Working Group Meeting #6

July 25, 2024

2:00 PM

PROPOSED RULE 1445 – CONTROL OF TOXIC EMISSIONS FROM LASER AND PLASMA ARC METAL CUTTING

JOIN ZOOM MEETING

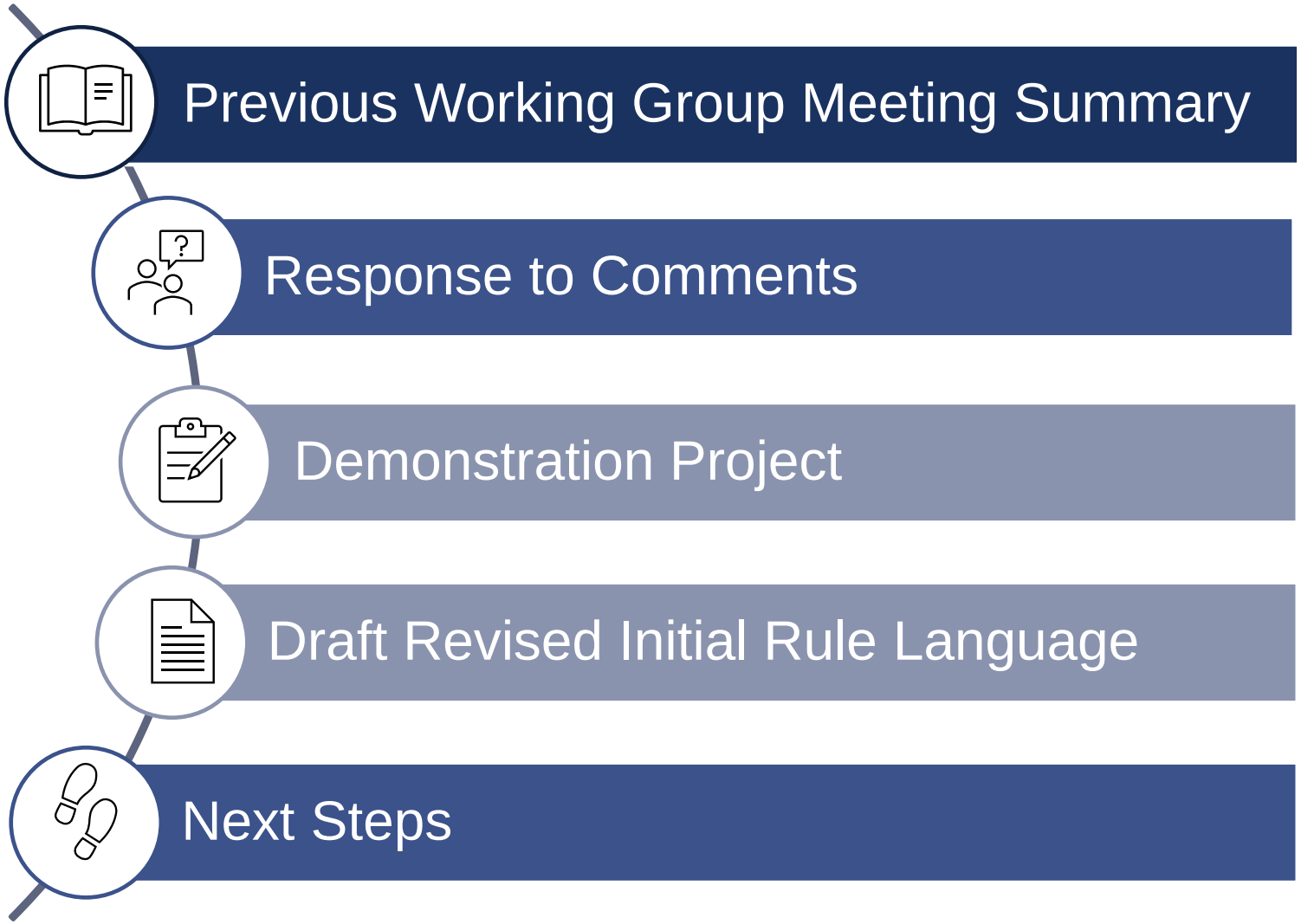
HTTPS://SCAQMD.ZOOM.US/J/91059006846

ZOOM WEBINAR ID: 910 5900 6846

TELECONFERENCE DIAL-IN: +1 669 900 6833

IF THE ZOOM LINK DOES NOT WORK, PLEASE CUT AND PASTE IT INTO YOUR BROWSER

AGENDA


Previous Working Group Meeting Summary
Response to Comments
Demonstration Project
Draft Revised Initial Rule Language
Next Steps

WORKING GROUP MEETING #5 RECAP

- Responded to comments made in WGM #4
- Presented an overview of initial preliminary draft rule language:
  - Purpose
  - Applicability
  - Control Devices
  - Housekeeping
  - Best Management Practices
  - Parametric Monitoring
  - Recordkeeping

STAKEHOLDER COMMENTS (WORKING GROUP MEETING #5)

Comment #1

- Will infrequently used portable units be subject to PR 1445 requirements ?

Comment #2

- How will the control device efficiency requirements for units cutting non-stainless or non-nickel alloy be met?

Comment #3

- What are the control device requirements for water tables cutting stainless steel and how is compliance with control device requirements demonstrated?

COMMENT #1: WILL INFREQUENTLY USED PORTABLE UNITS BE SUBJECT TO PR 1445 REQUIREMENTS ?

- PR 1445 is applicable to permitted units
- Some handheld (portable) units are exempt from the requirements to obtain permits under South Coast AQMD Rule 219 and are thus not subject to PR 1445 requirements
- Based on observations during the demonstration project (to be discussed later in the presentation), a partial rule exemption is proposed for low usage units used for maintenance and repair

COMMENT #2: HOW WILL THE MINIMUM CONTROL DEVICE REQUIREMENTS FOR EXISTING UNITS CUTTING NON-STAINLESS OR NON-NICKEL ALLOY BE MET?

- Minimum air pollution control device requirements for existing units and compliance schedules are included in Table 1 [portable units] and Table 2 [fixed units]
- Under the revised initial rule language, control efficiency requirements units cutting metals other than stainless steel of nickel allows are now proposed to be by weight for total suspended particles or particulate matter 10 microns or less in diameter
- Demonstration of minimum air pollution control device requirements for units that cut metals other than stainless steel or nickel alloy can be made through
  - Source test reviewed and approved by the Executive Officer
  - Manufacturers' specifications of guaranteed particulate removal efficiency
  - Air pollution control device types with control technology fact sheets issued by the U.S. EPA*

*https://www.epa.gov/catc/clean-air-technology-center-products#factsheets

COMMENT #3: WHAT ARE THE CONTROL DEVICE REQUIREMENTS FOR WATER TABLES CUTTING STAINLESS STEEL AND HOW IS COMPLIANCE WITH CONTROL DEVICE REQUIREMENTS DEMONSTRATED?

- Table 2 establishes minimum air pollution control device requirements and compliance schedules for fixed units
  - Intent is for emissions from units cutting stainless steel or nickel alloy to be subject to a higher level of particulate control
  - Compliance timelines are based on the existing air pollution control device in use
    - No APCD – Meet control device requirements by July 1, 2029
    - Dust collector or water table conducting fully submerged cutting – July 1, 2039
- Demonstration of minimum air pollution control device requirements for units that cut stainless steel or nickel alloy can be made through
  - Manufacturers' specifications for individually tested and certified filters
  - Source test reviewed and approved by the Executive Officer

New

DEMONSTRATION PROJECT

DEMONSTRATION PROJECT: BACKGROUND

- PR 1445 establishes requirements for both fixed and portable units
- Stakeholders have expressed concerns regarding feasibility of meeting proposed requirements for portable units
- A demonstration project was conducted at a wastewater treatment plant on June 25th with South Coast AQMD Source Testing staff to understand more about operational feasibility and to collect real world data

South Coast AQMD

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

DEMONSTRATION PROJECT
INITIAL RULE LANGUAGE REQUIREMENTS BEING EVALUATED

Parametric Monitoring Requirements

A filter-based air pollution control device is subject to two performance standards

- Capture efficiency as demonstrated by an acceptable smoke test
  - Smoke released where cutting occurs to demonstrate a direct stream to the collection device (Appendix 1 method)
- Capture velocity of at least 200 feet per minute, averaged
  - Measured by an anemometer at the cutting plane (Appendix 2 method)

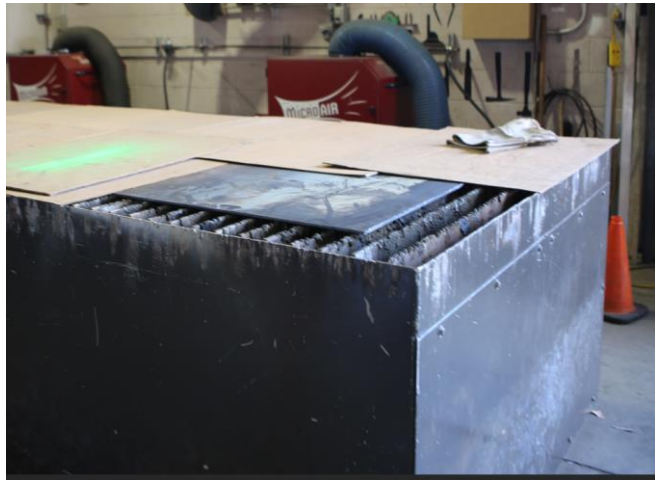
Enclosure Requirements

Metal cutting outside a building to be conducted within a temporary enclosure with access openings closed during metal cutting

- Temporary enclosure is a structure with walls and a roof

DEMONSTRATION PROJECT: SCENARIOS

Scenario 1 – Indoor Downdraft Table



Scenario 2 – Outdoor Portable Control Devices

APCD A
(132 cfm)

APCD B
(1000 cfm)

Purpose:

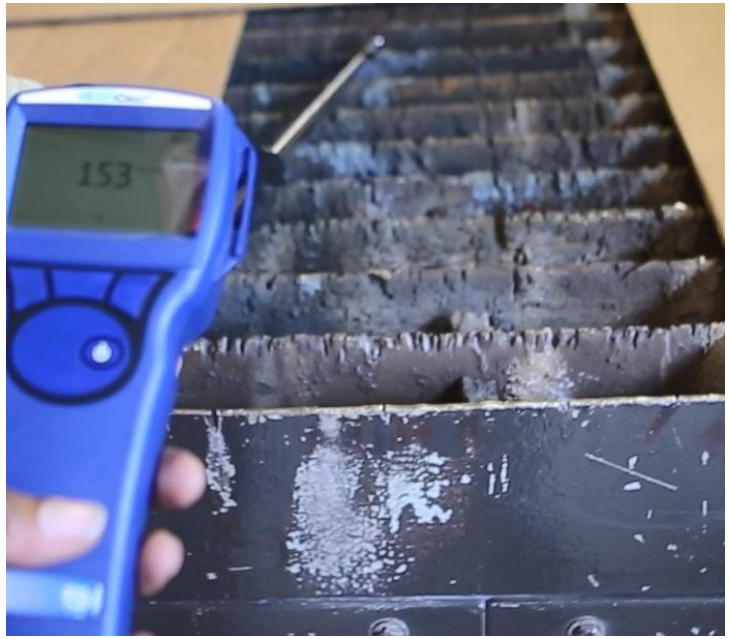
- Demonstrate feasibility of conducting proposed parametric monitoring tests and determine if performance standards are achievable
- Evaluate feasibility of proposed temporary enclosure requirements

SCENARIO 1: INDOOR DOWNDRAFT TABLE

- 5’ W x 12’ L table, vented to two 1000 scfm dust collectors with prefilters and final HEPA filtration
- Unit has permit conditions:
  - Opening <5 square feet or surface velocity of down draft table vent of at least 150 feet per minute (fpm)
- Partitions used to limit cutting area opening
- Smoke test and capture velocity measurements made on top of the down draft table vent (i.e., cutting plane)

SCENARIO 1: RESULTS

- Capture Velocity - measurements varied and an average of 175 fpm was documented



- Smoke Test - able to demonstrate direct collection of smoke stream

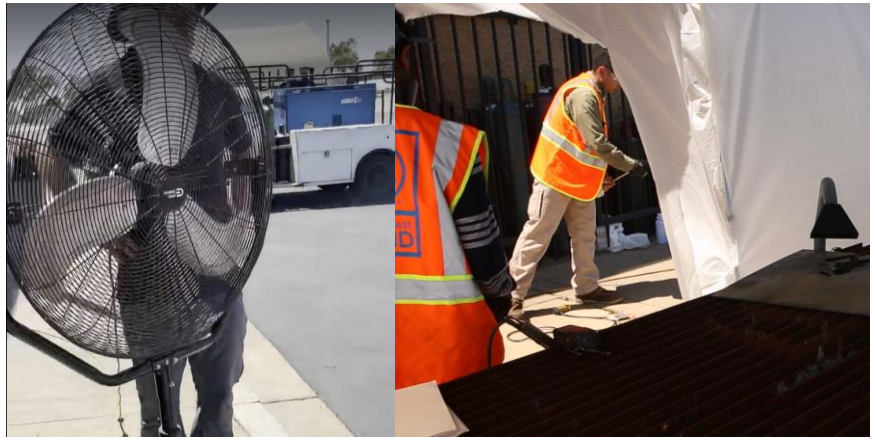
SCENARIO 2: OUTDOOR CONFIGURATIONS

Testing conducted at different enclosure settings (with and without a fan)

2A: Full Enclosure

2B: Three-Sided Barrier

2C: High Wind Event
(fan directed into enclosure)



Smoke released and capture velocity measurements generally made
at three and six inches from the collection hood to represent test results at hypothetical cutting planes

SCENARIO 2A: FULL ENCLOSURE SETTING - OBSERVATIONS

Testing Parameters and Results

- Smoke test
  - Small amount of smoke meanders from path leading into collection hood at six inches for both APCDs
  - Both APCDs demonstrated acceptable smoke test at three inches
- Capture Velocity Measurements
  - 150 fpm is demonstrated at three inches for both APCDs

Enclosure Feasibility

- Full enclosure provided limited space to accommodate cutting equipment and control device
  - For APCD B - air flow through pick up arm stressed (potentially disrupted) from angle of pick up arm necessary to extend into enclosure

APCD A

APCD B

SCENARIO 2B: THREE-SIDED ENCLOSURE SETTING

Testing Parameters and Results

- Smoke Tests
  - Moderate amount of smoke meanders from path leading into collection hood at six inches
  - Both APCDs demonstrated acceptable smoke test at three inches
- Capture Velocity Measurements
  - 150 fpm demonstrated at three inches for APCD - A
  - 150 fpm demonstrated at six inches for APCD - B

Enclosure Feasibility

- APCDs can be set up more conveniently for optimal collection of emissions than for full enclosure
- More space for conducting metal cutting activities and test procedures

APCD - A

APCD - B

SCENARIO 2C: HIGH WIND SETTING

Testing Parameters and Results

- Smoke Test
  - Large amount of smoke meanders from path at six inches
- Capture Velocity Measurement
  - 150 fpm not demonstrated at six inches or less

Enclosure Feasibility

- No enclosure
- Fan set to generate wind 10 mph where metal cutting occurs
- Wind directly aimed towards metal cutting

APCD - B

DEMONSTRATION PROJECT: OBSERVATIONS

- Indoor cutting and outdoor cutting
  - PR 1445 parametric monitoring tests can be conducted on equipment provided
- Outdoor cutting
  - Difficult to operate within a full enclosure (confined space may also affect APCD operation)
  - Three-side wind barrier achieved similar results to reduce cross draft as full enclosure
    - May not be feasible in confined and difficult to access spaces based on observations made during a tour of locations where cutting takes place at a water treatment facility
  - Smoke test and capture velocity test results during high wind scenario (2C) show the value of wind barriers
  - Proposing separate capture velocity provisions for portable air pollution control devices
- Proposed revised initial rule language based on demonstration project results will be presented in subsequent slides

REVISED INITIAL PRELIMINARY DRAFT RULE LANGUAGE

PR 1445 STRUCTURE

(a) Purpose	
(b) Applicability	
(c) Definitions	Key Updates
(d) Control Device Requirements	Key Updates
(e) Performance Specifications	Key Updates
(f) Testing Requirements	
(g) Pressure Drop Requirements	Key Updates
(h) Building Requirements	Key Updates
(i) Housekeeping Requirements	
(j) Best Management Practices	
(k) Source Testing	New
(l) Recordkeeping and (m) Exemptions	Key Updates

Appendices

Appendix 1 – Smoke Test Procedures

Appendix 2 – Capture Velocity Measurement Procedures

KEY UPDATES

Subdivision: (c) Definitions

Key Definitions – (c)

Metal
Dust Collector
Fixed
Portable
Leak Tight
Fully Submerged
Grade Level
Non-Grade Level
Wind Barrier

PR 1445 includes new or revised definitions to improve rule clarity

Key definitions will be discussed in subsequent slides

Subdivision: (d) Control Device Requirements

Control Device Requirements: Table 1 – Existing Portable Units

Table 1 – Requirement and Compliance Schedule for Existing Portable Unit(s)			
Metal Cut	**Minimum Air Pollution Control Device Requirement**	**Effective Date**	**Permit Application Due Date**
Metals Other than Stainless Steel, Nickel Alloy, or Unknown Metal	99% control efficiency or greater by weight*	January 1, 2029	January 1, 2027
Stainless Steel, Nickel Alloy or Unknown Metal	Operated with HEPA or better final filtration	July 1, 2028	July 1, 2026

*for total suspended particles or particulate matter 10 microns or less in diameter

Updated Minimum Air Pollution Control Device (APCD) Requirements – Table 1

Particle size clarified for units that cut metals other than stainless steel and nickel alloys

- Control efficiency is determined by weight based on total suspended particles or PM10 or smaller

Updated Compliance Timelines

Additional time proposed due to updated rule adoption schedule

Control Device Requirements: Table 2 – Existing Fixed Units

Table 2 – Requirement and Compliance Schedule for Existing Fixed Unit(s)				
Metal Cut	**Air Pollution Control Device Type as of [*date of rule adoption*]**	**Minimum Air Pollution Control Device Requirement**	**Effective Date**	**Permit Application Due Date**
Metals Other than Stainless Steel, Nickel Alloy, or Unknown Metal	No APCD or APCD not identified below	99% control efficiency or greater by weight*	January 1, 2029	January 1, 2027
	Dust Collectors or Water Tables conducting Fully Submerged Cutting, or Both		January 1, 2039	January 1, 2037
Stainless Steel, Nickel Alloy, or Unknown Metal	No APCD or APCD not identified below	99.97% control efficiency or greater by weight* Or Operated with HEPA or better final filtration	January 1, 2029	January 1, 2027
	Dust Collector or Water Tables conducting Fully Submerged Cutting or Both		January 1, 2039	January 1, 2037

*for total suspended particles or particulate matter 10 microns or less in diameter

Updated Air Pollution Control Device (APCD) Type Descriptions – Table 2

Identify APCD types for existing units using two categories

- No APCD or APCD is not one of the following:

  Dust Collector

  Water Table conducting Fully Submerged Cutting

  Both – System with Water Table + Dust Collector

Control Device Demonstration Requirements for Units that Cut Metals other than Stainless Steel or Nickel Alloy – (d)(3)

(3) An owner or operator of a Unit used to exclusively cut Metal other than Stainless Steel, Nickel Alloy, or an Unknown Metal shall operate the Unit with an Air Pollution Control Device that meets the minimum Air Pollution Control Device requirements included in Table 1 – Requirement and Compliance Schedule for Existing Portable Unit(s) and/or Table 2 – Requirement and Compliance Schedule for Existing Fixed Unit(s) as demonstrated by either performing a source test pursuant to subdivision (k) that has been reviewed and approved by the Executive Officer with results demonstrating compliance, control technology fact sheets issued by the U.S. EPA, or manufacturers' specifications of guaranteed particulate removal efficiency.

Updated compliance pathways - (d)(3)

Clarifications proposed for how the air pollution control device control efficiency can be demonstrated

- Source test prepared pursuant to subdivision (k)
- Manufacturers specifications of guaranteed particulate removal efficiency
- **NEW** - Control technology fact sheets issued by the U.S EPA

Control Device Demonstration Requirements for Units that Cut Stainless Steel or Nickel Alloy – (d)(4)

(4) An owner or operator of a Unit used to cut Stainless Steel, Nickel Alloy, or an Unknown Metal shall operate the Unit with an Air Pollution Control Device that meets the minimum Air Pollution Control Device requirements included in Table 1 – Requirement and Compliance Schedule for Existing Portable Unit(s) and/or Table 2 – Requirement and Compliance Schedule for Existing Fixed Unit(s) as demonstrated by either performing a source test pursuant subdivision (k) that has been reviewed and approved by the Executive Officer with results demonstrating compliance, or manufacturers' specifications for individually tested and certified filters.

Updated compliance pathways - (d)(4)

Clarifications proposed for how the air pollution control device control efficiency can be demonstrated

- Manufacturers specifications for individually tested and certified filters
- **NEW** – Source test prepared pursuant to subdivision (k)

Technologically neutral approach allows non-filter-based control technology to demonstrate compliance through source testing

Subdivision: (e) Performance Specifications

Performance Specifications for Filter-Based Control Devices – (e)

(e) Performance Specifications for Unit(s) Vented to a Filter-Based Air Pollution Control Device

(1) An owner or operator of a Fixed Unit shall demonstrate compliance with the following performance specifications for the associated Filter-Based Air Pollution Control Device by conducting tests pursuant to subdivision (f):

(A) Acceptable smoke test; and

(B) Capture Velocity of at least 200 feet per minute, on average, measured at the cutting plane.

(2) An owner or operator of a Portable Unit shall demonstrate compliance with the following performance specifications for the associated Filter-Based Air Pollution Control Device by conducting tests pursuant to subdivision (f):

(A) Acceptable smoke test; and

(B) Capture Velocity of at least 150 feet per minute, on average.

Performance specifications - (e)

Separate requirements for Portable [(e)(1)] and Fixed [(e)(2)] units

- Portable units subject to:
  - Acceptable smoke test and
  - Capture Velocity of at least 150 feet per minute, on average

150 feet per minute proposed due to operational feasibility concerns observed during demonstration project

Subdivision: (g) Pressure Drop Requirements

Pressure Drop Requirements – (g)

(2) In lieu of meeting the requirement in paragraph (g)(1), an owner or operator of an Existing Air Pollution Control Device associated with an Existing Portable Unit that does not include permit conditions that require installation and operation of a pressure gauge may elect to operate and maintain the Air Pollution Control Device per manufacturer specifications.

(4) An owner or operator of any Unit vented to Air Pollution Control Device that does not meet the pressure drop provisions of subparagraph (g)(1)(C) or the manufacturer specifications of paragraph (g)(2) shall:

(A) Not operate the Unit until the pressure drop readings demonstrate compliance with subparagraph (g)(1)(C) and/or the manufacturer specifications of paragraph (g)(2) are met, as applicable;

(B) Notify the Executive Officer by calling 1-800-CUT-SMOG within 24 hours of when the owner or operator knew or reasonably should have known of the Unit's failed demonstration; and

(C) Perform necessary actions or repairs to meet the requirements of subparagraph (g)(1)(C) and/or paragraph (g)(2), as applicable.

Alternative compliance pathway - (g)(2)

Based on infeasibility of installing pressure gauges for some smaller APCDs

- Eligible for existing portable units that are not required to install or operate a pressure gauge under permit conditions

Operational procedures - (g)(4)

Procedures specified for a facility to follow if pressure drop reading is outside an acceptable range

- Proposed procedures are based on the requirements for units that do not meet smoke tests/capture velocity requirements

Subdivision: (h) Building Requirements

Building Requirements – (h)

(5) Beginning on the effective dates in Table 1 – Requirement and Compliance Schedule for Existing Portable Unit(s), an owner or operator of a Portable Unit that conducts Metal Cutting outside of a Building shall meet the following requirements:

(A) For Grade Level operations, conduct Metal Cutting and housekeeping within a Wind Barrier during Metal Cutting; and/or

(B) For Non-Grade Level operations, either conduct Metal Cutting within a Wind Barrier during Metal Cutting or conduct an acceptable smoke test pursuant to the procedure in Appendix 1 – Smoke Test Procedures prior to and on the same day of operation.

Updated building requirements for portable units used outside - (h)(5)

Updated definitions based on demonstration project results

Non Grade Level - any metal cutting activity conducted below grade or at least six feet above the grade

- Incorporates below grade and lowers height threshold from 15 to 6 feet due to safety concerns

Wind Barrier - a barrier that meets the following:

- Extends on at least three sides around Metal Cutting
- Located within ten feet of Metal Cutting activities
- Vertically, each side extends no more than six inches above grade to a least two feet above the height of metal cutting plane
- Horizontally, extends two feet beyond where metal cutting takes place

Replaces temporary enclosure requirements due to feasibility concerns

Subdivision: (k) Source Testing Requirements

- Source testing is not required by PR 1445
- A facility may conduct a source test to demonstrate compliance with minimum control device requirements provisions included in paragraphs (d)(3) and (d)(4)
  - One time source test, no recurring tests under PR 1445
- Subdivision (k) provides generalized source testing procedures

Subdivision: (l) Recordkeeping Requirements

Recordkeeping Requirements – (l)

(3) An owner or operator of a New Filter-Based Air Pollution Control Device shall maintain records to document the permit number and initial operation date of the Air Pollution Control Device and a list of Unit(s) vented to the Air Pollution Control Device, including permit numbers.

Recordkeeping added for New Filter Based APCD - (l)(3)

Proposing to remove previous initial rule language notification requirements for new air pollution control device and replace with recordkeeping that includes:

- Permit number
- Initial operation date of new filter-based APCD
- List of units venting to APCD, including permit numbers

Subdivision: (m) Exemptions

Exemptions – (m)

(4) The provisions of subdivision (h)(5) shall not apply to a Portable Unit provided:

(A) The Unit is used exclusively for maintenance and repair activities for less than 40 hours during a calendar year; and

(B) The owner or operator maintains an activity data report each time the Unit is used that includes operating hours for:

(i) Maintenance and repair; and

(ii) Any other activity.

Building requirements for portable units - (m)(4)

Based on low emissions potential and infeasibility of use of wind barriers in confined spaces, proposing new partial exemption

- Would exclude low use maintenance and repair activities from requirements to use wind barriers for outdoor cutting [paragraph (h)(5)]
- Recordkeeping required each time unit is used

SUMMARY OF WORKING GROUP MEETING #6

- Presented demonstration project results
- Discussed key updates to rule language
  - Control device requirements
  - Requirements for filter-based control devices
    - Performance specifications
    - Pressure drop monitoring
  - Building requirements for outdoor cutting
  - Source testing
  - Recordkeeping
  - Exemptions

SEEKING PUBLIC INPUT

Currently seeking public input on revised initial preliminary draft rule language

Submission of Comments or Documents

Comments on PR 1445 requested by **August 2, 2024**

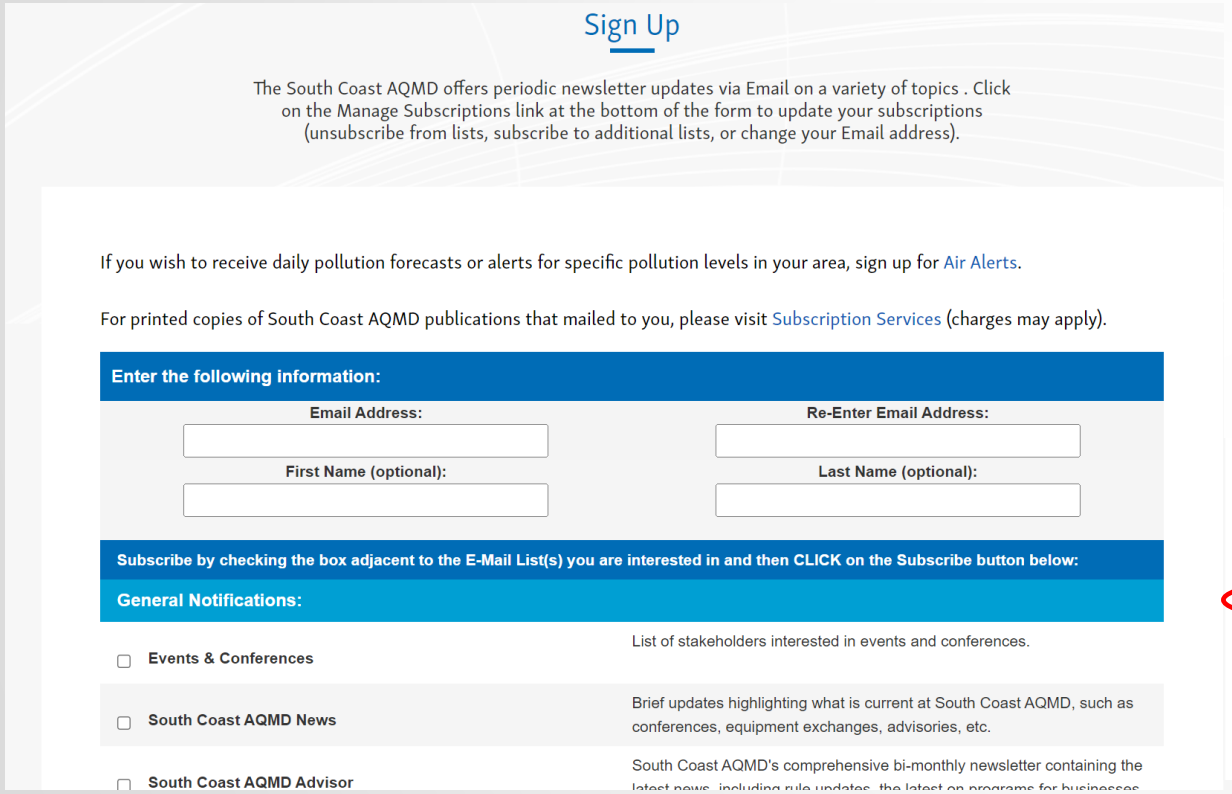
- Lead Staff: Danielle Collado
  Assistant Air Quality Specialist
  909-396-2766
  dcollado@aqmd.gov
- Kalam Cheung, Ph.D.
  Planning and Rules Manager
  909-396-3281
  kcheung@aqmd.gov
- Michael Laybourn
  Program Supervisor
  909-396-3066
  mlaybourn@aqmd.gov
- Michael Krause
  Assistant DEO
  909-396-2706
  mkrause@aqmd.gov

NEXT STEPS

Release preliminary draft rule language and staff report

Public Workshop

STAYING UPDATED



Sign Up

The South Coast AQMD offers periodic newsletter updates via Email on a variety of topics . Click on the Manage Subscriptions link at the bottom of the form to update your subscriptions (unsubscribe from lists, subscribe to additional lists, or change your Email address).

If you wish to receive daily pollution forecasts or alerts for specific pollution levels in your area, sign up for Air Alerts.

For printed copies of South Coast AQMD publications that mailed to you, please visit Subscription Services (charges may apply).

Enter the following information:

Email Address: | Re-Enter Email Address:

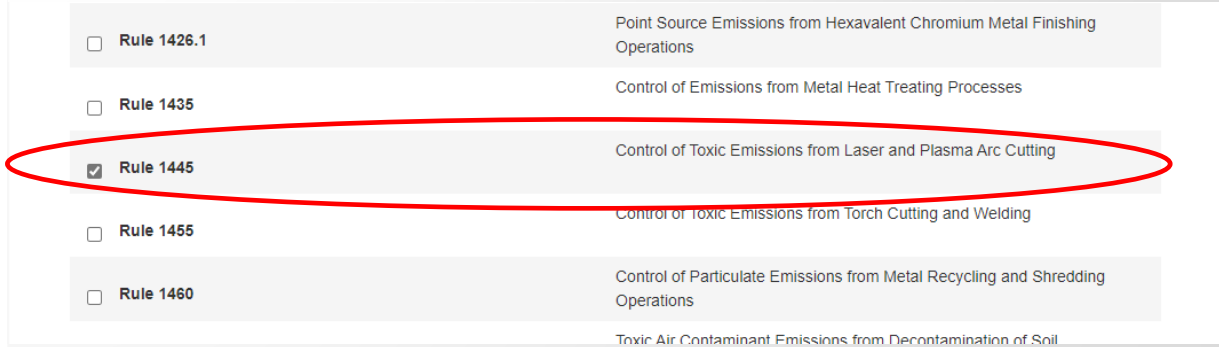
First Name (optional): | Last Name (optional):

Subscribe by checking the box adjacent to the E-Mail List(s) you are interested in and then CLICK on the Subscribe button below:

General Notifications:

☐ Events & Conferences	List of stakeholders interested in events and conferences.
☐ South Coast AQMD News	Brief updates highlighting what is current at South Coast AQMD, such as conferences, equipment exchanges, advisories, etc.
☐ South Coast AQMD Advisor	South Coast AQMD's comprehensive bi-monthly newsletter containing the latest news, including rule updates, the latest on programs for businesses

Subscribe by scrolling down the page and checking off the box for Proposed Rule 1445 to receive future meeting notices and links to documents



☐ Rule 1426.1	Point Source Emissions from Hexavalent Chromium Metal Finishing Operations
☐ Rule 1435	Control of Emissions from Metal Heat Treating Processes
☑ Rule 1445	Control of Toxic Emissions from Laser and Plasma Arc Cutting
☐ Rule 1455	Control of Toxic Emissions from Torch Cutting and Welding
☐ Rule 1460	Control of Particulate Emissions from Metal Recycling and Shredding Operations
	Toxic Air Contaminant Emissions from Decontamination of Soil

STAFF CONTACTS

Danielle Collado
Assistant Air Quality Specialist
☎ (909) 396-2766
dcollado@aqmd.gov

Michael Laybourn
Program Supervisor
☎ (909) 396-3066
mlaybourn@aqmd.gov

Kalam Cheung, Ph.D.
Planning and Rules Manager
☎ (909) 396-3281
kcheung@aqmd.gov

Michael Krause
Assistant Deputy Executive Director
☎ (909) 396-2706
mkrause@aqmd.gov