not acceptable to demonstrate compliance with the requirements of subparagraph (d)(1)(A), the owner or operator of the Nitric Acid Unit(s) shall conduct the source test addressing the deficiencies identified in the source test report with the following notification requirements:

(A) No less than seven days before the date of a scheduled retest, notify the Executive Officer at 1-800-CUT SMOG and provide the following information:

(i) Facility name and identification;

(ii) Facility address;

(iii) Name and contact information of facility representative; and

(iv) Date and time of scheduled retest.

(B) If a scheduled source test is delayed, notify the Executive Officer at 1-800-CUT SMOG within 24 hours from the time that an owner or operator knew of the delay.

- Requirements for re-testing if a source test fails to demonstrate compliance with the emission limit

Exemptions (i) – Low-use

(1) A Nitric Acid Unit is exempt from subdivision (d), paragraphs (e)(1) and (e)(2), subdivision (f), paragraph (g)(1) and subdivision (h), provided that the Replenishments recorded pursuant to subparagraph (g)(2)(A) do not exceed neither the applicable Per Nitric Acid Unit or Reduced Per Nitric Acid Unit nor the applicable Facility-Wide or Reduced Facility-Wide Thresholds specified in Table A based on the concentration(s) of the nitric acid used for Replenishments. Replenishments to a Nitric Acids Unit(s) equipped with an APCD(s) that demonstrates compliance with requirements of subparagraph (d)(1)(A) shall not be included in the determination of usage in Table A.

Table A – Low-Use Thresholds for Nitric Acid Units

Concentration of Nitric Acid (WT%) Stock Solution or Premixed Chemical based on Safety Data Sheet	Low-Use Thresholds (gallons per month)			
	Per Nitric Acid Unit*	Reduced Per Nitric Acid Unit*	Facility-Wide**	Reduced Facility-Wide **
0-30%	385	77	1155	231
>30-60%	115	23	346	69
>60-75%	66	13	198	40
>75-100%	45	9	135	27

** If different nitric acid concentrations are used in an individual Nitric Acid Unit, the threshold for the highest concentration applies.*

*** If different nitric acid concentrations are used for different Nitric Acid Units, the threshold for the highest concentration applies for Facility-Wide and Reduced Facility-Wide Thresholds.*

- Exempt from specific requirements
  - Emission limits
  - Source testing
  - Inspection and Maintenance
- Based on additions of nitric acid (Replenishments)
- Use of “gallons per month” for ease of tracking
- Threshold values for four ranges of nitric acid concentrations
  - 68%WT used by majority of facilities

Exemptions (i) – Replenishment Adjustments

(2) Disposal Replenishment Adjustment

An owner or operator of a Nitric Acid Unit(s) may elect to exclude an amount of new nitric acid added to a Nitric Acid Unit recorded pursuant to subparagraph (g)(2)(A) that is equal to the amount of nitric acid that is removed for disposal provided:

(A) The owner or operator keeps records of the following:

(i) Nitric acid concentration of the solution removed;

(ii) The volume of the solution removed;

(iii) Calculations used to determine amount of nitric acid removed for disposal; and

(B) The removed nitric acid in paragraph (i)(2) is not Recycled

(3) Evaporation Replenishment Adjustment

An owner or operator of a Nitric Acid Unit(s) may elect to exclude an amount of new nitric acid added to a Nitric Acid Unit recorded pursuant to subparagraph (g)(2)(A) that is equal to the amount of nitric acid that is evaporated provided:

(A) The owner or operator conducts a test according to the following procedure under normal tank operating conditions without processing any workpieces to determine the amount of nitric acid that evaporates:… *

- Provisions to exclude additions of nitric acid for consideration of low-use exemption threshold in (i)(1)
  - Optional
  - Requires additional recordkeeping and testing *
- Addresses nitric acid usage not forming NOx emissions
  - Disposal of tank solutions
  - Evaporation losses

Exemptions (i) - Others

(4) A Nitric Acid Unit demonstrating compliance with the requirements of subparagraph (d)(1)(A) and with reported nitric acid usage under RECLAIM pursuant to Regulation XX is exempt from paragraphs (g)(2), (g)(3), and (g)(4).

(5) Nitric Acid Units exempt pursuant to Rule 219 - Equipment Not Requiring a Written Permit Pursuant to Regulation II are exempt from the provisions of this rule.

- Facilities that comply with emission limits and report nitric acid usage data under RECLAIM are exempt from nitric acid usage recordkeeping and reporting
- Rule 219-exempt nitric acid units are exempt from entire rule

NOX EMISSIONS AND EMISSION REDUCTIONS

Impacted Facilities

Approximately 11 RECLAIM Facilities	Approximately 249 Non-RECLAIM Facilities

• 1 precious metal reclamation
• 9 metal finishing
  ○ 1 chemical milling
  ○ 8 surface treatment
• 1 expanded graphite foil production
 	
Total 126 nitric acid units
	• 3 precious metal reclamation
	• 246 metal finishing
	  ○ 6 chemical milling
	  ○ 240 surface treatment
	
	Total 1484 nitric acid units (estimated)

Baseline NOx Emissions Summary

- Baseline emissions represent total emissions from nitric acid units

- RECLAIM emissions based on audited data in 2017; emissions were estimated for remaining facilities

Facility	NOx Emissions (ton/day)	# of facilities
RECLAIM	0.004 (2017 Reported)	5
	0.043 (Estimated)	6

- Non-RECLAIM emissions based on 2021 Annual Emissions Reporting (AER)
- NOx emissions estimated based on survey, inspection reports, permits and discussion with operators for facilities that do not report emissions

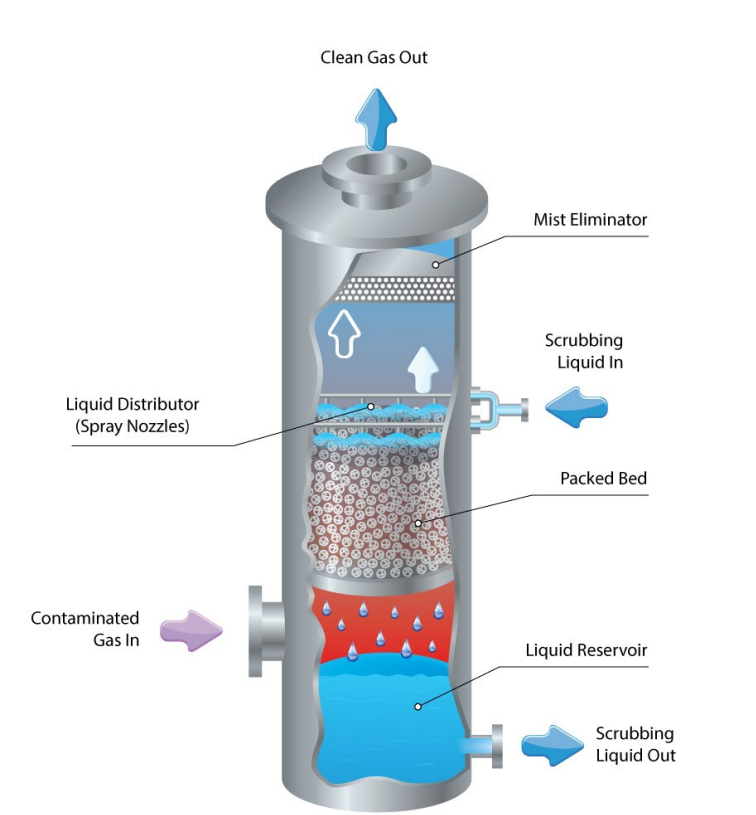
Facility	NOx Emissions (ton/day)	# of facilities
Non-RECLAIM	0.008 (Reported)	12
	1.3 (Estimated)	237

Step 1 – Find average number of units for each facility category
Step 2 – Find average nitric acid usage for each unit
Step 3 – Estimate NOX emissions based on average usage

Emission Reductions and Cost-Effectiveness

REVISED SLIDE

- Staff determine when it is cost-effective to require controls based on emissions and cost for controls
  - Threshold is $50,000 per ton of NOx reduced
  - Calculated using Discounted Cash Flow Method
- Based on reported and estimated emissions, one facility may be required to install controls
  - Evaluated cost-effectiveness for the facility to meet proposed emission limit of 0.30 lb/hr or 99% control efficiency
    - Up to 0.017 tons per day of NOx reductions is expected with cost-effectiveness of $22,000 per ton of NOx reduced



https://www.spray-nozzle.co.uk/spray-nozzle-applications/gas-scrubbing/packed-bed-scrubbers

CEQA & SOCIOECONOMIC IMPACTS OF PR 1159.1

California Environmental Quality Act (CEQA)

- The South Coast AQMD, as lead agency, is reviewing the PR 1159.1 project to determine if it will result in any potential adverse environmental impacts
- Appropriate CEQA documentation will be prepared based on the analysis

Socioeconomic Impact Assessment

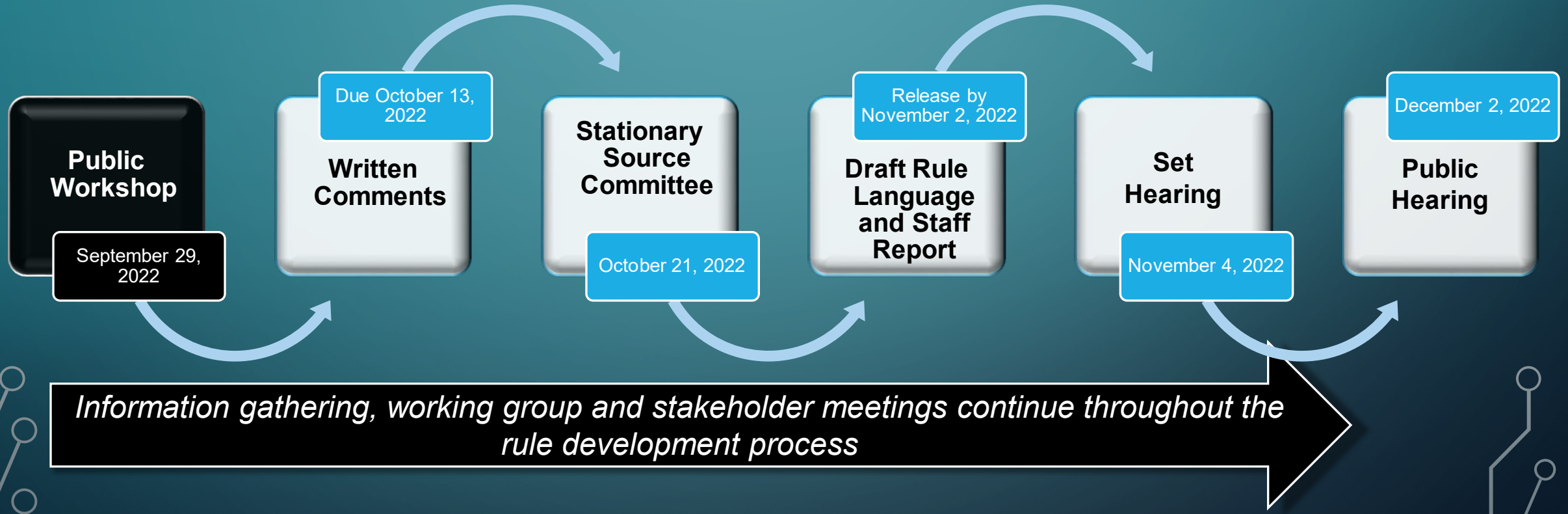
- California Health and Safety Code Section 40440.8 and 40728.5
  - Requires socioeconomic impact assessment for proposed rule or rule amendment which “will significantly affect air quality or emissions limitations”
  - Socioeconomic impact assessment shall consider (to the extent data is available):
    1. Type of affected industries, including small businesses
    2. Impact on regional employment and economy
    3. Range of probable costs, including costs to industry or business
    4. Availability and cost-effectiveness of alternatives
    5. Emissions reduction potential
    6. Necessity of adopting, amending, or repealing the rule

Cost Considerations

- One-time compliance costs
  - Capital costs: purchase, installation, and permitting of required equipment
- Recurring costs
  - Operating and maintenance costs (e.g., chemicals, utilities, wastewater and maintenance activities)
  - Other recurring costs include source testing (e.g., initial and periodic) and recordkeeping
- Staff is looking for input on these and/or other costs

NEXT STEPS

Next Steps


Public Workshop
September 29, 2022
Written Comments
Due October 13, 2022
Stationary Source Committee
October 21, 2022
Draft Rule Language and Staff Report
Release by November 2, 2022
Set Hearing
November 4, 2022
Public Hearing
December 2, 2022
Information gathering, working group and stakeholder meetings continue throughout the rule development process

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