BOARD MEETING DATE: March 5, 2021 AGENDA NO. 31

PROPOSAL: Determine That Proposed Amended Rule 218 - Continuous Emission Monitoring, Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications, Are Exempt from CEQA; Amend Rule 218; and Adopt Rules 218.2 and 218.3

SYNOPSIS: Proposed Amended Rule 218 (PAR 218) will provide a phase-out provision to transition facilities into the revised provisions for CEMS which are specified in Proposed Rules 218.2 and 218.3 (PR 218.2 and PR 218.3). PR 218.2 and PR 218.3 will establish specifications for installation and operation for continuous emission monitoring system (CEMS) at non-RECLAIM and former RECLAIM facilities. PR 218.2 and PR 218.3 specify performance requirements for certification and quality assurance of CEMS that are used to continuously measure pollutant concentrations for compliance with rule limits and/or permit requirements.

COMMITTEE: Stationary Source, January 22, 2021, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached Resolution:

1. Determining that Proposed Amended Rule 218 - Continuous Emission Monitoring, Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications, are exempt from the requirements of the California Environmental Quality Act; and
2. Amending Rule 218 - Continuous Emission Monitoring; and Adopting Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications.

Wayne Nastri
Executive Officer

SR:SN:MK:GQ:YZ

Background

A continuous emission monitoring system (CEMS) is the combination of equipment used to measure pollutant concentrations or mass emissions on a continuous basis using analyzer measurements and computer software. For non-RECLAIM facilities, Rule 218 - Continuous Emissions Monitoring, and Rule 218.1 - Continuous Emissions Monitoring Performance Specifications, establish specifications for installation and operation of CEMS to ensure accuracy and precision of monitoring pollutant concentrations for compliance with source-specific rules and permit conditions. For RECLAIM facilities, Rule 2011 - Requirements for Monitoring, Reporting, and Recordkeeping for SOx Emissions, and Rule 2012 - Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions, establish specifications for installation and operation of CEMS to ensure accuracy and precision of monitoring mass emissions for compliance with SOx and NOx RECLAIM, respectively.

As part of the transition of NOx RECLAIM facilities to a command-and-control regulatory structure, staff is proposing to amend Rule 218 and adopt two new monitoring rules consolidating existing requirements from Rules 218, 218.1 and 2012, along with clarifications to those requirements, and new provisions to streamline or codify existing procedures. The new rules, Proposed Rules 218.2 - Continuous Emission Monitoring System: General Provisions, and 218.3 - Continuous Emission Monitoring System: Performance Specifications, (PR 218.2 and PR 218.3), will apply to CEMS at non-RECLAIM facilities and former RECLAIM facilities, with specifications for both former RECLAIM CEMS previously certified according to the RECLAIM program, as well as non-RECLAIM CEMS previously certified according to Rules 218 and 218.1.

Public Process

The development of Proposed Amended Rules 218 (PAR 218), PR 218.2, and PR 218.3 was conducted through a public process. Staff held eleven working group meetings on the following dates: March 13, 2019, May 2, 2019, June 11, 2019, September 12, 2019, November 12, 2019, February 13, 2020, June 26, 2020, July 16, 2020, October 6, 2020 and November 5, 2020. A Public Workshop was held on January 6, 2021. Staff also held numerous individual meetings with stakeholders and conducted multiple site visits as part of this rulemaking process.

Proposed Rules and Amendments

PR 218.2 and PR 218.3 will provide new CEMS requirements for non-RECLAIM and former RECLAIM facilities. PR 218.2 is based on Rule 218 with a focus on CEMS administrative requirements and proposes to revise the provisions retained from Rule 218 with key modifications on the certification process for CEMS modification and the requirements for reporting. PR 218.2 also incorporates a new provision (subdivision (e)) that would require CEMS to be in continuous operation, except during the defined CEMS maintenance and repair, and allow CEMS to be shut down when the unit (emission source) goes offline for at least one week.

PR 218.3 is based on Rule 218.1 with a focus on CEMS performance specification and proposes to revise the provisions retained from Rule 218.1 with key modifications on span range, data acquisition and handling system, relative accuracy test audit, and calibration gas requirements. PR 218.3 also incorporates a new provision to provide specifications on the data handling method for data measured below 10 percent or above 95 percent of the upper span value, emission data averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

PAR 218 will incorporate a phase-out provision that requires the owner or operator of any CEMS subject to Rules 218 and 218.1 to transition to comply with PR 218.2 and PR 218.3 according to the implementation schedule specified in each of the proposed rules. The schedule varies from 12 months to several years depending on applicable source-specific rule.

Key Issues and Responses
Through the rulemaking process, staff has worked with the stakeholders to address comments and resolve key issues. Staff is not aware of any remaining key issues.

California Environmental Quality Act (CEQA)
Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment F to this Board Letter. If the project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2021. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

Socioeconomic Impact Assessment
PAR 218, PR 218.2, and PR 218.3 would potentially affect 500 CEMS devices at RECLAIM facilities and 250 CEMS at non-RECLAIM facilities. The petroleum refineries industry (NAICS 324110) has the highest number of devices by industry (estimated 274 active CEMS). Under the proposed rules and amendments, the affected facilities would be required to purchase data acquisition and handling systems software that controls the CEMS equipment.

The total annual cost of the proposed rules and amendments in the 218 Series are expected to be from $1.5 to $2.2 million annually between 2024 and 2049, respectively. Implementation of PAR 218, PR 218.2, and PR 218.3 is expected to result in 44 to 68 jobs foregone on average, annually, between 2024 and 2049. The majority of the jobs foregone are in the sectors of manufacturing (NAICS 31-33), construction (NAICS 23), and retail trade (NAICS 44-45). The jobs foregone represent less than 0.001 percent of the regional baseline jobs, and the impact on competitiveness are expected to be minimal.

AQMP and Legal Mandates

PAR 218, PR 218.2, and PR 218.3 are related to 2016 AQMP Control Measure CMB-05 which addresses the transition of NOx RECLAIM facilities to command-and-control as they specify the CEMS requirements for command-and-control rules for RECLAIM and former RECLAIM facilities. PAR 218, PR 218.2, and PR 218.3 will be submitted to CARB and U.S. EPA for inclusion in the SIP.

Implementation and Resource Impacts

Although there will be an increased workload implementing PAR 218, PR 218.2, and PR 218.3 to process CEMS recertification, existing staff resources are sufficient at this time to implement the proposed rules.

Attachments

A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Notice of Exemption from CEQA
G-1. Proposed Amended Rule 218
G-2. Proposed Rule 218.2
G-3. Proposed Rule 218.3
H. Final Staff Report
I. Board Meeting Presentation

ATTACHMENT A
SUMMARY OF PROPOSAL

Proposed Amended Rule 218 – Continuous Emission Monitoring
Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions
Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

Summary of Proposed Amendment to Rule 218

- Incorporates an implementation schedule (PR 218.2 (d) or 218.3 (d)) requiring owners of operators of any CEMS currently subject to Rule 2012 (RECLAIM) or Rules 218 and 218.1 (non-RECLAIM) to comply with the requirements specified in Proposed Rules 218.2 and 218.3.

Summary of Proposed Rule 218.2

Proposed Rule 218.2 is largely based on Rule 218. Most revisions to Proposed Rule 218.2 are to improve clarity or codify the current practices with the following key modifications:

- Implementation Schedule (identical to the PR 218.3 subdivision)
  - Provides pathways for owners or operators of RECLAIM and non-RECLAIM CEMS to transition to comply with PR 218.2 and 218.3
- Definitions
  - Adds new definitions for new terms or additional clarifications
- Certification Requirements
  - Codifies the current practice by providing:
    - An application process for a CEMS modification required within 30 days due to CEMS failure; and
    - Alternative processes for modification on CEMS components that are not listed on the CEMS final certification letter
  - Provisionally validates CEMS data recorded during the certification or recertification period
- Reporting Requirements
  - Adds two new reporting provisions for reporting CEMS shutdowns during long-term shutdowns and submittal of relative accuracy test audit report, consistent with RECLAIM CEMS requirements
- Monitoring Requirements
  - Allows CEMS non-operation for up to 96 hours for each occurrence, and additional 96 hours if the unit is offline
  - Allows CEMS non-operation when the unit is offline for 168 consecutive hours (7 days) or longer (long term unit shutdown)
  - Provides options for how to demonstrate unit offline

Summary of Proposed Rule 218.3

Proposed Rule 218.3 is largely based on Rule 218.1. Most revisions to Proposed Rule 218.3 are to improve clarity or codify the current practices with the following key modifications:

- Implementation Schedule (identical to the PR 218.2 subdivision)
  - Provides pathways for owners or operators of RECLAIM and non-RECLAIM CEMS to transition to comply with PR 218.2 and 218.3
- Definitions
  - Adds new definitions for new terms or additional clarifications
- Pre-certification Requirements
  - Provides more flexibility for span range requirements
  - Requires status codes being recorded by the data acquisition and handling system
- Certification Test Requirements
  - Requires correction actions within 8 hours of receiving the audible alert for analyzer enclosure temperature drift
  - Lowers the de minimis standard of a relative accuracy test audit from 1.0 ppm to 0.5 ppm for units with a rule or permitted concentration limit at or lower than 5.0 ppm
- Quality Assurance Testing Requirements
  - Specifies grace period, unit restart, and exemption for the tests
  - Adds testing requirements for ACEMS, stack flow monitor, a fuel meter, aligning with RECLAIM CEMS requirements
- Calibration Gas and Zero Gas
  - Provides more certification program options for calibration gas
- Data Handling
  - Specifies data recording, data validity, and spiking data percentage threshold for emission data above 95 percent of the upper span value
  - Defines emission data averaging methods, aligning with U.S. EPA CFR 40 Part 60 and Part 75 for the hourly averaging method
  - Addresses CEMS data availability calculation and threshold
  - Defines CEMS out-of-control period
  - Provides options for alternative data acquisition

ATTACHMENT B

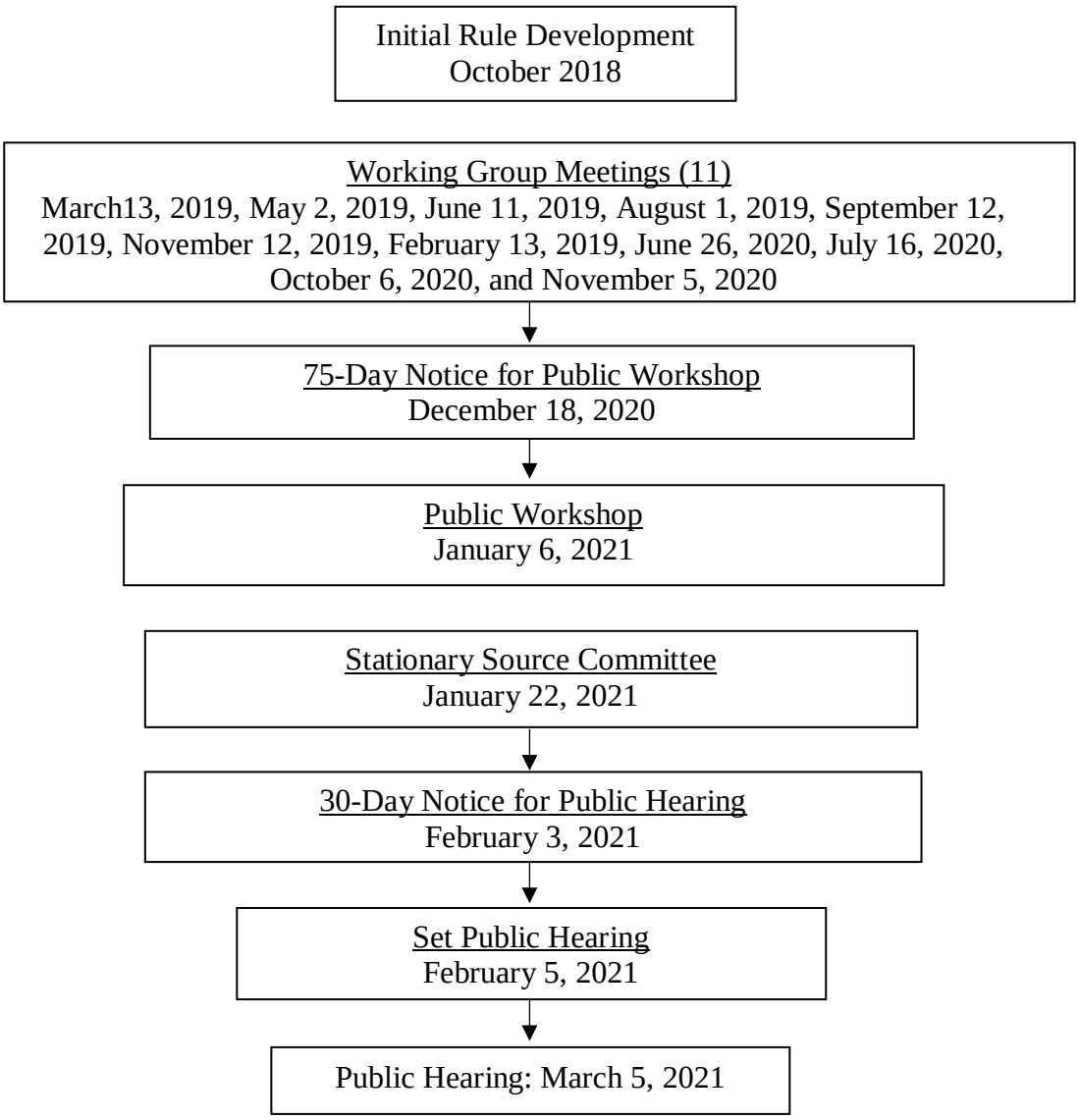
KEY ISSUES AND RESPONSES

Proposed Amended Rule 218 – Continuous Emission Monitoring **Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions** **Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications**
Throughout the rulemaking process, staff worked with stakeholders to address their comments. Staff is not aware of any remaining key issues.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Amended Rule 218 – Continuous Emission Monitoring
Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions
Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications



Twenty Nine (29) months spent in rule development
One (1) Public Workshop
One (1) Stationary Source Committee Meeting
Eleven (11) Working Group Meetings

ATTACHMENT D

KEY CONTACTS LIST

United States Environmental Protection Agency (U.S. EPA)

California Air Resources Board (CARB)

Southern California Alliance of Publicly Owned Treatment Works (SCAP)

California Council for Environmental and Economic Balance (CCEEB)

Western States Petroleum Association (WSPA)

Ramboll

CEMTEK KVB-Enertec

VIM Technologies

Cisco CEMS

Rockwell Automation

FERCo

York Engineering

Almega Environmental

AirKinetics Inc

Taylor Environmental Services

Montrose Environmental

California Resources Corporation

Phillips 66

Marathon Petroleum

Valero Energy

Signal Hill Petroleum

AltAir Paramount

Anheuser-Busch LLC

Walnut Creek Energy

Southern California Gas Company

Southern California Edison

City of Riverside

Los Angeles Department of Water and Power

City of Glendale Water and Power

City of Pasadena

California Institute of Technology

Los Angeles County Sanitation District

Orange County Sanitation District

Inland Empire Utilities Agency

ATTACHMENT E

RESOLUTION NO.21-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) determining that Proposed Amended Rule 218 – Continuous Emission Monitoring, Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications are exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the South Coast AQMD Governing Board amending Rule 218 – Continuous Emission Monitoring, and adopting Rule 218.2 – Continuous Emission Monitoring System: General Provisions, and Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications.

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are considered a "project" as defined by CEQA; and

WHEREAS, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of the proposed project pursuant to such program (South Coast AQMD Rule 110); and

WHEREAS, the South Coast Governing Board finds and determines after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that the proposed project is exempt from CEQA; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that because the proposed project addresses CEMS requirements for facilities transitioning from RECLAIM to a command-and-control regulatory structure, provides additional clarifications and flexibility to the rules, and codifies existing practices to improve transparency requirements without requiring physical modifications involving construction, it can be seen with certainty that there is no possibility that proposed project may have any significant adverse effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

WHEREAS, the South Coast AQMD staff has prepared a Notice of Exemption for the proposed project, that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, the South Coast AQMD staff conducted a public workshop on January 6, 2021 regarding Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3; and

WHEREAS, Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, and supporting documentation, including but not limited to, the Notice of Exemption and Final Staff Report were presented to the South Coast AQMD Governing Board and the South Coast AQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the South Coast AQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (Section 30.5(4)(D)(i) of the Administrative Code), that no modifications have been made to the proposed project since notice of public hearing was published that are so substantial as to significantly affect the meaning of Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the proposed project is exempt from CEQA; and

WHEREAS, Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 will be submitted for inclusion into the State Implementation Plan; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has determined that a need exists to amend Rule 218 and adopt Rule 218.2 and Rule 218.3 to address CEMS requirements which are part of the monitoring requirements for facilities that transition from RECLAIM to a command-and-control regulatory structure, provide additional clarification and flexibility to the rules, and codify existing practices to improve transparency of requirements; and

WHEREAS, the South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Sections 40000, 40001, 40440, 40702, 40725 through 40728, 41508, and 41511 of the Health and Safety Code; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are written or displayed so that their meanings can be easily understood by persons directly affected by them; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 do not impose the same requirements as any existing state or federal regulations, and the proposed amended rule and proposed rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 reference the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); 40440(c) (rules to carry out programs efficiently and cost-effectively); 40702 (adoption of rules and regulations); and 41511 (requirements to determine emissions); and

WHEREAS, the South Coast AQMD Governing Board finds that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 do not impose new or more stringent monitoring, reporting, or recordkeeping requirements, and therefore the requirements of Health and Safety Code Section 40727.2 are satisfied under subsection (g); and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 do not significantly affect air quality or emission limitations , and therefore the requirements of Health and Safety Code Section 40728.5 are inapplicable but that staff has nevertheless prepared a Socioeconomic Impact Assessment; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Socioeconomic Impact Assessment, as contained in the Final Staff Report, of Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

WHEREAS, the South Coast AQMD Governing Board finds that the Socioeconomic Impact Assessment for Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, as contained in the Final Staff Report are consistent with the provisions of Health and Safety Code Sections 40440.8, 40728.5, and 40920.6; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 will result in increased costs to the affected industries, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment, as contained in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Section 40725 and 40440.5; and

WHEREAS, the South Coast AQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the South Coast AQMD specifies the Planning and Rules Manager of Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

NOW, THEREFORE, BE IT RESOLVED, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. This information was presented to the South Coast AQMD Governing Board, whose members exercised their independent judgement and reviewed, considered and approved the information therein prior to acting on the proposed project; and

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, as set forth in the attached, and incorporated herein by reference; and

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to forward a copy of this Resolution, and Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan.

DATE:_____ _____

CLERK OF THE BOARDS

ATTACHMENT F

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: **NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PROJECT TITLE: **PROPOSED AMENDED RULE 218 – CONTINUOUS EMISSION MONITORING; PROPOSED RULE 218.2 – CONTINUOUS EMISSION MONITORING SYSTEM: GENERAL PROVISIONS; AND PROPOSED RULE 218.3 – CONTINUOUS EMISSION MONITORING SYSTEM: PERFORMANCE SPECIFICATIONS**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (South Coast AQMD), as Lead Agency, has prepared a Notice of Exemption pursuant to CEQA Guidelines Section 15062 – Notice of Exemption for the project identified above.

If the proposed project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse of the Governor's Office of Planning and Research to be posted on their CEQAnet Web Portal which, upon posting, may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2021. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

To: Governor's Office of Planning and Research - State Clearinghouse
1400 Tenth St, Suite 222
Sacramento, CA 95814-5502

From: South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Project Title: Proposed Amended Rule 218 – Continuous Emission Monitoring; Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions; and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

Project Location: The proposed project is located within the South Coast Air Quality Management District's (South Coast AQMD) jurisdiction, which includes the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties), and the Riverside County portion of the Salton Sea Air Basin and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin.

Description of Nature, Purpose, and Beneficiaries of Project: As part of transitioning South Coast AQMD's NOx RECLAIM program to a command-and-control regulatory structure, amendments are proposed to Rule 218 and two new rules, Proposed Rule (PR) 218.2 and PR 218.3 are proposed for adoption. Specifically, Proposed Amended Rule (PAR) 218 will incorporate a phase-out provision that requires an owner or operator of any Continuous Emission Monitoring System (CEMS) subject to Rules 218 and 218.1 to transition to comply with PR 218.2 and PR 218.3 in accordance with the implementation schedule as specified in subdivision (d) of either PR 218.2 or PR 218.3, as applicable. PR 218.2 and PR 218.3 establish requirements and specifications for installation and operation for CEMS at non-RECLAIM and former RECLAIM facilities. Specifically, PR 218.2 focuses on CEMS administrative requirements and has been developed to: 1) incorporate provisions retained from Rule 218 but with updates to the certification process for CEMS modifications and reporting requirements; and 2) incorporate a new provision that would require the continuous operation of CEMS, except during qualifying CEMS maintenance and repair or when an emission source is offline for at least one week. PR 218.3 focuses on CEMS performance specifications and has been developed to: 1) incorporate provisions retained from Rule 218.1 but with modifications to span range, data acquisition and handling system, relative accuracy test audit, and calibration gas requirements; and 2) incorporate a new provision which provides specifications on data handling methods for data measured below 10 percent or above 95 percent of the upper span value, emission data averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

Public Agency Approving Project:	**Agency Carrying Out Project:**
South Coast Air Quality Management District	South Coast Air Quality Management District

Exempt Status: CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption

Reasons why project is exempt: South Coast AQMD, as Lead Agency, has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. Since the proposed project addresses CEMS requirements for facilities transitioning from RECLAIM to a command-and-control regulatory structure, provides additional clarifications and flexibility to the rules, and codifies existing practices to improve transparency requirements without requiring physical modifications involving construction, it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption.

Date When Project Will Be Considered for Approval (subject to change):
South Coast AQMD Governing Board Public Hearing: March 5, 2021

CEQA Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Ryan Bañuelos	(909) 396-3479	rbanuelos@aqmd.gov	(909) 396-3982
Rules Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Yanrong Zhu	(909) 396-3289	yzhu1@aqmd.gov	(909) 396-3982

Date Received for Filing: _____ **Signature:** *(Signed Upon Board Approval)*

Barbara Radlein
Program Supervisor, CEQA
Planning, Rule Development, and Area Sources

ATTACHMENT G-1

(Adopted January 9, 1976)(Amended April 1, 1977)(Amended August 5, 1977)
(Amended April 6, 1979)(Amended August 7, 1981)(Amended May 14, 1999)(PAR 218 March 2021)

PROPOSED AMENDED RULE 218. CONTINUOUS EMISSION MONITORING

(a) Definitions

(1) ANALYZER- the part of the continuous emission monitoring system (CEMS) that analyzes the appropriate gaseous constituents of the conditioned gaseous sample or measures stack gas volumetric flow and fuel flow rates, as applicable.

(A) Contaminant Analyzer - the part of the CEMS that detects the air contaminant and represents those concentrations in a signal output.

(B) Diluent Analyzer - the part of the CEMS that detects oxygen, carbon dioxide or other diluent gas concentrations and represents those concentrations in a signal output.

(C) Fuel Flowmeter - the part of the CEMS that detects the parameters of all essential measurement sub-systems (e.g., temperature, pressure, differential pressure, frequency, gas density, gas composition, heating value) and generates signal outputs which are a function of the fuel flow rate and all essential measurement sub-system parameters.

(D) Stack Flowmeter - the part of the CEMS that detects the parameters from all essential measurement sub-systems (e.g., temperature, static and atmospheric pressure, gas density, gas composition, molecular weight, gas moisture content) and generates signal outputs which are a function of the stack gas volumetric flow rate and all essential measurement sub-system parameters.

(2) CALIBRATION - a procedure performed to ensure that the CEMS accurately measures and record air contaminant or diluent gas concentration, flow rate and other parameters necessary to generate data, as evidenced by calibration checks, and achieved by periodic manual or automatic adjustment.

(3) CALIBRATION CHECK - a procedure performed to determine the CEMS response to a given gaseous compound concentration. A certified calibration gas mixture is injected into the CEMS as close to the probe tip as practical.

(4) CERTIFIED CEMS - a CEMS installed, tested, operated, maintained, and calibrated according to the applicable requirements of Rule 218; that has met the applicable performance specifications according to Rule 218(c)(1)(B), and, has received written approval and conditions thereto applying, from the Executive Officer.

(5) CERTIFIED GAS MIXTURE - a gas mixture manufactured, analyzed and certified according to "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards" - EPA-600/R97/121, September 1997 Revision (EPA Protocol) or any subsequent version published by EPA. This definition incorporates by reference EPA Protocol.

(6) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) - the total combined equipment and systems required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable). The CEMS consists of three major subsystems: sampling interface, analyzer and data acquisition system.

(7) CONTINUOUS MONITORING - monitoring in which a minimum of one measurement (e.g., concentration, mass emission, flow rate) is taken and recorded each minute.

(8) DATA ACQUISITION SYSTEM (DAS) - the part of the CEMS that processes data generated by the analyzer and records the results, thus creating a permanent record of the output signal in terms of concentration, flow rate, and/or any other applicable parameter necessary to generate the required data in units of applicable standard. The DAS consists of all equipment such as a computer required to convert the original recorded values to any values required for reporting.

(9) DILUENT GAS - a gas present in a calibration gas mixture or in the source emissions which is present in quantities significantly larger than the air contaminant.

(10) LABORATORY APPROVAL PROGRAM (LAP) - a program administered by the District that grants test-method-specific approvals to independent testing laboratories or firms that perform tests to determine source compliance with District rules and regulations.

(11) MODIFICATION REQUIRING RECERTIFICATION - any change to the basic equipment, control equipment, contaminant concentration, interfering substances, or CEMS (or SCEMS) that is deemed by the Executive Officer to have a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of the stack emissions for which the CEMS (or SCEMS) is required.

(12) QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN - a written document in which the specific procedures for the operation, calibration and maintenance of a certified CEMS are described in detail, including additional quality assurance assessments and the corrective action system. The purpose of this plan is to ensure that the CEMS generates, collects and reports valid data that is precise, accurate, complete, and of a quality that meets the requirements, performance specifications, and standards of Rules 218 and 218.1.

(13) ROUTINE MAINTENANCE - preventive evaluation and repair (if necessary) of CEMS performed at specified intervals to preclude system failure. Routine maintenance may be performed as recommended by the manufacturer or a documented standard operating procedure determined through operating experience and approved by the Executive Officer. Repairs to a malfunctioning system are excluded from this definition.

(14) SAMPLING INTERFACE - that part of the CEMS that performs sample acquisition using one or more of the following operations: extraction, physical/chemical separation, transportation or conditioning of a representative sample from a designated source.

(15) SEMI-CONTINUOUS EMISSION MONITORING - a monitoring technique in which a minimum of one measurement (e.g. concentration, mass emission, flow rate) is taken and recorded every fifteen (15) minutes.

(16) SEMI-CONTINUOUS EMISSION MONITORING SYSTEM (SCEMS) - the total combined equipment and systems to semi-continuously determine air contaminant and diluent gas concentrations and/or the mass emission rate in a source effluent (as applicable) The system consists of three major subsystems: sampling interface, analyzer and data acquisition system. This class of monitoring includes but is not limited to gas chromatography, integrated sensitized tape analyzer, other sample integration based technologies, and time-shared CEMS.

(17) SYSTEM FAILURE - inability of the CEMS to meet the requirements of Rule 218.1, "Continuous Emission Monitoring Performance Specifications", or, Code of Federal Regulations, Title 40 - "Protection of Environment", Part 60 - "Standards of Performance for New Stationary Sources", Appendix F - "Quality Assurance Procedures".

(18) TIME-SHARING - a monitoring technique where an analyzer and possibly the associated sample conditioning system is used on more than one source.

(19) WORKING DAY - Monday through Friday excluding holidays.

(20) ZERO CHECK- a procedure performed to determine the response of the CEMS to a given zero gas standard by means of injecting the zero gas into the CEMS as close to the probe tip as practical.

(21) ZERO GAS - a gas containing less than a specified amount of the air contaminant or diluent gas which, when periodically injected into the CEMS, is used to check CEMS' response to the absence of the air contaminant or diluent gas.

(b) Applicability and Monitoring Requirements for New, Modified and Existing CEMS

(1) The provisions of this Rule shall apply to all sources that require CEMS as specified in the regulations or permit conditions, with the following exceptions:

(A) This Rule shall not apply to CEMS subject to Regulation XX - "Regional Clean Air Incentives Market (RECLAIM)", Regulation IX - "New Source Performance Standards (NSPS)", Regulation X - National Emission Standards for Hazardous Air Pollutants (NESHAPS), or Regulation XXXI - "Acid Rain Program".

(B) This Rule shall not apply to CEMS subject to permit conditions where the purpose of the CEMS is to monitor the performance of the basic and/or control equipment and not to determine compliance with any applicable limit or standard.

(C) This Rule shall not apply to CEMS where alternative performance specifications are required by another District rule.

(2) The owner or operator of any equipment subject to this Rule shall provide, properly install, operate, and maintain in calibration and good working order a certified CEMS to measure the concentration and/or emission rates, as applicable, of air contaminants and diluent gases, flow rates, and other

required parameters. The owner or operator shall also provide the necessary records and other data necessary to calculate air contaminant emission rates or concentrations, as specified in Rule 218, Sections (e) and (f).

(3) The owner or operator of any CEMS subject to Rules 218 and 218.1 shall continue to comply with the requirements specified in these rules until the applicable date of compliance specified in Rule 218.2 (d) or Rule 218.3 (d).

(c) Requirements for New and Modified CEMS and SCEMS

(1) Application and Approval Requirements for New and Modified CEMS

(A) The owner or operator of any equipment subject to this Rule shall submit to the Executive Officer an "Application for CEMS" or "Application for CEMS Modification", as applicable. Any application submitted on or after May 14, 1999, shall require an initial approval by the Executive Officer prior to installation of a new CEMS or modification of an existing CEMS. The Executive Officer shall notify the applicant in writing within 60 calendar days of receipt of an application for a new CEMS, or within 30 calendar days of receipt of an application for a modification to an existing CEMS, if the application contains sufficient information to be deemed complete. Where an application has been determined to be incomplete, the Executive Officer shall request specific information needed to complete the application. Upon receipt of any complete resubmittal or the additional information, plans or specifications after the application has been deemed incomplete, a new 30-day period shall begin during which the Executive Officer shall determine the completeness of the application and notify the applicant. Within 90 days of installation, a person operating or using CEMS shall undertake a series of certification tests. If the equipment served by the CEMS is not operating at the time of complete CEMS installation, then the CEMS shall undergo a series of certification tests within 90 days from the next start-up of the equipment served by the CEMS. The purpose of the certification tests is to demonstrate the CEMS performance pursuant to the specifications in accordance with the provisions of Rule 218, Section (c)(1)(B). The owner or operator shall notify the Executive Officer in writing at least 14 days

before the scheduled certification test dates. The certification tests shall be performed by a testing laboratory approved under the District Laboratory Approval Program. Data from such tests shall be submitted to the Executive Officer within 45 days following test completion. If satisfactory performance is demonstrated, final approval of the CEMS shall be granted. Subsequent operation and maintenance of the certified CEMS shall be in accordance with the provisions of Rule 218, Section (c)(1)(B). After final approval, modifications made to the CEMS shall be reviewed and approved by the Executive Officer according to the specifications stipulated in Rule 218, Section (c)(1)(B), and may require all or a portion of performance tests to be conducted.

(B) Upon submission of an "Application for CEMS" or "Application for CEMS Modification" as prescribed in Rule 218 Section (c)(1)(A), the applicant shall indicate either one of the following conditions:

(i) That the CEMS shall be reviewed and certified according to the provisions of Rule 218.1, "Continuous Emission Monitoring Performance Specifications", Section (b), and the subsequent operation and maintenance of the certified CEMS shall be in accordance with the provisions of Rule 218, Sections (b), (e), (f) and (g) and of the requirements of Rule 218.1(b) and (d), or,

(ii) That the CEMS shall be reviewed and certified according to the applicable provisions of the Code of Federal Regulations, Title 40 - "Protection of Environment", Part 60 - "Standards of Performance for New Stationary Sources" (40CFR60), Appendix B - "Performance Specifications" (Appendix B), and the subsequent operation and maintenance of the certified CEMS shall be in accordance with the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of 40CFR60, Appendix F - "Quality Assurance Procedures" (Appendix F).

Notwithstanding the requirements of Section (c)(1)(B)(ii), any alternative test methods for 40CFR60, Appendices B and F shall be those that are listed in Rule 218.1, Table 1 - Reference Methods.

(C) A "Notification of Pre-Approved Modification" and report of results of prescribed quality assurance checks may be submitted in-lieu of the "Application for CEMS Modification" when the modification has been made in accordance with the written technical guidance document approved by the Executive Officer.

(2) Application and Approval Requirements for New and Modified SCEMS

(A) In-lieu of submitting an application for CEMS per Rule 218, Section (c)(1), the owner or operator of any equipment subject to this Rule, may elect to submit an application for a SCEMS if the averaging time for the applicable limits(s) for which the CEMS is required is 24 hours or greater; or, if the owner or operator demonstrates, to the satisfaction of the Executive Officer, that no CEMS technology is commercially available for the applicable contaminant and the applicable limits.

(B) If the conditions in Rule 218, Section (c)(2)(A), above, do not apply, the owner or operator of any equipment subject to this Rule may still elect to submit an application for a SCEMS in lieu of a CEMS, subject to the following:

(i) The owner or operator demonstrates that the concentrations and/or emissions required to be monitored would be equivalent to that monitored by a CEMS for the applicable averaging period, to the satisfaction of the Executive Officer;

(ii) The SCEMS shall be capable to take and record a minimum of one measurement (concentration, mass emission rate and/or flow rate, as applicable) every 15 minutes allowing as equally spaced data points as practical;

(iii) The owner or operator shall include in the QA/QC plan the method of calculating the 15-minute averages for compliance determination to the applicable limit or standard;

(iv) If an exeedance of the allowable limit or standard is calculated using fewer than 100% valid data points, then the District shall use any relevant data for the operation of the equipment (basic and control, as applicable) to verify the calculated exeedance;

(v) If a time shared SCEMS is proposed, it shall meet the performance specifications of Rule 218.1, Section (e);

(C) The requirements for the application submittal and approval of CEMS as provided in Rule 218, Section (c)(1) shall also apply for SCEMS applications.

(3) Operation of CEMS or SCEMS During Certification Testing

CEMS or SCEMS shall be certified as configured for the normal operation of the CEMS or SCEMS with respect to sample acquisition, sample conditioning, pollutant/diluent detection, data requirements and reporting.

(4) Quality Assurance/Quality Control Plan for New or Modified CEMS or SCEMS

(A) The owner or operator of CEMS or SCEMS who elects the performance specifications according to Rule 218, Section (c)(1)(B)(i), shall submit to the Executive Officer for approval a CEMS QA/QC Plan within 45 days of CEMS installation and no later than 30 days before the certification tests.

(B) Alternative Quality Assurance Practices

The owner or operator of CEMS or SCEMS who elects the performance specifications according to Rule 218, Section (c)(1)(B)(i), may choose to develop alternative CEMS operational test requirements to be included in the CEMS QA/QC procedures that assure data of equivalent or better quality. These alternative QA/QC procedures shall be submitted with the facility QA/QC Plan and are subject to the approval of the Executive Officer.

(d) Requirements for Existing CEMS and SCEMS

(1) Requirements for Existing CEMS

(A) A CEMS installed and granted final approval before May 14, 1999 shall be maintained and operated according to the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(B) A CEMS application for initial and final approval submitted to the Executive Officer before May 14, 1999 shall be reviewed and approved by the Executive Officer according to the specifications and requirements of Rule 218.1, Sections (c) and (d). After final approval, the CEMS shall be operated and maintained according to

the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(C) Modifications requiring recertification to any existing CEMS shall be reviewed and approved according to the conditions under Rule 218 Section (c)(1)(B)(i) or (ii), as applicable. After final approval, the modified CEMS shall be operated and maintained according to the conditions under Rule 218, Section (c)(1)(B)(i) or (ii), as applicable.

(D) (i) All existing CEMS as prescribed in Rule 218, Sections (d)(1)(A) and (B) shall comply with the provisions of Rule 218.1, Sections (b) and (d), or 40CFR60 Appendices B and F, as applicable, and of Rule 218, Sections (b) and (c), no later than May 14, 2006.

(ii) The requirements of Rule 218, Section (d)(1)(D)(i) shall be waived for a period of three years if the owner or operator demonstrates, to the satisfaction of the Executive Officer, that the existing CEMS is providing data that are of a quality commensurate with the original performance specifications and other indicators of consistent data quality. Data quality factors that will be considered include:

(I) Relative Accuracy
(II) Calibration Error
(III) Calibration Drift
(IV) Zero Drift
(V) Valid data return percentage
(VI) Availability or up-time percentage
(VII) Breakdown frequency and duration
(VIII) Excursions beyond quality control limits in QA plan.

The owner or operator may apply for a waiver under this sub-section every three years after May 14, 2006. This sub-section shall not apply to existing CEMS that are required to comply with the provisions of Rule 218.1, Sections (b) and (d), or, 40 CFR60, Appendices B and F, as applicable, and Rule 218, Sections (b) and (c), as a result of CEMS modifications requiring recertification, rule implementation, or, compliance with a permit condition.

(E) The owner or operator of existing CEMS shall develop and implement a written Quality Assurance/ Quality Control (QA/QC) Plan no later than May 14, 2000. The written QA/QC Plan shall be kept on record and available for inspection upon request by the Executive Officer.

(F) On or before May 14, 2005, the owner or operator of any existing CEMS shall submit to the Executive Officer for approval:

(i) A certification signed by an authorized representative of the facility that the existing CEMS meets the requirements of Rule 218, Section (c), or,

(ii) An "Application for CEMS Modification", with the applicable fee(s) as specified in Rule 301, or,

(iii) An application for waiver according to Rule 218, Section (d)(1)(D)(i), with documentation supporting the required demonstration;

(2) Requirements for Existing SCEMS

(A) A SCEMS installed and granted final approval before May 14, 1999 shall be maintained and operated according to the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(B) A SCEMS application for initial and final approval submitted to the Executive Officer before May 14, 1999 shall be reviewed and approved by the Executive Officer according to the specifications and requirements of Rule 218.1, Sections (c) and (d). After final approval, the SCEMS shall be operated and maintained according to the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(C) Modifications requiring recertification to any existing SCEMS shall be reviewed and approved according to the conditions under Rule 218 Section (c)(1)(B)(i) or (ii), as applicable. After final approval, the modified CEMS shall be operated and maintained according to the conditions under Rule 218, Section (c)(1)(B)(i) or (ii), as applicable.

(D) The owner or operator of an existing SCEMS operating on or before May 14, 1999 shall be required to comply with the provisions of Rule 218.1 Section (e) - "Time Sharing Requirements" and with the

provisions of Rule 218.1 Sections (b) and (d), or, 40CFR60 Appendix B and F, as applicable, when the equipment served by the time-shared SCEMS is modified such that:

(i) One or more of the sources monitored requires a new monitoring range,

(ii) The operating permit is modified to require continuous monitoring, or,

(iii) An applicable source specific rule is adopted or revised to require continuous monitoring.

Subsequent operation and maintenance of the SCEMS shall be according to the provisions of Rule 218, Section (c)(1)(B)(i) or (ii), as applicable.

(e) Retention of Records for New, Modified and Existing CEMS and SCEMS

(1) The records of the data obtained from the CEMS recording devices shall clearly indicate concentrations or emission rates, or both, as specified by the Executive Officer. Records shall be maintained by the CEMS owner or operator for a minimum period of two years, unless otherwise specifically provided by another District regulation or permit conditions, and, shall be made available to the Executive Officer upon request.

(2) All calculations, raw parameter data used for calculations, records of the occurrence and duration of any start up, shutdown or malfunction, performance test, evaluation, calibration, adjustment and maintenance of the CEMS as well as calibration gas traceability shall be retained by the CEMS operator for a minimum period of two years unless otherwise specifically provided by another District regulation or permit conditions, and shall be made available to the Executive Officer upon request.

(f) Reporting Requirements for New, Modified and Existing CEMS and SCEMS

Unless otherwise specifically provided by another District regulation or permit conditions, the following reporting requirements shall apply to new, modified and existing CEMS and SCEMS:

(1) A CEMS owner or operator shall provide a summary of the concentration and/or emission rate data, as applicable, obtained from the CEMS, as well as any additional information specified by the Executive Officer, to evaluate the accuracy and precision of the measurements. The summary

shall be submitted once every six months to the Executive Officer, except when more frequent reporting is specifically required by another District rule, or the Executive Officer, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The summary report shall be submitted within 30 days following the end of the six-month period being reported, in the form and manner prescribed by the Executive Officer. The summary shall be maintained on-site in a retrievable and readable form and shall be made available to the Executive Officer upon request. The submitted summaries shall be available for public inspection at the District.

(2) The CEMS owner or operator shall report any concentration level and/or emission rate, as applicable, in excess of the regulated limit within 24 hours or the next working day after such occurrence in the form and manner prescribed by the Executive Officer. The report shall include the following information:

(A) Time intervals, date, and magnitude of the excess concentration level, nature and cause of the excess concentration (if known), corrective action(s) taken, preventive measure(s) adopted, specific location of CEMS, the equipment or CEMS involved and the facility contact person.

(B) The averaging period used for data reporting shall correspond to the averaging period specified in the rule or permit condition governing the concentration and/or emission rate, if applicable.

(3) Reports of CEMS Failure or Shutdown

(A) The CEMS owner or operator shall notify the Executive Officer within 24 hours or the next working day, in the event of a system failure or shutdown, which exceeds 24 hours. Zero and calibration checks and routine maintenance do not require reporting.

(B) In the case of a CEMS failure or shutdown, compliance with the provisions of Rule 218, Section (b) is waived for a period not to exceed 96 consecutive hours. Such waiver is extended beyond 96 consecutive hours only if a petition for an interim variance is filed in accordance with Regulation V and shall terminate at the time the Hearing Board acts upon such variance petition. CEMS owners or operators of qualified facilities may obtain a Hearing Board approval of an alternative operating condition following the

established procedure in District Rule 518.2 - Federal Alternative Operating Condition.

(C) Regularly scheduled CEMS maintenance shall be deferred until the report required under Rule 218, Section (f)(2) is made, if the system is measuring a concentration equal to or exceeding the emission standard, and if such deferral is not reasonably expected to result in damage to the system.

(D) Continuous emission monitoring requirement~~s~~ shall not apply during regular calibration checks of the system, or routine maintenance and repair lasting 60 minutes or less.

(g) Posting of Written Approval for New, Modified and Existing CEMS and SCEMS

The CEMS owner or operator of an approved CEMS shall affix a written notice of approval or a legible facsimile thereof, upon the equipment or within 26 feet of the equipment as prescribed in District Rule 206, in a manner such that it is clearly visible, legible, and safely accessible. In the event that the equipment is constructed or operated that the notice of approval or its legible facsimile cannot be so placed, such notice or legible facsimile shall be mounted on a location approved by the Executive Officer.

ATTACHMENT G-2

(Proposed Rule 218.2 March 2021)

PROPOSED RULE 218.2 CONTINUOUS EMISSION MONITORING SYSTEM: GENERAL PROVISIONS

(a) Purpose

The purpose of this rule is to specify requirements for Continuous Emission Monitoring Systems (CEMS), Alternative Continuous Emission Monitoring System (ACEMS), and Semi-Continuous Emission Monitoring System (SCEMS). This rule refers to Rule 218.3 for requirements for certifications and quality assurance of CEMS, ACEMS, and SCEMS. Unless otherwise specified, the owner or operator of the CEMS, ACEMS, or SCEMS is responsible for compliance with the requirements specified in this rule.

(b) Applicability

(1) This rule shall apply to the owner or operator of a CEMS, ACEMS, or SCEMS that is required by a South Coast AQMD rule, regulation or permit condition, except for a system that is to monitor:

(A) Performance of the basic or control equipment and not to determine compliance with any rule emission limit or emission standard; or

(B) NOx or SOx emissions subject to Regulation XX - Regional Clean Air Incentives Market (RECLAIM).

(2) All requirements specified for CEMS in this rule shall be applicable for ACEMS and SCEMS, unless otherwise specified.

(c) Definitions

(1) ALTERNATIVE CONTINUOUS EMISSION MONITORING SYSTEM (ACEMS) means a system that uses process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard on a continuous monitoring basis, which is demonstrated to the Executive Officer as having the same precision, reliability, accessibility, and timeliness as the data provided by a certified CEMS or certified CEMS component in accordance with Rule 218.2 and Rule 218.3.

(2) ANALYZER means the part of the continuous emission monitoring system (CEMS) that analyzes the appropriate gaseous constituents of the conditioned gaseous sample or measures stack gas volumetric flow and fuel flow rates, as applicable.

(A) Contaminant Analyzer - the part of the CEMS that detects the air contaminant and represents those concentrations in a signal output.

(B) Diluent Analyzer - the part of the CEMS that detects oxygen, carbon dioxide or other diluent gas concentrations and represents those concentrations in a signal output.

(C) Fuel Flowmeter - the part of the CEMS that detects the parameters of all essential measurement sub-systems (e.g., temperature, pressure, differential pressure, frequency, gas density, gas composition, heating value) and generates signal outputs which are a function of the fuel flow rate and all essential measurement sub-system parameters.

(D) Stack Flowmeter - the part of the CEMS that detects the parameters from all essential measurement sub-systems (e.g., temperature, static and atmospheric pressure, gas density, gas composition, molecular weight, gas moisture content) and generates signal outputs which are a function of the stack gas volumetric flow rate and all essential measurement sub-system parameters.

(3) CALIBRATION means a procedure performed to ensure that the CEMS accurately measures and records air contaminant or diluent gas concentration, flow rate and other parameters necessary to generate data.

(4) CALIBRATION ERROR TEST means a procedure performed to determine CEMS response to a given gaseous compound concentration by means of injecting a certified calibration gas mixture into the CEMS as close to the probe tip as practical.

(5) CEMS FAILURE means the CEMS or a component of the CEMS ceases normal operation, and thus is incapable of providing the required data to demonstrate compliance with the applicable limit or standard for which this CEMS is dedicated.

(6) CEMS FINAL CERTIFICATION LETTER means the final approval of CEMS certification or recertification, which at a minimum includes:

(A) Unit (emission source) and control equipment (if applicable) description.

(B) Stack description.

(C) Probe configuration and conditions.

(D) Instrument type, manufacturer, model number, and serial number for each of the contaminant analyzer (s), diluent analyzer, and fuel flowmeter (if applicable).

(E) Instrument type, manufacturer, and model number for:

(i) Sample conditioning system; and

(ii) Data acquisition and handling system and programmable logic controller.

(F) Certified span range(s) for each of the contaminant analyzer(s), diluent analyzer, and fuel or stack flowmeter (if applicable).

(7) CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification which may include, but not be limited to the CEMS sampling interface, gas conditioning system, analyzer, or data acquisition and handling system that has a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of emissions for the unit being monitored.

(8) CERTIFIED CEMS means a CEMS certified and maintained to meet the performance specifications pursuant to the applicable requirements of Rules 218.2 and 218.3.

(9) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) means the total combined equipment and systems, including the sampling interface, analyzers, and data acquisition and handling system, required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable).

(10) CONTINUOUS MONITORING means monitoring in which a minimum of one measurement (e.g., concentration, mass emission, flow rate) is taken and recorded each minute.

(11) DATA ACQUISITION AND HANDLING SYSTEM (DAHS) means the part of the CEMS that processes data generated by the analyzer and records the results, thus creating a permanent record of the output signal in terms of concentration, flow rate, and/or any other applicable parameter

necessary to generate the required data in units of applicable standard. The DAHS consist of all equipment such as a computer and the software required to convert the original recorded values to any values required for reporting.

(12) DILUENT GAS means a constituent of the flue gas that is measured by the CEMS in order to provide values to calculate emission levels.

(13) FORMER RECLAIM FACILITY means a facility, or any of its successors,

that was in the NOx Regional Clean Air Incentives Market (RECLAIM) as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the NOx RECLAIM program.

(14) LABORATORY APPROVAL PROGRAM (LAP) means a program administered by the South Coast AQMD for granting test-method-specific approvals to independent testing laboratories or firms that perform tests to determine source compliance with the South Coast AQMD rules and regulations.

(15) MAINTENANCE means preventive evaluation and adjustment (if necessary) of CEMS performed to preclude system failure. Maintenance may be performed as recommended by the manufacturer or a documented standard operating procedure determined through operating experience and approved by the Executive Officer. Repairs to a malfunctioning system are excluded from this definition.

(16) PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY means a sewage treatment facility, water delivery facility, or landfill gas control or processing facility, that is owned and operated by a public agency.

(17) RECLAIM means the REgional CLean Air Incentives Market program.

(18) RECLAIM FACILITY – means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.

(19) SAMPLING INTERFACE means that part of the CEMS that performs sample acquisition using one or more of the following operations: extraction, physical/chemical separation, transportation, or conditioning of a representative sample from a designated source.

(20) SEMI-CONTINUOUS EMISSION MONITORING SYSTEM (SCEMS) means an emission monitoring system that is different from a regular CEMS on response time and data acquisition frequency. SCEMS continuously takes and records measurements (e.g. concentration, mass emission, flow rate) at a minimum of once in every fifteen (15) minutes. SCEMS includes but is not limited to gas chromatography, integrated sensitized tape analyzer, other sample integration based technologies, and time-shared CEMS.

(21) TIME-SHARED CEMS means an emission monitoring system where the analyzer, and possibly the associated sample conditioning system, is used on more than one source. A time-shared CEMS is categorized as a type of SCEMS under Rules 218.2 and 218.3.

(22) UNIT for the purposes of this rule means the combustion source for which the certified continuous emission monitoring system, or alternative continuous emission monitoring system, monitors the combustion source's emissions.

(d) Implementation Schedule

(1) Prior to the implementation date specified in paragraphs (d)(2) through (d)(5), the owner or operator shall comply with:

(A) Rules 218 and 218.1 for a CEMS that is subject to paragraph (d)(2) or (d)(5); or

(B) Rule 2012 for a CEMS that is subject to paragraph (d)(3).

(2) For a CEMS certified to comply with Rules 218 and 218.1, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3);

(B) January 1, 2025, for any CEMS that was certified prior to January 1, 2022 but without an application submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for a CEMS recertification pursuant to paragraph (f)(2) or (f)(3); or

(C) The implementation date of a source-specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) as part of the implementation.

(3) For a CEMS certified to comply with Rule 2012, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) that is within twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility;

(B) Twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility, if there is no CEMS recertification pursuant to paragraph (f)(2) or (f)(3) during this 24-month period; or

(C) The implementation schedule of a source specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) as part of the implementation.

(4) If a CEMS that is subject to paragraph (d)(2) is sharing the sampling interface or other component(s) with another CEMS that is subject to paragraph (d)(3), the owner or operator of the CEMS shall meet the requirements of this rule based on the later implementation date specified in paragraphs (d)(2) and (d)(3).

(5) The owner or operator of a publicly owned sewage-water-landfill facility that has a CEMS certified to comply with Rules 218 and 218.1, shall meet the requirements of this rule no later than January 1, 2025, or by the implementation date of a source-specific rule requiring the CEMS to be certified or recertified, whichever is later.

(e) Monitoring Requirements

(1) The owner or operator of a CEMS shall install, maintain and operate the CEMS for continuous measurement according to all applicable requirements in Rules 218.2 and 218.3.

(2) If there is a CEMS failure, the owner or operator of a CEMS shall:

(A) Not be subject to the requirements of paragraph (e)(1) for up to 96 hours, provided that the CEMS is:

(i) Undergoing maintenance pursuant to the Quality Assurance and Quality Control Program for the CEMS; or

(ii) Damaged as a result of circumstances beyond the control of the owner or operator of the CEMS;

(B) Submit a notification pursuant to paragraph (i)(3), if the CEMS failure or shut down has occurred for more than 24 hours; and

(C) Submit a notification to the Executive officer for time extension beyond the time period specified in subparagraph (e)(2)(A) for an additional 96 hours, if the unit is not operating and no emissions are generated, as demonstrated pursuant to paragraph (e)(4).

(3) If a unit does not operate for a minimum of 168 consecutive hours, as demonstrated pursuant to paragraph (e)(4), the owner or operator of the CEMS is not subject to the requirements of paragraph (e)(1) after zero emissions have been recorded for a minimum of 4 hours after the unit shutdown, provided that the owner or operator of the CEMS:

(A) Maintains the CEMS operation pursuant to paragraph (e)(1) to record zero emissions for a minimum of 4 hours after the unit shutdown;

(B) Submits the notifications and report in accordance with paragraph (i)(4);

(C) Resumes CEMS operation and meet the requirements of paragraph (e)(1) for a minimum of 4 hours before the unit resumes operation or at which time any emissions are generated; and

(D) Conducts a calibration error test for each CEMS analyzer before any emissions are detected.

(4) Demonstrating a unit is not operating and no emissions are generated

(A) For a unit in which fuel combustion is the only source for the CEMS monitored emissions, the owner or operator of the CEMS shall meet one or more of the following provisions for the entire duration:

(i) Disconnect the fuel line to the unit and place blind flange(s) to prevent fuel flow;

(ii) Demonstrate there is no fuel flow to the unit based on a dedicated fuel flow meter that is quality assured according to manufacturer's recommendation;

(iii) Provide one or more gas bills indicating zero fuel consumption for the unit or the fuel line associated with the unit that is not operating; or

(iv) Demonstrate the unit is not operational based on a stack flow monitoring system certified according to subdivision (f), or any other monitoring system approved by the Executive Officer which shows the exhaust flow is less than the lowest quantifiable rate measurable by South Coast AQMD Methods 1-4.

(B) For a unit in which fuel combustion is not the only source for the CEMS monitored emissions, the owner or operator of the CEMS shall:

(i) Request the Executive Officer's written approval of the method(s) to demonstrate that the unit is not operating and no emissions are generated; and

(ii) Include the above approved method(s) in the QA/QC plan.

(f) Certification Requirements

(1) The owner or operator of a CEMS shall certify or recertify any CEMS that is:

(A) Installed after [*Date of Adoption*];

(B) Modified for any component that is either listed on the certification letter, Technical Guidance Document R-002, or Quality Assurance/Quality Control Plan, unless the Executive Officer determines that such certification or recertification is not necessary; or

(C) Determined by the Executive Officer that a CEMS recertification is required because the QA/QC or performance requirements for the CEMS cannot be achieved in accordance with Rule 218.3 subdivision (g).

(2) The owner or operator of the CEMS shall certify or recertify the CEMS, according to requirements set forth in Rule 218.3 subdivisions (e) and (f) and shall:

(A) Submit a CEMS application form pursuant to paragraph (f)(4);

(B) Obtain an initial approval of the application pursuant to paragraph (f)(5);

(C) Conduct the certification tests for the CEMS pursuant to paragraph (f)(6); and

(D) Obtain a final approval of the application for the CEMS final certification letter pursuant to paragraph (f)(7).

(3) For a CEMS modification required within 30 days due to CEMS failure, the owner or operator of the CEMS shall:

(A) Submit a written notification to the Executive Officer prior to the modification that includes the date and description of the planned modification;

(B) Submit a CEMS application form pursuant to paragraph (f)(4) within 30 days of the CEMS modification and obtain an interim approval of the application pursuant to paragraph (f)(5), except that the owner or operator of the CEMS may commence the CEMS modification without receiving notification from the Executive Officer pursuant to subparagraph (f)(5)(D);

(C) Conduct the certification tests for the CEMS pursuant to subparagraphs (f)(6);

(D) Recertify and operate the CEMS pursuant to Rule 218.3 subdivisions (e) and (f); and

(E) Obtain a final approval of the application for the CEMS final certification letter pursuant to paragraph (f)(7).

(4) The owner or operator of the CEMS shall submit an CEMS application form, FORM ST-220 or its updated version, and any other information specified in the form.

(5) The owner or operator of the CEMS shall receive an initial approval of the CEMS application from the Executive Officer prior to the CEMS installation or modification.

(A) The initial approval of the CEMS application shall be based on the information submitted in the application form that is:

(i) Complete; and

(ii) Accurate in providing information that reflects the unit and CEMS.

(B) Executive Officer shall notify the applicant that the application is complete, in writing within 60 calendar days of receipt of an

application for a new CEMS, or within 30 calendar days of receipt of an application for a modification to an existing CEMS.

(C) If the owner or operator of the CEMS receives notification from the Executive Officer that the application meets the requirements of subparagraph (f)(5)(A), the owner or operator of the CEMS may commence the CEMS installation or modification.

(D) If the owner or operator of the CEMS receives notification from the Executive Officer that the application for initial certification does not meet the requirements of subparagraph (f)(5)(A), the owner or operator of the CEMS shall provide the Executive Officer the specific information needed to meet the requirements of subparagraph (f)(5)(A) within the time specified by the Executive Officer in the notification.

(E) Upon receipt of any complete resubmittal or additional information, plans or specifications after the application has been deemed incomplete, a new 30-day period shall begin during which the Executive Officer shall notify the applicant if the application is complete and grant the initial approval.

(6) Certification Tests

(A) If the unit is operating at the time of completion of the CEMS installation, within 90 days of installation or modification of a CEMS, the owner or operator of a CEMS shall:

(i) Conduct the applicable certification tests specified in Rule 218.3 subdivision (f) for certification of any new CEMS or recertification of a modified CEMS; or

(ii) Meet the testing requirement for each type of CEMS modification in accordance with the latest South Coast AQMD Technical Guidance Documents R-002 and R-003 for recertification of a modified CEMS.

(B) If the unit is not operating at the time of completion of the CEMS installation, then the owner or operator of the CEMS shall conduct the certification tests of the CEMS within 90 days from the start-up and normal operation of the unit monitored by the CEMS in accordance with clause (f)(6)(A).

(C) The certification tests shall be performed by a testing laboratory approved under the South Coast AQMD Laboratory Approval Program.

(i) No later than 14 days before the certification test is conducted, the owner or operator of the CEMS shall notify the Executive Officer in writing the facility name, facility identification number, the device identification number, the certification test date(s) and time(s).

(ii) No later than 45 days of completing a certification test, the owner or operator of the CEMS shall submit the test report to the Executive Officer.

(7) Final Approval

(A) The Executive Officer will issue a CEMS final certification letter as the final approval, if the information in the application form and the certification test reports are determined to meet the requirements specified in Rule 218.3 subdivisions (e) and (f).

(B) The owner or operator of the CEMS shall be notified of the expected issuance date of the CEMS final certification letter by the Executive Officer within 60 days of receiving the certification test report(s) specified in paragraph (f)(6).

(C) The owner or operator of the CEMS shall be notified of a new issuance date of the CEMS final certification letter by the Executive Officer if additional data and/or test(s) are required prior to final approval. This new issuance data will be determined by the Executive officer within 60 days of receiving the additional data and/or test(s).

(8) Modification of CEMS Component Listed in Guidance Document R-002

For a CEMS modification on a component that is not identified on the CEMS final certification letter but is listed on the South Coast AQMD Technical Guidance Document R-002, the owner or operator of the CEMS shall either meet the requirements specified in paragraph (f)(2), or (f)(3) or the alternative CEMS certification requirements. The owner or operator of the CEMS that elects to meet the alternative CEMS certification requirements shall:

(A) Provide a written notification to the Executive Officer prior to the modification that includes the date and description of the planned CEMS modification;

(B) Conduct the required quality assurance tests, in accordance with the South Coast AQMD Technical Guidance Document R-002, within 60 days following the CEMS modification; and

(C) Submit the test reports to the Executive Office within 60 days after completing the tests.

(D) Subject to any further assessment instructed by the Executive Officer to validate the reliability, precision, or accuracy of the CEMS.

(9) The owner or operator of the CEMS that receives written notification from the Executive Officer that an alternative CEMS recertification submitted pursuant to subparagraph (f)(8) is disapproved, shall meet the requirements specified in paragraph (f)(2) or (f)(3) for that specific CEMS modification.

(10) Modification of CEMS Component Listed in Quality Assurance/Quality Control Plan

For a CEMS modification on a component that is not identified on the CEMS final certification letter or listed in the South Coast AQMD Technical Guidance Document R-002, but is listed in the Quality Assurance/Quality Control Plan, the owner or operator of the CEMS shall:

(A) Provide a written notification to the Executive Officer prior to the modification that includes the date and description of the planned CEMS modification;

(B) Submit a modified Quality Assurance/Quality Control Plan to the Executive officer within 30 days of notification; and

(C) Subject to any testing requirement and/or further assessment instructed by the Executive Officer if the modification is deemed to affect the reliability, precision, or accuracy of the CEMS.

(11) Emission Data During CEMS Certification or Recertification

(A) Upon completion of a successful calibration error test pursuant to Rule 218.3 subparagraphs (f)(1)(B) and (f)(1)(C) and prior to the Executive Officer's approval of final CEMS certification or recertification, all the emission data measured and recorded by the

CEMS shall be considered as valid quality assured data, beginning at the hour of passing the calibration error test. The calibration error test for this purpose must be passed before any of the required certification tests pursuant to paragraph (f)(6) is commenced but no more than 14 days prior to the completion of all the required certification tests.

(B) If the Executive Officer disapproves the final CEMS certification or recertification, the valid emission data pursuant to subparagraph (f)(11)(A) shall be retroactively considered invalid data and shall not be utilized for compliance demonstration or considered as available for CEMS data availability calculation, until the hour of the next time completing all the required certification tests pursuant to paragraph (f)(6).

(12) Operation of CEMS During Certification Testing

CEMS shall be certified as configured for the normal operation of the CEMS with respect to sample acquisition, sample conditioning, pollutant/diluent detection, data requirements, and reporting.

(13) SCEMS and ACEMS Certification and Recertification

(A) The owner or operator subject to this rule may elect to certify the following emission monitoring systems:

(i) A SCEMS, not including time-shared CEMS, provided that:

(I) Only commercially available SCEMS instrumentation is capable of accurately and precisely measuring the particular air contaminant concentration or other parameters used to calculate the emission concentration; and

(II) The concentrations and/or emissions required to be monitored would be equivalent to that monitored by a CEMS for the applicable averaging period.

(ii) A time-shared CEMS, provided that the units to be monitored by the time-shared CEMS are:

(I) Physically close to one another, and the proposed time-shared CEMS is approximately equidistant from all monitored units;

(II) Similarly sized and configured, and their gaseous emissions are of approximately the same compositions and concentrations; and

(III) Subject to a similar concentration limit.

(iii) An ACEMS, provided that the system, being designed to provide direct or indirect emission data, has the same precision, reliability, accessibility, and timeliness as a certified CEMS.

(B) Owners or operators of the SCEMS or ACEMS shall comply with the requirements specified in paragraphs (f)(1) through (f)(12) for the SCEMS or ACEMS certification and recertification.

(g) Quality Assurance/Quality Control (QA/QC) Plan

The purpose of a QA/QC plan is to ensure that the CEMS generates, collects and reports valid data that is precise, accurate, complete, and of a quality that meets the requirements, performance specifications, and standards of Rules 218.2 and 218.3.

(1) The owner or operator of the CEMS shall develop and store on site a QA/QC plan, which at a minimum shall include the step-by-step procedures and operations for the quality assurance tests, preventive maintenance, corrective action, recordkeeping, and reporting, in accordance with Guidelines for Continuous Emission Monitoring System Quality Assurance and Quality Control Plan.

(2) For a new CEMS QA/QC Plan, the owner or operator of the CEMS shall submit to the Executive Officer for approval a CEMS QA/QC Plan within 45 days of CEMS installation and no later than 30 days before the certification tests.

(3) For a revised CEMS QA/QC Plan, the owner or operator of CEMS shall submit to the Executive Officer for approval a CEMS QA/QC Plan within 30 days if:

(A) A CEMS modification was conducted and subject to the requirements specified in paragraphs (f)(2), (f)(3), (f)(8) or (f)(10); or

(B) A QA/QC plan revision is required by a provision of Rules 218.2 and 218.3 or requested by the Executive Officer.

(4) Alternative Quality Assurance Practices

The owner or operator of a CEMS may develop alternative CEMS operational test requirements to be included in the CEMS QA/QC procedures that assure data of at least the equivalent quality. These alternative QA/QC procedures shall be submitted with the facility QA/QC Plan and are subject to the approval of the Executive Officer.

(h) Recordkeeping Requirements

(1) The owner or operator of the CEMS, shall maintain records for any CEMS data measured and calculated:

(A) In accordance with Rule 218.3 paragraph (e)(4) and Rule 218.3 subdivision (i); and

(B) For the purpose of demonstrating compliance with any applicable, rule, regulation, or permit condition.

(2) The owner or operator of the CEMS, shall:

(A) Maintain records for the date, time, and description of the occurrence of the CEMS non-operation pursuant to paragraphs (e)(2) and (e)(3);

(B) Maintain a copy of the reports specified in subdivision (i);

(C) Record the cause, date, time period, and corrective action taken for any CEMS out-of-control period;

(D) Record the date, time, and description of the occurrence of any repair, adjustment, or maintenance to the CEMS;

(E) Record the date, time, and emission data of any measurement or test conducted for CEMS certification or recertification; and

(F) Maintain on site all records of any activity conducted according to the QA/QC plan, including but not limited to logbook, measured data and data processing, test reports, and certificates of calibrations gases being used.

(3) Records specified by paragraphs (h)(1) and (h)(2) shall be:

(A) Maintained for a minimum period of two years or a period specified in any rule or permit condition, whichever is longer; and

(B) Made available to the Executive Officer upon request.

(i) Reporting Requirements

(1) Semi-Annual Reporting

(A) The owner or operator of the CEMS shall provide a summary of the concentration and/or emission rate data, as applicable, obtained

from the CEMS, as well as any additional information specified by the Executive Officer, to evaluate the accuracy and precision of the measurements.

(B) Unless a more frequent reporting schedule is required in another South Coast AQMD rule or permit condition, the owner or operator of the CEMS shall submit a summary of the information specified in subparagraph (i)(1)(A) to the Executive Officer for every six-month period, from January 1 to June 30 and from July 1 to December 31, respectively, no later than 60 days after the six-month period.

(2) Excess Emission Reporting

The owner or operator of the CEMS shall notify the Executive Officer by calling 1-800-CUT-SMOGof the concentration level and/or emission rate, as applicable, in excess of the emission limit specified in the applicable rule within 24 hours or the next business day, whichever is later, after such occurrence that includes:

(A) Time intervals, date, and magnitude of the excess concentration level, nature and cause of the excess concentration (if known), corrective action(s) taken, preventive measure(s) adopted, specific location of CEMS, the equipment or CEMS involved and the facility contact person.

(B) The averaging period used for data reporting shall correspond to the averaging period specified in applicable rule or permit condition limiting the concentration and/or emission rate.

(3) CEMS Failure Reporting

(A) If there is a CEMS failure pursuant to paragraph (e)(2) that lasts more than 24 hours, the owner or operator of the CEMS shall notify the Executive Officer by calling 1-800-CUT-SMOG within 24 hours or the next business day, , whichever is later, after CEMS failure occurs.

(B) The notification shall include, at a minimum, the following information:

(i) The cause of the CEMS failure;

(ii) The time or estimated time when the monitoring device became non-operational;

(iii) The time or estimated time the monitoring device returned (or will return) to normal operation; and

(iv) The maintenance performed or corrective and preventative actions taken to prevent future non- operational conditions.

(4) CEMS Shutdown Reporting

In the event of a scheduled CEMS shutdown pursuant to paragraph (e)(3), the owner or operator of the CEMS shall submit:

(A) An initial notification by calling 1-800-CUT-SMOG, at least 96 hours prior to the scheduled CEMS shutdown, specifying the scheduled date and time for unit non-operation and CEMS shutdown;

(B) A written report, within 24 hours of CEMS shutdown that the unit is non-operational and there are no emissions during the period of unit shutdown pursuant to paragraph (e)(4); and

(C) A final notification by calling 1-800-CUT-SMOG, at least 8 hours prior to the scheduled CEMS restart, specifying the scheduled time for the CEMS restart and unit restart.

(5) CEMS Relative Accuracy Test Audit (RATA) Reporting

The owner or operator of the CEMS shall submit the RATA report within 60 days upon completion of the test and shall include all measured data for each run, and relative accuracy or *de minimis* value being calculated.

(j) Posting of Written Approval of CEMS Certification

The owner or operator of a certified CEMS shall affix a written notice of approval or copy thereof, upon the unit or within 26 feet of the unit as prescribed in Rule 206 – Posting of Permit to Operate, in a manner such that it is clearly visible, legible, and safely accessible. In the event that the unit is constructed or operated that the notice of approval or copy cannot be so placed, such notice or copy shall be mounted on a location approved by the Executive Officer.

(k) Exemption

(1) If a rule or permit specify CEMS requirements that are different than requirements specified in Rule 218.3, the owner or operator shall adhere to CEMS requirements in the rule or permit, unless otherwise notified by the Executive Officer.

ATTACHMENT G-3

(Proposed Rule 218.3 March 2021)

PROPOSED RULE 218.3 **CONTINUOUS EMISSION MONITORING SYSTEM: PERFORMANCE SPECIFICATIONS**

(a) Purpose

The purpose of Rule 218.3 is to establish performance specifications on certification and quality assurance and quality control program for Continuous Emission Monitoring Systems (CEMS), Alternative Continuous Emission Monitoring System (ACEMS), and Semi-Continuous Emission Monitoring System (SCEMS). Unless otherwise specified, the owner or operator of the CEMS, ACEMS, or SCEMS is responsible for compliance with the requirements specified in this rule.

(b) Applicability

(1) This rule shall apply to an owner or operator of a CEMS, ACEMS, or SCEMS that is required by a South Coast AQMD rule, regulation or permit condition, except for a system that is to monitor:

(A) Performance of the basic or control equipment and not to determine compliance with any rule emission limit or emission standard; or

(B) NOx or SOx emissions subject to the Regulation XX - Regional Clean Air Incentives Market (RECLAIM).

(2) All requirements specified for CEMS in this rule shall be applicable for ACEMS and SCEMS, unless otherwise specified.

(c) Definitions

(1) ALTERNATIVE CONTINUOUS EMISSION MONITORING SYSTEM (ACEMS) means a system that use process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard on a continuous monitoring basis, which is demonstrated to the Executive Officer as having the same precision, reliability, accessibility, and timeliness as the data provided by a certified CEMS or certified CEMS component in accordance with Rule 218.2 and Rule 218.3.

(2) ANALYZER means the part of the continuous emission monitoring system (CEMS) that analyzes the appropriate gaseous constituents of the conditioned gaseous sample or measures stack gas volumetric flow and fuel flow rates, as applicable.

(A) Pollutant Analyzer - the part of the CEMS that detects the air pollutant concentrations and represents those concentrations in a signal output.

(B) Diluent Analyzer - the part of the CEMS that detects oxygen (O2), carbon dioxide (CO2) or other diluent gas concentrations and represents those concentrations in a signal output.

(C) Fuel Flowmeter - the part of the CEMS that detects the parameters of all essential measurement sub-systems (e.g., temperature, pressure, differential pressure, frequency, gas density, gas composition, heating value) and generates signal outputs which are a function of the fuel flow rate and all essential measurement sub-system parameters.

(D) Stack Flowmeter - the part of the CEMS that detects the parameters from all essential measurement sub-systems (e.g., temperature, static and atmospheric pressure, gas density, gas composition, molecular weight, gas moisture content) and generates signal outputs which are a function of the stack gas volumetric flow rate and all essential measurement sub-system parameters.

(3) CALIBRATION means a procedure performed to ensure that the CEMS accurately measures and records the concentration of the specific air pollutant or diluent gas, flow rate and other parameters necessary to generate the required data, as evidenced by calibration error tests and achieved by periodic manual or automatic adjustment.

(4) CALIBRATION DRIFT - change in the CEMS output or response over a specific period of normal continuous operation when the air pollutant or diluent gas concentration at the time of the measurements is the same known value.

(5) CALIBRATION ERROR means the ratio of the absolute value of the difference between the air pollutant or diluent gas concentration indicated

by the CEMS and the known concentration of the calibration gas, to the upper span value, expressed as a percentage.

(6) CALIBRATION ERROR TEST means a procedure performed to determine CEMS response to a given gaseous compound concentration by means of injecting a certified calibration gas mixture into the CEMS as close to the probe tip as practical.

(7) CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification to the CEMS sampling interface, analyzer, or data acquisition and handling system that is deemed by the Executive Officer to have a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of emissions for the unit being monitored.

(8) CERTIFIED CEMS means a CEMS installed, tested, operated, maintained, and calibrated according to the applicable requirements of Rules 218.2 and 218.3; that has met the applicable performance specifications of Rule 218.3 and, has received written approval and conditions thereto applying, from the Executive Officer.

(9) CONFIDENCE COEFFICIENT means the 2.5 percent error confidence coefficient for the 95 percent confidence interval of a series of tests.

(10) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) means the total combined equipment and systems required to continuously determine air pollutants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable). The CEMS consists of three major subsystems: sampling interface, analyzer, and data acquisition and handling system.

(11) DATA ACQUISITION AND HANDLING SYSTEM (DAHS) means the part of the CEMS that records and processes data generated by the analyzer, thus creating a permanent record of the output signal in terms of concentration, flow rate, and any other applicable parameter *necessary* to generate the required data in units of applicable standard. The DAHS consists of all equipment such as a computer and software required to record data and convert the original recorded values to any values required for reporting.

(12) DILUENT GAS means a constituent of the flue gas that is measured by the CEMS, not because it is a pollutant, but because its measurement can be used to provide values used to calculate emission levels.

(13) FORMER RECLAIM FACILITY means a facility, or any of its successors,

that was in the NOx Regional Clean Air Incentives Market (RECLAIM) as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the NOx RECLAIM program.

(14) LINEARITY ERROR means the percentage error in linearity expressed in terms of the ratio of the absolute value of the difference between the reference value and the mean CEMS response value, to the reference value.

(15) LOWEST VENDOR GUARANTEED SPAN RANGE means the lowest span range that the vendor guarantees to be capable of meeting all current certification requirements of Rules 218.2 and 218.3, as applicable.

(16) MAINTENANCE means the preventive evaluation and adjustment (if necessary) of CEMS performed at specified intervals to preclude system failure. Maintenance may be performed as recommended by the manufacturer or a documented standard operating procedure determined through operating experience and approved by the Executive Officer. Repairs to a malfunctioning system are excluded from this definition.

(17) NINETY-FIVE PERCENT CONFIDENCE INTERVAL means the statistical estimation denoting a range of values which is expected to include a true value with a 95 percent probability.

(18) PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY means a sewage treatment facility, water delivery facility, or landfill gas control or processing facility, that is owned and operated by a public agency.

(19) QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN means a written document in which the specific procedures for the operation, calibration and maintenance of a certified CEMS are described in detail, including additional quality assurance assessments and the corrective action system. The purpose of this plan is to ensure that the CEMS generates, collects and reports valid data that is precise, accurate,

complete, and of a quality that meets the requirements, performance specifications, and standards of Rules 218.2 and 218.3.

(20) RECLAIM means the Regional Clean Air Incentives Market.

(21) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.

(22) REFERENCE METHOD means the official test method employed by the South Coast AQMD to determine compliance with the rules or permit conditions. A list of reference methods is identified in Table 1.

(23) RELATIVE ACCURACY means the absolute mean difference between the gas concentration or emission rate determined by the CEMS and the value determined by the RM plus 2.5 percent error of confidence coefficient of a series of tests, divided by the mean of the RM tests.

(24) RELATIVE ACCURACY TEST AUDIT means the relative accuracy test expressed in terms of the ratio of the sum of the absolute mean difference between the CEMS-generated data and the value determined by the applicable reference method or applicable standard, and the absolute confidence coefficient, to the mean of the reference method or applicable standard value for concentration, flow, or mass emission rate. The calculation is based on raw measured data that are not corrected by diluent gas.

(25) RESPONSE TIME means the time interval from a step change in the air pollutant or gas diluent concentration to the time when 95 percent of the corresponding final value is reached as displayed on the CEMS data recorder or acquisition system. The response time is determined by introducing a certified gas mixture into the CEMS upstream of the sampling interface and as close to the probe inlet as practicable.

(26) SAMPLING INTERFACE means the part of the CEMS that performs sample acquisition using one or more of the following operations: extraction, physical/chemical separation, transportation, or conditioning of a representative sample from a designated unit.

(27) SEMI-CONTINUOUS EMISSION MONITORING SYSTEM (SCEMS) means an emission monitoring system that is different from a regular CEMS on response time and data acquisition frequency. SCEMS continuously takes and records measurements (e.g. concentration, mass

emission, flow rate) at a minimum of once in every fifteen (15) minutes. SCEMS includes but is not limited to gas chromatography, integrated sensitized tape analyzer, other sample integration based technologies, and time-shared CEMS.

(28) SPAN RANGE means the full range that is 0% to 100% of the data display output that a monitor component has been calibrated to measure.

(29) SYSTEM BIAS means the difference between the gas concentrations exhibited by the CEMS when a calibration gas is introduced at a location upstream of the sampling interface, and as close to the sampling probe inlet as practicable, and when the same calibration gas is introduced directly to the analyzer.

(30) TIME-SHARED CEMS means an emission monitoring system where the analyzer, and possibly the associated sample conditioning system, is used on more than one source. A time-shared CEMS is categorized as a type of SCEMS under Rules 218.2 and 218.3.

(31) UNIT means, for the purposes of this rule, a combustion source for which the continuous emission monitoring system, semi-continuous emission monitoring system, or alternative continuous emission monitoring system, monitors the source's emissions.

(32) UNIT OPERATING HOUR means a clock hour during which a unit combusts any fuel either for part of the hour or for the entire hour.

(33) UPPER SPAN VALUE means the upper range value of a span range that is 100% of the data display output that a monitor component has been calibrated to measure.

(34) ZERO GAS means a gas containing less than a specified amount of the pollutant or diluent gas which, when periodically injected into the CEMS, is used to check CEMS' response to the absence of the air pollutant or diluent gas.

(d) Implementation Schedule

(1) Prior to the implementation date specified in paragraphs (d)(2) to (d)(5), the owner or operator shall comply with:

(A) Rules 218 and 218.1 for a CEMS that is subject to paragraph (d)(2) or (d)(5); or

(B) Rule 2012 for a CEMS that is subject to paragraph (d)(3).

(2) For a CEMS certified to comply with Rules 218 and 218.1, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2;

(B) January 1, 2025, for any CEMS that was certified prior to January 1, 2022 but without an application submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for a CEMS recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2; or

(C) The implementation date of a source-specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 as part of the implementation.

(3) For a CEMS certified to comply with Rule 2012, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 that is within twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility;

(B) Twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility, if there is no CEMS recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 during this 24-month period; or

(C) The implementation schedule of a source specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 as part of the implementation.

(4) If a CEMS that is subject to paragraph (d)(2) is sharing the sampling interface or other component(s) with another CEMS that is subject to paragraph (d)(3), the owner or operator of the CEMS shall meet the requirements of this rule based on the later implementation date determined by paragraphs (d)(2) and (d)(3).

(5) The owner or operator of a publicly owned sewage-water-landfill facility that has a CEMS certified to comply with Rules 218 and 218.1, shall meet the requirements of this rule no later than January 1, 2025, or the implementation date of a source-specific rule requiring the CEMS be certified or recertified, whichever is later.

(e) Pre-Certification Requirements

Prior to any certification, recertification, or relative accuracy test, the owner or operator of the CEMS shall meet all of the following standards:

(1) CEMS Location

The CEMS shall be installed at a location that enables measurements of air pollutant and diluent gas concentration, and flow rates are representative of the stack emissions of the unit.

(2) Sampling Location

(A) The monitoring system sampling probe tip and the reference method sampling port locations shall be determined according to the South Coast AQMD Method 1.1.

(B) The monitoring sampling probe shall be located where the sample obtained is representative of emissions.

(C) Each probe shall not interfere with any other probe when in use.

(D) The owner or operator may choose other sample locations subject to a written approval of the Executive Officer.

(E) If an alternate location is chosen as allowed in subparagraph (e)(2)(D) which does not conform with the South Coast AQMD Method 1.1:

(i) The absence of cyclonic flow for a stack flow monitor probe shall be demonstrated using the South Coast AQMD method 1.1, Section 2.4 in the Test Manual, Chapter X, Section 1.4 - "Alternative Site Selection Method", or 40 CFR, Part 60, Appendix A, Method 1, Section 11.4 – “Verification of Absence of Cyclonic Flow”; and

(ii) The absence of stratification shall be demonstrated using the South Coast AQMD method in the Test Manual, Chapter X, Section 13 - "Determination of Gaseous Constituent Stratification"; or

(iii) In the presence of stratification, alternatives to sampling site selection shall comply with the requirements specified in Attachment B section (C).

(3) Span Range

(A) The span range for air pollutant and diluent analyzers shall be set such that all data points are within 10 to 95 percent of the upper span value under normal operating conditions for the unit.

(B) For air pollutant analyzers:

(i) The upper span value shall be set between 150 and 200 percent of the concentration limit.

(ii) The upper span value may be set outside of the 150 to 200 percent of the concentration limit, but no lower than 120 percent, provided that:

(I) The owner or operator of the CEMS demonstrates that the span range will not be exceeded. Such demonstrations shall include, but not limited to, historical emissions data, historical process information, and historical operational information.

(II) A written approval from the Executive Officer shall be obtained prior to the upper span value being modified outside of the 150 to 200 percent of the concentration limit.

(C) If the owner or operator of the CEMS cannot meet both requirements specified in subparagraphs (e)(3)(A) and (e)(3)(B), the owner or operator of the CEMS shall be exempt from subparagraph (e)(3)(A), provided that the air pollutant analyzer is set at a span range approved by the Executive Officer that allows data points to fall at or below 10 percent of the upper span value.

(D) If an air pollutant analyzer monitors a unit with the concentration limit less than 5 ppm, the owner or operator of the CEMS shall be exempt from subparagraph (e)(3)(B), and the air pollutant analyzer shall be set at a span range approved by the Executive

Officer, provided that the approved upper span value for the analyzer is not higher than 10 ppm.

(E) The owner or operator of a CEMS analyzer with multiple span ranges shall set the span ranges for this analyzer pursuant to subparagraphs (e)(3)(A) through (e)(3)(D), for each span range or the combined span ranges, except for:

(i) The higher span range of a dual range analyzer; or

(ii) The highest span range of an analyzer with more than two span ranges.

(F) For diluent monitors, the span range shall be set such that the full range of oxygen and carbon dioxide concentrations can be measured. The upper span value shall be set at 25.0 percent O2 (maximum) and 1.0 percent CO2 (minimum) concentrations, or at a value approved by the Executive Officer.

(4) The Data Acquisition and Handling System (DAHS) of the CEMS shall meet the following requirements:

(A) Record data from monitored parameters at least once every minute for CEMS.

(B) Record data from monitored parameters at least once every 15 minutes for SCEMS.

(C) The acquisition rate shall be set at a constant rate such that the data points are equally spaced.

(D) The sample acquisition rate during certification and relative accuracy test audit(s) shall be the same as the sample acquisition rate during CEMS or SCEMS normal operation.

(E) Record all status codes specified in Table 2 for all data points.

(F) Utilize all valid data points to determine compliance with applicable limit(s), certification testing, and relative accuracy test audit(s).

(G) Incorporate all applicable data handling requirements specified in subdivision (i).

(5) Operational Period

The CEMS operational period prior to any certification tests shall be a minimum of 168 continuous hours.

(f) Certification Test Requirements and Specifications

The owner or operator of the CEMS shall perform a series of certification tests to demonstrate the acceptability of CEMS performance for a CEMS certification or recertification. Unless specified otherwise, the required certification tests and specifications shall, at a minimum, include the following:

(1) Seven-Day Calibration Drift Testing

The owner or operator of a CEMS shall perform a seven-day calibration drift test for each span range for pollutant analyzers, diluent analyzers, and stack flow monitors.

(A) A seven-day calibration drift test shall be comprised of a series of eight (8) calibration error tests during a seven-day period performed once each day with an interval of 24 hours plus a 2-hour grace period for each test, when the CEMS is in continuous operation.

(B) Each calibration error test shall be performed for:

(i) Pollutant and diluent analyzers, at the low and high ranges, which is at 0 to 20, and 80 to 100 percent of the upper span value; and

(ii) Stack flow monitors, by introducing a zero-reference value to the transducer or transmitter.

(C) Calibration error for each calibration error test during the entire testing period, as calculated using Equation 1 in Table 3, shall not exceed:

(i) 2.5 percent of the upper span value for pollutant and diluent analyzers, and

(ii) 3.0 percent of the upper span value for stack flow monitors.

(2) Analyzer Enclosure

(A) The analyzer shall be contained in an environmentally controlled enclosure and equipped with an alarm and temperature recording device that provides an audible alert that the temperature drift for the analyzer enclosure exceeds the manufacturer's recommended specifications. The owner or operator of the CEMS shall make corrective actions within 8 hours of receiving the audible alert.

(B) In lieu of subparagraph (f)(2)(A), the owner or operator of the CEMS shall perform the 2-hour calibration error tests in meeting

the analyzer enclosure requirement, provided that the 2-hour calibration error is performed:

(i) Once every two hours as close to 2-hour intervals as practicable, with total of thirteen consecutive tests performed;

(ii) When ambient temperature is expected to vary diurnally at least 30 degree Fahrenheit (^{o}F); and

(iii) At the low and high ranges, which is at 0 to 20, and 80 to 100 percent of each span range respectively.

(iv) With calibration error meeting the requirements specified under subparagraph (f)(1)(C).

(C) The owner or operator of the CEMS shall be exempt from subparagraph (f)(2)(A), provided that the CEMS is located:

(i) In a geographic area where seasonal high and low temperatures do not exceed the operational temperature specifications for the analyzer;

(ii) In a geographic area where monthly maximum temperature variation is less than 30^{o}F for all months of the year; and

(iii) The CEMS is located in a site that is protected from radiation and convection heating sources.

(3) Relative Accuracy Test Audit

The owner or operator of a CEMS shall perform a relative accuracy test audit for pollutant concentration that is not corrected by diluent gas, O2/CO2 diluent gas concentration, stack flow, and mass emission rate, whichever is applicable to the CEMS, in the as-found unit operating condition.

(A) There shall be a minimum of nine sets of test data generated.

(B) If the number of tests exceeds nine sets, data may be discarded if it is identified as an outlier according to the South Coast AQMD Technical Guidance Document R-004 (TGD R-004), or for valid reasons (e.g., process upsets, CEMS malfunction, etc.) which must be substantiated with appropriate documentation and subject to approval by the Executive Officer.

(C) The relative accuracy shall be calculated according to Equation 4 in Table 3 and expressed as a percentage.

(D) Alternatively, a *de minimis* value shall be determined according to Equation 5, Equation 6, and Equation 7 in Table 3 for pollutant/diluent gas, stack flow, and mass emission respectively.

(E) The owner or operator of the CEMS shall meet the following relative accuracy or *de minimis* value (no more than):

(i) For pollutant concentrations, a relative accuracy of 20.0 percent of the mean value of the reference method, or the *de minimis* concentration as follows:

Pollutant	*De minimis*
NOx	0.5 ppm (or 1.0 ppm when the rule or permitted concentration limit for the unit is higher than 5.0 ppm)
SO_2	2.0 ppm
CO	2.0 ppm (or the rule or permitted concentration limit for the unit when it is lower than 2.0 ppm)
Reduced Sulfur Compounds	4.0 ppm

(ii) For diluent concentrations, a relative accuracy of 10.0 percent of the mean value of the reference method, or a relative accuracy of 20.0 percent when the measured diluent gas, O2 or CO2, is at or below 15 percent, or the *de minimis* value of 1.0 percent diluent gas.

(iii) For stack flow monitoring systems including stack flow monitors and fuel flow measuring devices in conjunction with F-factor in determining stack flow, a relative accuracy of 15.0 percent of the mean value of the reference method, or the *de minimis* value when the mean stack gas velocity obtained by the reference method test is less than 15 feet per second.

(iv) For mass emission rates, a relative accuracy of 20.0 percent of the mean value of the reference method for

mass emission rates, or the *de minimis* value when the mean stack gas velocity obtained by the reference method test is less than 15 feet per second.

(4) Within fourteen days of a relative accuracy test audit, the owner or operator of the CEMS shall demonstrate compliance with the following requirements:

(A) Response Time

(i) The response time for CO CEMS shall not exceed 1.5 minutes except where there is a technical limitation, in which case the response time shall be 5 minutes; and

(ii) The response time for all other CEMS and stack flow monitoring system shall not exceed 5 minutes.

(B) NOx Converter Efficiency

NOx converter efficiency test shall be conducted to indicate an average converter efficiency greater than 90 percent.

(C) Sampling System Bias Check

(i) The CEMS system bias shall not exceed 5.0 percent of each upper span range for pollutant analyzers.

(ii) The owner or operator of the CEMS shall include in the facility QA/QC Plan, criteria for excessive drift (e.g. control limits on cumulative drift) and appropriate diagnostic techniques to identify sources of analyzer drift and system bias when control limits are exceeded.

(D) Concentration Stratification

The owner or operator of the CEMS shall demonstrate the absence of stratification and locate the CEMS probe in accordance with Attachment B.

(E) Cyclonic Flow

If the CEMS determines mass emission rate, the owner or operator of the CEMS shall perform the cyclonic flow test pursuant to clause (e)(2)(E)(i).

(F) Linearity Error for Pollutant and Diluent Gas Analyzers

(i) A linearity error test shall be comprised of three tests for each span range.

(ii) Each test shall be performed by introducing calibration gas into the CEMS at the low, middle and high ranges, which are 20 to 30, 50 to 60, and 80 to 100 percent of the upper span value respectively.

(iii) The same calibration gas shall not be used twice in succession during the linearity error tests.

(iv) Linearity error shall not exceed 5.0 percent of the calibration gas concentration, as calculated pursuant to Equation 3 in Table 3.

(v) In lieu of the requirement as specified in clause (f)(4)(F)(iv), for a pollutant analyzer with an upper span value less than or equal to 5 ppm, linearity error shall not exceed 5.0 percent of the upper span value, as calculated pursuant to Equation 3a in Table 3.

(5) Alternative Emission Monitoring System (ACEMS)

(A) In lieu of certifying a CEMS according to the requirements specified in paragraphs (f)(1) through (f)(4), the owner or operator shall request the Executive Officer to certify an alternative emission monitoring system that is at a minimum equivalent in relative accuracy, precision, reliability, and timeliness to a CEMS for that unit, according to the criteria specified in 40 CFR Part 75 Subpart E.

(B) Substitute criteria is acceptable if the applicant demonstrates to the satisfaction of the Executive Officer that the proposed alternative monitoring device is at minimum equivalent in relative accuracy precision, reliability, and timeliness to a CEMS for that unit.

(C) Upon approval by the Executive Officer, the substitute criteria specified in subparagraph (f)(5)(B) shall be submitted to the federal Environmental Protection Agency as an amendment to the State Implementation Plan (SIP).

(6) All certification tests shall be performed by testing firms/laboratories who have received approval through the South Coast AQMD's laboratory approval program.

(g) Quality Assurance Testing Requirements and Specifications

After completing the certification testing pursuant to subdivision (f), the owner or operator of the CEMS shall operate and maintain the CEMS according to the following quality assurance testing requirements and specifications, for all applicable analyzer span ranges of the CEMS, unless otherwise specified.

(1) Calibration Error

The owner or operator of a CEMS shall perform the calibration error test for pollutant analyzers, diluent analyzers, and stack flow monitors. The calibration error test is not applicable to an ACEMS or a fuel flow measuring device in conjunction with F-factor in determining stack flow.

(A) A calibration error test shall be performed for:

(i) Pollutant and diluent analyzers, for every 24 hours with a 2-hour grace period during which emissions are generated, at the low (0 to 20 percent) and high (80 to 100 percent) of the upper span value of each span range that has recorded data since the last calibration error test; and

(ii) Stack flow monitors, for every 14-day period during which emissions flow through the stack, by introducing a zero reference value to the transducer or transmitter

(B) A calibration error test shall be performed within 4 hours of the unit restart and normal operation, if the unit restart is after a period longer than the testing cycle specified in subparagraph (g)(1)(A) when no emissions are generated.

(C) A successful calibration error test, with the calibration error calculated using Equation 1 in Table 3, shall not exceed two times the calibration error specification in subparagraph (f)(1)(C) for each range.

(D) Any calibration error test result, which does not exceed two times the calibration error specification in subparagraph (f)(1)(C) but is greater than the specification in subparagraph (f)(1)(C), shall be addressed by the QA/QC Plan for possible remediation.

(E) Data recorded by the CEMS pollutant and diluent analyzers are validated for 26 clock hours (i.e., 24 hours plus a 2-hour grace period) beginning from the hour of completing a successful calibration error test, and either ending after 26 hours, or ending

at the hour of failing any quality assurance test specified under subdivision (g) within the 26-hour period.

(F) Data recorded by the CEMS at the unit restart that are prior to the hour of completing a successful calibration error test are validated starting from the hour of unit restart, if the owner or operator of the CEMS conducts a successful calibration error test in accordance with subparagraphs (g)(1)(B) and (g)(1)(C).

(2) Relative Accuracy Test Audit

The owner or operator of the CEMS shall conduct the relative accuracy test audit for pollutant concentration that is not corrected by diluent gas, O2/CO2 diluent gas concentration, stack flow, and emission rate, whichever is applicable to the CEMS.

(A) A relative accuracy test audit shall be performed annually no later than the end of the calendar quarter of the previous relative accuracy test, in the as-found unit operating condition.

(B) During any relative accuracy test audit, the owner or operator shall comply with all the requirements in paragraphs (f)(3) and (f)(4), except that the owner or operator of the CEMS:

(i) Is not required to conduct linearity error check.

(ii) May request a waiver from stratification and cyclonic flow requirements specified in subparagraphs (f)(4)(D) and (f)(4)(E) respectively, by submitting to the Executive Officer, for approval, any applicable documentation or previous test or historical data that meets the stratification and cyclonic flow requirements.

(C) The CEMS shall meet the relative accuracy or *de minimis* standards as specified in paragraph (f)(3).

(D) If the unit for which the CEMS is certified to monitor is not operating or generating emissions when a relative accuracy test audit is due, the relative accuracy testing audit shall be performed within 14 days after the unit is restarted and resumes normal operation.

(3) Cylinder Gas Audit for Pollutant and Diluent Gas Analyzers

(A) The owner or operator of the CEMS shall conduct a cylinder gas audit:

(i) For every calendar quarter when relative accuracy test audit is not conducted, but in no more than three quarters in succession;

(ii) According to the provisions of 40 CFR 60, Appendix F; and

(iii) Using calibration gas as specified in subdivision (h).

(B) The owner or operator of the CEMS is not required to conduct the cylinder gas audit for a calendar quarter when it is due, provided that within that calendar quarter:

(i) The CEMS has passed a linearity error check according to subparagraph (f)(4)(F) or the provisions of 40 CFR 75, Appendix A; or

(ii) The accumulative unit operating hours are no more than 168 hours.

(4) The owner or operator of an ACEMS shall conduct:

(A) Daily checks with the ACEMS modeling software to:

(i) Verify that the emission values generated by the ACEMS modeling software are consistent as certified, given specific parameter inputs;

(ii) Perform the daily check pursuant to the same schedule specified in clause (g)(1)(A)(i) and subparagraph (g)(1)(B); and

(iii) Validate the same time period as defined in subparagraph (g)(1)(E) with a successful daily check.

(B) Periodic calibrations of the sensors pursuant to manufacturer's specifications for each component.

(5) The owner or operator of a stack flow monitor shall conduct:

(A) Daily flow monitor interference checks, according to the same schedule as specified in clause (g)(1)(A)(i) and subparagraph (g)(1)(B), with each interference check validating the same time period as specified in subparagraph (g)(1)(E); and

(B) A leak detection check no later than the end of each calendar quarter, if the stack flow is determined by a differential pressure flow monitor.

(6) The owner or operator of a fuel flow measuring device in conjunction with F-factor in determining stack flow shall:

(A) Maintain the fuel flow measuring device in accordance with the manufacturer's recommendation; and

(B) Include the maintenance schedule and activities in the CEMS QA/QC plan.

(h) Calibration Gas and Zero Gas

(1) For the purpose of Rules 218.2 and 218.3, the owner or operator of the CEMS shall ulitilize the calibration gas identified in the following:

(A) U.S. EPA Protocol Gas that are calibration gas mixtures manufactured, analyzed and certified in accordance with the Section 2 "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards" - EPA-600/R-12/531, May 2012, or U.S. EPA's the most recently published protocol for certification of gaseous certification standards.

(B) National Institute of Standards and Technology (NIST) Standard Reference Materials (SRM).

(C) NIST Standard Reference Material-Equivalent Compressed Gas Primary Reference Materials that are calibration gas mixtures listed in a declaration of equivalence in accordance with subparagraph (h)(1)(A).

(D) NIST Traceable Reference Materials that are calibration gas mixtures tested by and certified by NIST to have a certain specified concentration of gases. NIST Traceable Reference Materials may have different concentrations from those of standard reference materials.

(E) NIST/EPA-approved certified reference materials (CRM) that are calibration gas mixtures approved by U.S. EPA and NIST as having specific known chemical or physical property values certified by a technically valid procedure as evidenced by a certificate or other documentation issued by a certifying standard-setting body.

(F) For gas calibration standards not covered by programs specified in subparagraphs (h)(1)(A) through (h)(1)(E), the owner or

operator of the CEMS shall obtain the Executive Officer's approval for using any of the following alternatives:

(i) The Manufacturer of Calibration Gas' Intermediate Standard that is a compressed gas calibration standard assayed and certified by direct comparison to a calibration gas identified under subparagraph (h)(1)(B), (h)(1)(C), (h)(1)(D), or (h)(1)(E), in accordance with Section 2.1.3.1 of the "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards" - EPA-600/R-12/531, May 2012, or U.S. EPA's the most recently published protocol for certification of gaseous certification standards;

(ii) NIST Research Gas Mixture that is a calibration gas mixture developed by agreement of a requestor and NIST that NIST analyzes and certifies as "NIST traceable"; or

(iii) The manufacturer of calibration Gas' alternative certification protocol for the specific compound or compounds subject to the Executive Officer's approval.

(I) The procedures of the U.S. EPA Protocol shall be used for gas calibration standards, except that the manufacturer of calibration gas must identify a recertification period and submit data documenting the applicability of this period. The manufacturer of calibration gas may submit alternative performance standards for calibration gas certification and recertification, based on supporting technical data also provided by the manufacturer of calibration gas.

(II) If there is no existing National Institute of Standards and Technology (NIST) standard for the measured parameter, the manufacturer of calibration gas may submit an alternative reference standard and the supporting technical

data that define the stability, accuracy, and precision of the alternative reference standard.

(III) The owner or operator of the CEMS may submit an alternative protocol to the U.S. EPA Protocol, provided that the owner or operator of the CEMS demonstrates through supporting technical data that the procedures therein are not applicable to the constituent in the calibration gas standard being certified.

(G) Compressed and/or filtered air, such as instrument air, may also be used instead of oxygen span gas provided that the owner or operator demonstrates, to the satisfaction of the Executive Officer, that it is of equivalent quality to the calibration gas standards above. As part of such documentation, the owner or operator shall include in their QA/QC plan the process or operation in producing such compressed and/or filtered air and periodically checking that compressed air and/or filtered air continues to meet the calibration gas standards.

(2) Zero Gas

The owner or operator of the CEMS shall ulitilize zero gases meeting the following criteria:

(A) For gaseous air pollutant monitors, the zero gas shall be certified by the manufacturer to contain no more than 0.1 ppm of the air pollutant analyzed by the subject monitor or 1.0 percent of the applicable standard, whichever is less.

(B) For carbon monoxide monitors, the zero gas shall be certified by the manufacturer to contain less than 0.5 ppm carbon monoxide or 1.0 percent of the applicable standard, whichever is less.

(C) For carbon dioxide and oxygen monitors, the zero gas shall be certified by the manufacturer to contain less than 1.0 ppm carbon dioxide or oxygen.

(D) Compressed and/or filtered air, such as instrument air, may also be used instead of zero gas provided that the owner or operator demonstrates, to the satisfaction of the Executive Officer, that it is of equivalent quality to the above zero gas standards. As part

of such documentation, the owner or operator shall include in their QA/QC plan the process or operation in producing such compressed and/or filtered air and periodically checking that compressed air and/or filtered air continues to meet the zero gas standards.

(i) Data Handling

(1) Data Points Below 10 Percent of the Upper Span Value

If a data point falls below 10 percent of the upper span value, the owner or operator of the CEMS shall record and report that data point according to the following:

(A) For a CEMS analyzer with certified single span range, the owner or operator of the CEMS shall report any data point that falls below 10 percent of the upper span value, at the 10 percent value of the upper span value.

(B) For a CEMS analyzer with certified multiple span ranges, the owner or operator of the CEMS shall report a data point at:

(i) Ten (10) percent of the upper span value of the higher span range if the data point is below 10 percent of the upper span value of the higher span range but above 95 percent of the upper span value of the lower span range.

(ii) Ten (10) percent of the upper span value of the:

(I) Lower span range if the data point is below 10 percent of the upper span value of the lower span range for a dual range analyzer; or

(II) Lowest span range if the data point is below 10 percent of the upper span value of the lowest span range for an analyzer with more than two span ranges.

(iii) The monitored value if the data point is within 10 to 95 percent of the upper span value of any span range.

(C) In lieu of subparagraphs (i)(1)(A) and (i)(1)(B), in the event that any data point falls below 10 percent of the upper span value of the span range that is the lowest vendor guaranteed span range for that CEMS analyzer, the owner or operator of the CEMS shall report the data point at:

(i) Ten (10) percent of the upper span value; or

(ii) The actual measured value, provided that the CEMS meets the Supplemental and Alternative Performance Requirements that are specified in Attachment A of this rule.

(D) Data points recorded and reported pursuant to clause (i)(1)(A) and subparagraphs (i)(1)(B) and (i)(1)(C)(i), shall be flagged as below 10 percent of the upper span value for CEMS status code.

(2) Data Points Above 95 Percent of the Upper Span Value

If a data point is above 95 percent of the upper span value , the owner or operator of the CEMS shall record and report the data point according to the following:

(A) For a CEMS analyzer with certified single span range, the permit holder and operator of the CEMS shall record any data point that is above 95 percent of the upper span value, at the 95 percent of the upper span value.

(B) For a CEMS analyzer with certified multiple span ranges, the owner or operator of the CEMS shall report the data point at:

(i) Ten (10) percent of the upper span value of the higher span range if the data point is below 10 percent of the upper span value of the higher span range but above 95 percent of the upper span value of the lower span range.:

(ii) Ninety-Five (95) percent of the upper span value of:

(I) The higher span range if it is above 95 percent of the upper span value of the higher span range for a dual range analyzer; or

(II) The highest span range if it is above 95 percent of the upper span value of the highest span range for an analyzer with more than two span ranges.

(iii) The monitored value if the data point is within 10 to 95 percent of the upper span value of any span range.

(C) The owner or operator of the CEMS shall:

(i) Flag any data point that is recorded and reported pursuant to clause (i)(2)(A) and subparagraph (i)(2)(B)(ii) as

above 95 percent of upper span value for CEMS status code; and

(ii) Calculate a spiking data percentage for each calendar quarter using the following equation:

Spiking Data Percentage = F/T x 100%

Where:

F is the numberof flagged one-minute data points recorded pursuant to clause (i)(2)(C)(i) for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit; and

T is the total numberof one-minute data points recorded for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit.

(D) The owner or operator of a CEMS shall submit a CEMS application within 30 days to certify an additional span range, if in any consecutive four calendar quarter period, there are two calendar quarters that for each quarter:

(i) The percentage determined pursuant to clause (i)(2)(C)(ii) is over 1.0 percent; and

(ii) The total unit operating hours for the quarter are more than 50 hours.

(3) If the owner or operator of a certified CEMS is meeting the quality assurance requirements as specified in subdivision (g), data recorded and reported pursuant to paragraphs (i)(1) and (i)(2) shall be valid data for quantification, and available for the purpose of determining CEMS data availability.

(4) Emission Data Averaging

The owner or operator of the CEMS shall perform emission data averaging according to the following methods:

(A) An hourly average shall cover the 60-minute period commencing on the hour. An hourly average shall be computed as follows utilizing all valid data points:

(i) For a full or partial unit operating hour, at least one valid data point in each 15-minute quadrant of the hour in which the unit operates is required to calculate the hourly average.

(ii) For any unit operating hour in which required maintenance or quality-assurance activities are performed:

(I) If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average; or

(II) If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.

(B) For continuous monitoring systems used to demonstrate compliance for a 15-minute interval, emission data may be averaged for each 15-minute quadrant of the hour in which the unit operates, utilizing all valid data points.

(C) For continuous monitoring systems used to demonstrate compliance for an interval greater than one-hour, emission data may be averaged for the required interval utilizing hourly averages computed in accordance with subparagraph (i)(4)(A).

(D) Pollutant concentration correction by diluent gas shall be performed with the averaged value at the interval required for compliance demonstration.

(E) Comparable emission data average requirements specified in source specific rules or permit conditions shall supersede subparagraphs (i)(4)(A) through (i)(4)(D).

(5) CEMS Data Availability

(A) On a quarterly basis, the owner or operator of the CEMS shall calculate data availability for each analyzer using the following equation:

Data Availability = Y/Z x 100%

Where:

Y is the total unit operating hours during the calendar quarter when the monitor provided data, excluding the operating hours identified under subparagraph (i)(5)(B) and CEMS out-of-control period specified under subparagraph (i)(6)(A); and
Z is the total unit operating hours during the calendar quarter, excluding the operating hours identified under subparagraph (i)(5)(B).

(B) An operating hour that includes any of the following periods shall be excluded from the data availability calculation:

(i) Startup and shutdown period that is not subject to any emission limit according to the permit condition or source specific rule;

(ii) CEMS maintenance, repair, or audit for up to 30 hours for each calendar quarter; and

(iii) A unit Breakdown that meets all Breakdown provisions of Rule 430 and is deemed as a valid Breakdown.

(C) CEMS data availability threshold and subsequent requirements

(i) When data availability of any analyzer falls below 95 percent for one calendar quarter, the owner or operator of the CEMS shall:

(I) Conduct a relative accuracy test audit within 45 days after the end of the calendar quarter with data availability below 95 percent, unless another relative accuracy test audit is scheduled for the same calendar quarter in compliance of any other rule or permit requirement; and

(II) Report the incident and corrective actions in the semi-annual report pursuant to Rule 218.2 (h)(1) for the period covering that calendar quarter.

(ii) When data availability of any analyzer falls below 95 percent for two consecutive calendar quarters, the owner or operator of the CEMS shall:

(I) Within 30 days after the end of those two consecutive calendar quarters, provide a

temporary alternative monitoring method identified in subparagraph (i)(7); and

(II) Within 180 days after the end of those two consecutive calendar quarters, modify or replace the CEMS, and recertify the CEMS.

(iii) The Executive Officer may request the owner or operator of the CEMS to revise the QA/QC plan whenever data availability of any analyzer falls below the 95 percent threshold.

(6) CEMS Out-of-Control Period

(A) A CEMS out-of-control period:

(i) Occurs when the owner or operator fails any QA/QC test specified under subdivision (g), or fails to conduct the test when it is due; Notwithstanding, for a publicly owned sewage-water-landfill facility, if the QA/QC test fails based on a calibration error test, the CEMS out-of-control period shall be determined in accordance with the applicable provision(s) of the Code of Federal Regulations, Title 40 – "Protection of Environment", Part 60 – "Standards of Performance for New Stationary Sources", Appendix F – "Quality Assurance Procedures".

(ii) Begins with the hour of completion of the failed test(s), or the hour when it becomes overdue, and ends with the hour of completion of a passing test.

(B) The CEMS data generated during the CEMS out-of-control period shall be deemed invalid for emission quantification in any compliance demonstration

(C) The CEMS during the CEMS out-of-control period shall be considered unavailable for the data availability calculation.

(7) Alternative Data Aquisition

The owner or operator of the CEMS may choose from the following options for alternative data acquisition for any period when the certified CEMS does not provide valid data. Data generated by the alternative

options shall be considered valid for emission quantification, and quality-assurance for the data availability calculation.

(A) South Coast AQMD Method 100.1 in conjunction with South Coast AQMD Methods 1.1, 2.1, 3.1, and 4.1, or South Coast AQMD Method 100.1 in conjunction with South Coast AQMD Method 3.1 and EPA Method 19.

(B) A standby CEMS (such as in a mobile van or other configuration), if:

(i) The standby CEMS has been certified by the South Coast AQMD as being equivalent to the corresponding permanently installed CEMS on relative accuracy, reliability, reproducibility, and data handling based upon the approval of a submitted standby CEMS plan;

(ii) The use of the certified standby CEMS does not exceed a total of 6 months for any unit(s) within a calendar year;

(iii) The owner or operator of the CEMS has notified the Executive Officer within 24 hours of the replacement use of the certified standby CEMS;

(iv) During the first 30 days of the use of the certified standby CEMS, the owner or operator has conducted a Cylinder Gas Audit (CGA) of the standby CEMS;

(v) The owner or operator of the CEMS shall notify the Executive Officer within the 30-day period if the standby CEMS shall be used longer than 30 days; and

(vi) After the first 30 days of using the standby CEMS, the owner or operator of the CEMS shall conduct at least one relative accuracy test audit of the standby CEMS and the relative accuracy test audit shall be conducted within 90 days of the initial use of the standby CEMS. This test shall be performed by testing firms/laboratories who have received approval from the South Coast AQMD through its Laboratory Approval Program.

(C) An alternative data acquisition method approved by the Executive Officer as equivalent to a South Coast AQMD

certified CEMS on relative accuracy, reliability, reproducibility, and data handling.

(8) Automatic Calibration Data

If automatic adjustments to the monitor settings are made, the owner or operator shall conduct the calibration tests in a way that the magnitude of the adjustments can be determined and recorded.

(9) F-Factors

The owner or operator of the CEMS shall use in the CEMS calculations the F-factors listed in 40 CFR Part 60, Appendix A, Method 19, Table 19-2, as applicable. Alternatively, the owner or operator may submit a plan for Executive Officer's approval to develop F-factors for fuels not listed in Method 19, Table 19-2.

(j) SCEMS Requirements

(1) The owner or operator of a SCEMS shall:

(A) Comply with the pre-certification and certification requirements pursuant to subdivisions (e) and (f), except for the requirements on response time specified in subparagraph (f)(4)(A), where the response time for any SCEMS shall not exceed 15 minutes;

(B) Comply with the quality assurance requirements specified in subdivision (g);

(C) Comply with the data handling requirements pursuant to subdivision (i); and

(D) Use 15-minute data points instead of one-minute data points for the calculation required by subparagraph (i)(2)(C).

(2) The owner or operator of a time-shared CEMS shall meet all the following additional requirements for the time-shared CEMS:

(A) All units shall have mutually compatible range(s) of air pollutant gases at all times.

(B) Each unit shall have a data-reading period, at a minimum, equal to three times the longest response time of the system.

(C) For shared systems the response time shall be measured at the input or probe at each unit.

(D) A demonstration of response time for each unit shall be made during certification testing.

(E) Data shall not be collected following a switch of sample unit until a period of time equal to one response time has passed.

(F) Data shall be recorded every 15 minutes for each unit.

(G) Perform and record zero and span calibrations for each unit, including the calibration factors and correction values before and after every automatic calibration.

(H) Uniquely identify each unit on the DAHS.

(k) Moisture Correction

(1) If a moisture correction in reporting flow and concentration is required, the owner or operator of a CEMS shall measure and monitor moisture in the stack gas used for emission data calculations in accordance with the South Coast AQMD Technical Guidance Document R-001(TGD-R-001).

(2) Alternatively, with Executive Officer approval, for equipment moisture that emanates only from fuel combustion, the owner or operator of the CEMS shall calculate the moisture content using fuel properties and ambient air humidity data or, for processes that saturate the exhaust gas with moisture, such as a wet scrubber system, the owner or operator shall use the saturation temperature for moisture content data

(l) Exemption

(1) If a rule or permit specify CEMS requirements that are different than requirements specified in Rule 218.3, the owner or operator shall adhere to CEMS requirements in the rule or permit, unless otherwise notified by the Executive Officer.

Table 1
REFERENCE METHODS
RULE 218.3

South Coast AQMD Method 1.1 - Sample and Velocity Traverses for Stationary Sources

South Coast AQMD Method 1.2 - Sample and Velocity Traverses for Stationary Sources with Small Stack or Ducts

South Coast AQMD Method 2.1 - Determination of Stack Gas Velocity and Volumetric Flow Rate (S-type Pitot tube)

South Coast AQMD Method 2.2 - Direct Measurement of Gas Volume through Pipes and Small Ducts

South Coast AQMD Method 2.3 - Determination of Gas Velocity and Volumetric Flow Rate from Small Stacks or Ducts

South Coast AQMD Method 3.1 - Gas Analysis for Dry Molecular Weight and Excess Air

South Coast AQMD Method 4.1 - Determination of Moisture Content in Stack Gases

South Coast AQMD Method 6.1 - Determination of Sulfuric Acid and Sulfur Oxides from Stationary Sources

South Coast AQMD Method 7.1 - Determination of Nitrogen Oxide Emissions for Stationary Sources

South Coast AQMD Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling

South Coast AQMD Method 307.91 - Determination of Sulfur in a Gaseous Matrix

South Coast AQMD Method 10.1 – Determination of Carbon Monoxide, Carbon Dioxide, and Oxygen by Gas Chromatograph

EPA Method 6 - Determination of Sulfur Dioxide Emissions from Stationary Sources

EPA Method 19 - Determination of Sulfur Dioxide Removal Efficiency and Particulate, Sulfur Dioxide and Nitrogen Oxides Emission Rates from Electric Utility Steam Generator (40 CFR Part 60 Appendix A)

ASTM D4294 – 03 Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry

ASTM D2622 – 05 Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry

Table 2
Data Acquisition and Handling System (DAHS) Status Codes
RULE 218.3

Status Code for the Following Parameters (True as 1 and False as 0)
Valid data point
Calibration
Monitoring system off-line
Alternative data acquisition
CEMS out-of-control
Fuel switch
10% of upper span value[1] (concentration reported at 10% of upper span value when the monitored value was below 10% of upper span value)
Lower than 10% of upper span value[1] (Concentration reported at the actual monitored value when the monitored value was below 10% of upper span value)
Above 95% of upper span value[2]
Unit non-operational

1. 10% of upper span value of the lower span range for dual range analyzer or the lowest span range for multiple range analyzer
2. 95% of upper span value of the higher span range for dual range analyzer or the highest span range for multiple range analyzer

Table 3
Equations
RULE 218.3

Test	Eq. #	Equation	Where:
Calibration Error	1	$CE = \frac{\lvert C - A \rvert}{SR} \times 100$	C = Calibration gas concentration A = Actual response or the concentration indicated by the monitoring system SR = Upper span value of the instrument
Confidence Coefficient	2	$CC = t_{0.975} \frac{S_d}{\sqrt{n}}$	S_d = Standard deviation n = Number of data in a series of tests $t_{0.975}$ = t-value (see Table 4 below for t-Values)
Linearity Error	3	$LE = \frac{\lvert R - \overline{C} \rvert}{R} \times 100$	$\overline{C}$ = Mean of the CEMS response values R = Certified gas concentration as reference value
Linearity Error - For air pollutant analyzer with a span range at or below 5 ppm	3a	$LE = \frac{\lvert R - \overline{C} \rvert}{SR} \times 100$	$\overline{C}$ = Mean of the CEMS response values R = Certified gas concentration as reference value SR = Upper span value of the instrument
Relative Accuracy Test Audit – Relative Accuracy	4	$RA = \frac{\lvert \overline{d} \rvert + \lvert CC \rvert}{\overline{RM}} \times 100$	$\lvert \overline{d} \rvert$ = Absolute value of the mean difference |CC| = Absolute value of the 95% confidence coefficient $\overline{RM}$ = Average reference method value
Relative Accuracy Test Audit – *de minimis (Pollutant/Diluent Gas)*	5	$\lvert \overline{d} \rvert + \lvert CC \rvert$	$\lvert \overline{d} \rvert$ = Absolute value of the mean difference |CC| = Absolute value of the 95% confidence coefficient

Table 3
Equations - continued
RULE 218.3

Test	Eq. #	Equation	Where:
Relative Accuracy Test Audit – *de minimis (Stack Flow Monitoring System)*	6	$\|d\|+\|cc\| \leq 2$ feet per second x A x cf	|d| = Absolute value of the mean difference in units of standard cubic feet per hour. |cc| = Absolute value of the 95% confidence coefficient A = Stack cross sectional area in the plane of measurement. cf = Conversion factor to standard cubic feet per hour.
Relative Accuracy Test Audit – *de minimis (Mass Emission Rate)*	7	$\|d\|+\|cc\| \leq (c \times s \times A) \times cf$	|d| = Absolute value of the mean difference in units of standard cubic feet per hour. |cc| = Absolute value of the 95% confidence coefficient c = Pollutant *de minimis* or mean concentration obtained by reference test method, whichever is greater. s = 2 feet per second or mean stack gas velocity obtained by reference test method, whichever is greater. A = Stack cross sectional area in the plane of measurement. cf = Conversion factor to pounds per hour.
The Mean Difference $\bar{d}$	8	$\bar{d} = \frac{1}{n}\sum_{i=1}^{n} d_i$	$\sum_{i=1}^{n} d_i$ = Algebraic sum of the individual differences di n = Number of data points di = The difference between the reference method value and CEMS value, both in units of the applicable standard

Table 4
t-Values*
RULE 218.3

N	$t_{0.975}$	n	$t_{0.975}$	n	$t_{0.975}$
2	12.706	7	2.447	12	2.201
3	4.303	8	2.365	13	2.179
4	3.182	9	2.306	14	2.160
5	2.776	10	2.262	15	2.145
6	2.571	11	2.228	16	2.131

* The t-values in this table are already corrected for n-1 degrees of freedom. Use n equal to the number of data points.

ATTACHMENT A

SUPPLEMENTAL AND ALTERNATIVE CEMS PERFORMANCE REQUIREMENTS

A. Applicability of Supplemental and Alternative Performance Requirements

The owner or operator of the CEMS electing (or who may be required) to measure concentrations that fall below 10 percent of the upper span value of the lowest vendor guaranteed span range, shall satisfy the performance requirements as specified in Table A-1 listed below.

TABLE A-1
Alternative Performance Requirement(s)

CEMS Certified per Rule 218.1 Yes or No	Performance Requirement(s)			
	LLSR/BFD	HLSR/BFD	LLR/BFD	LLCE
Yes	x		+	x
No	x	x	+	x

1. + (plus) denotes an additional performance requirement that shall be conducted if the mandatory performance requirement(s) cannot be met.

2. If the concentration of the CEMS is such that the specifications for the low level spike recovery/bias factor determination cannot be met, the owner or operator of the CEMS shall conduct a low level RATA/bias factor determination.

3. Abbreviations used in this Attachment are:

   Low Level Spike Recovery/Bias Factor Determination (LLSR/BFD)
   High Level Spike Recovery/Bias Factor Determination (HLSR/BFD)
   Low Level RATA/Bias Factor Determination (LLR/BFD)
   Low Level Calibration Error (LLCE)
   Relative Accuracy Test Audit (RATA)
   Relative Accuracy (RA)
   National Institute of Standards Traceability (NIST)

B. Test Definitions, Performance Specifications and Test Procedures

This section explains in detail how each performance requirement is to be conducted.

1. Low Level Calibration Error

The low level calibration error test is defined as challenging the CEMS (from probe to monitor) with certified calibration gases (e.g., NO in N2) at three levels in the 0-20 percent of the upper span value. Since certified gas mixtures or standards may not be available at the concentrations required for this test, gas dilution systems may be used, with the Executive Officer's approval, if they are used according to either the South Coast AQMD or EPA protocols as specified in Rule 218.1, for the verification of gas dilution systems in the field. The CEMS high-level calibration gas may be diluted for the purpose of conducting the low level calibration error test.

a. Performance Specifications
Introduce pollutant concentrations at approximately the 20 percent, 10 percent, and 5 percent of the upper span value through the normal CEMS calibration system. No low level calibration error shall exceed 2.5 percent of the upper span value.

b. Testing Procedures

i. Perform a standard zero/span check; if zero or span check exceeds 2.5 percent of the upper span value, adjust monitor and redo zero/span check.

ii. After zero/span check allow the CEMS to sample stack gas for at least 15 minutes.

iii. Introduce any of the low level calibration error standards through the CEMS calibration system.

iv. Read the CEMS response to the calibration gas starting no later than three system response times after introducing the calibration gas; the CEMS response shall be averaged for at least three response times and for no longer than six response times.

v. After the low level calibration error check allow the CEMS to sample stack gas for at least 15 minutes.

vi. Repeat steps iii through v until all three low level calibration error checks are complete.

vii. Conduct post test calibration and zero checks.

2. <u>Spike Recovery and Bias Factor Determinations</u>
Spiking is defined as introducing known concentrations of the pollutant of interest (e.g., gas standard to contain a mixture of NO and NO2 is representative of the ratio of NO and NO2 in stack gas) and an appropriate non-reactive, non-condensable and non-soluble tracer gas from a single

cylinder (EPA Protocol as specified in Rule 218.1 or NIST traceable to 2 percent analytical accuracy if no EPA Protocol is available) near the probe and upstream of any sample conditioning systems, at a flow rate not to exceed 10 percent of the total sample gas flow rate. The purpose of the 10 percent limitation is to ensure that the gas matrix (water, CO2, particulates, interferences) is essentially the same as the stack gas alone. The tracer gas is monitored in real time and the ratio of the monitored concentration to the certified concentration in the cylinder is the dilution factor. The expected pollutant concentration (dilution factor times the certified pollutant concentration in the cylinder) is compared to the monitored pollutant concentration.

3. High Level Spike Recovery/Bias Factor Determination

The high level spike recovery/bias factor determination is used when it is technologically not possible to certify the CEMS per the standard Rule 218.1 requirements. The spiking facility/interface shall be a permanently installed part of the CEMS sample acquisition system and accessible to the Executive Officer as well as the CEMS operator.

a. Performance Specifications

The CEMS shall demonstrate a RA $\leq$ 20 percent, where the spike value is used in place of the reference method in the normal RA calculation, as described below.

b. Testing Procedures

i. Spike the sample to the CEMS with a calibration standard containing the pollutant of interest and CO or other non-soluble, non-reacting alternative tracer gas (alternative tracer gas) at a flow rate not to exceed 10 percent of the CEMS sampling flow rate and of such concentrations as to produce an expected 40-80 percent of the upper span value for the pollutant of interest and a quantifiable concentration of CO (or alternative tracer gas) that is at least a factor of 10 higher than expected in the unspiked stack gas. The calibration standards for both pollutants of interest and CO (or alternative tracer gas) shall meet Rule 218.1 requirements

ii. Monitor the CO (or alternative tracer gas) using an appropriate continuous (or semi-continuous if necessary) monitor meeting the requirements of Method 100.1 and all data falling within the 10-95 percent of the upper span value, and preferably within 30-70 percent of the upper span value.

iii. Alternate spiked sample gas and unspiked sample gas for a total of nine runs of spiked sample gas and ten runs of unspiked sample gas. Sampling times should be sufficiently long to mitigate response time and averaging effects.

iv. For each run, the average CEMS reading must be between 40 percent of the upper span value n and 80 percent of the upper span value. If not, adjust spiking as necessary and continue runs, but expected spike must represent at least 50 percent of the total pollutant value read by the CEMS.

v. Calculate the spike recovery for both the pollutant and the CO (or alternative tracer gas) for each run by first averaging the pre- and post-spike values for each run and subtracting that value from the spiked value to yield nine values for recovered spikes.

vi. Using the CO (or alternative tracer gas) spike recovery values for each run and the certified CO (or alternative tracer gas) concentration, calculate the dilution ratio for each run. Multiply the certified pollutant concentration by the dilution factor for each run to determine the expected diluted pollutant concentrations. Using the expected diluted concentrations as the "reference method" value, calculate the Relative Accuracy. The RA shall be $\leq$ 20 percent.

4. Low Level Spike Recovery/Bias Factor Determination

The low-level spike recovery/bias factor determination is used to determine if a significant bias exists at concentrations near the 10 percent of the upper span value. The spiking facility/interface shall be a permanently installed part of the CEMS sample acquisition system and accessible to the Executive Officer staff as well as the owner or operator of the CEMS.

a. Performance Specifications

There are no pass/fail criteria with respect to the magnitude of the percent relative accuracy. There are performance criteria for the range of concentration on the CEMS the extent to which the spike must be greater than the background pollutant level.

b. Testing Procedures

i. Spike the sample to the CEMS with a calibration standard containing the pollutant of interest and CO or other non-soluble, non-reacting alternative tracer gas (alternative tracer gas) at a flow rate not to exceed 10 percent of the CEMS sampling flow rate and of such concentrations as to produce an expected 10-25 percent of the upper span value for the pollutant of interest and a quantifiable concentration of CO (or alternative tracer gas) that is at least a factor of 10 higher than expected in the unspiked stack gas. The calibration

standards for both pollutants of interest and CO (or alternative tracer gas) shall meet Rule 218.3 requirements.

ii. Monitor the CO (or alternative tracer gas) using an appropriate continuous (or semi-continuous if necessary) monitor meeting the requirements of Method 100.1 and all data falling within the 10-95 percent of the upper span value, and preferably within 30-70 percent of the upper span value.

iii. Alternate spiked sample gas and unspiked sample gas for a total of nine runs of spiked sample gas and ten runs of unspiked sample gas. Sampling times should be sufficiently long to mitigate response time and averaging effects.

iv. For each run, the average CEMS reading must be below 25 percent of the upper span value and > 10 percent of the upper span value. If not, adjust spiking as necessary and continue runs; but expected spike shall represent at least 50 percent of the total pollutant value read by the CEMS.

v. Calculate the spike recovery for both the pollutant and the CO (or alternative tracer gas) for each run by first averaging the pre- and post-spike values for each run and subtracting that value from the spiked value to yield nine values for recovered spikes.

vi. Using the CO (or alternative tracer gas) spike recovery values for each run and the certified CO (or alternative tracer gas) concentration, calculate the dilution ratio for each run. Multiply the certified pollutant concentration by the dilution factor for each run to determine the expected diluted pollutant concentrations. Using the expected diluted concentrations as the "reference method" value, calculate the Relative Accuracy as specified in Rule 218.3. If the average difference is less than the confidence coefficient then no low level bias factor is applied. If the average difference is greater than the confidence coefficient and the average expected spike is less than the average CEMS measured spike, then no low level bias factor is applied. If the average difference is greater than the confidence coefficient and the average expected spike is greater than the average CEMS measured spike, then a low level bias factor equal to the absolute value of the average difference is added to data reported at or below the 10 percent of the upper span value.

5. Low Level RATA/Bias Factor Determination using Enhanced Reference Method 6.1

A low level RATA/bias factor determination is designed to determine if there exists a statistically significant bias at low level concentrations. It consists of nine test runs that measure the stack concentration and the CEMS concentration concurrently.

a. Performance Specifications

There are no pass/fail criteria with respect to the magnitude of the percent relative accuracy. There are performance criteria for the special RATA with respect to the reference method and range of concentration on the CEMS.

b. Testing Procedures

The reference method for the low level RATA/bias factor determination is Method 100.1

i. Perform a minimum of nine runs of low level RATA for CEMS versus the reference method at actual levels (unspiked).

ii. The span range for the reference method shall be such that all data falls with 20 - 95 percent of the upper span value.

iii. The reference method shall meet all Method 100.1 performance criteria.

iv. Calculate the average difference (d = CEMS - reference method, ppm) and confidence coefficient (cc = statistical calculated, ppm).

v. If $d > 0$ then the bias = 0 ppm; if $d < 0$ and $|d| > cc$ then bias = d; if $d < 0$ and $|d| < cc$ then bias = 0 ppm.

C. Testing Frequency

The owner or operator of the CEMS shall perform the aforementioned performance requirements once a year thereafter. These annual assessments shall be completed within six months of the end of the calendar quarter in which the CEMS was originally certified.

ATTACHMENT B

Concentration stratification and CEMS probe location

A. Test for Concentration Stratification

The owner or operator of the CEMS shall demonstrate the absence of stratification through testing performed according to the method in Chapter X, Section 13 - "Non-Standard Methods and Techniques", of the District Source Testing Manual. The tests shall be conducted at:

1. One load level if the owner or operator demonstrates to the satisfaction of the Executive Officer that the equipment operates within a 20 percent load range for at least 80 percent of the time;
2. Two different load levels if the owner or operator demonstrates to the satisfaction of the Executive Officer that the equipment operates within a 50 percent load range for at least 80 percent of the time; or
3. Three different load levels if the equipment operates outside of the criteria in subclauses (f)(4)(E)(i)(I) and (f)(4)(E)(i) (II).

B. Absence of Stratification

The absence of stratification is considered verified if the difference between the highest measured concentration (time normalized) and the lowest measured concentration (time normalized) divided by the average measured concentration (time normalized), when expressed as a percentage, is less than or equal to 10 percent. Upon verification of the absence of stratification:

1. The owner or operator of the CEMS may position the CEMS sampling probe at any point within the stack with the exception of those points that are adjacent to the stack wall;

2. The CEMS sampling probe shall be located in the stack at least one-third of the stack diameter; and

3. The reference method for RATA may be conducted at a single point within the stack that is not adjacent to the stack wall and does not interfere with the sampling and the operation of the facility CEMS.

C. Presence of Stratification

If the testing demonstrates the presence of stratification, the owner or operator of the CEMS shall elect one of the following alternatives:

1. If the stratification is greater than 10 percent but the difference between the highest measured concentration (time normalized) and the lowest measured concentration (time normalized) is less than or equal to 1.0 ppmv:
    a. Then the CEMS sampling probe may be located at any point within the stack except any points that is adjacent to the stack or adjacent to the highest measured concentration (time normalized) and the lowest measured concentration (time normalized); or
    b. If it is not possible to avoid using a point adjacent to either the highest measured concentration (time normalized) or the lowest measured concentration (time normalized), then the CEMS sampling probe shall be located such that the placement minimizes the difference between the concentration at the proposed probe location and the concentration at the point of highest measured concentration (time normalized) or the lowest measured concentration (time normalized).

2. Determine a representative CEMS probe location such that the following criteria are met:
    a. All traverse point concentrations are within 10 percent of the average of all traverse point concentrations (time normalized), or, the difference is less than or equal to 1.0 ppm, whichever is greater;
    b. There exists at least one traverse point concentration (Xr), not located next to the stack or duct wall, that is less than or equal to 10 percent of each adjacent traverse point concentration of Xr, or the difference is less than or equal to 1.0 ppm, whichever is greater; and
    c. The CEMS probe is located at (or as near as practical to) Xr with minimum adjacent traverse point concentration fluctuations as determined above in section (C)(2)(b).

3. Determine a representative multiple point sampling configuration as approved by the Executive Officer, following the guidance document prepared by Emission Measurement Technical Information Center, "Evaluation Procedure for Multi-Hole Sample Probes" (EMTIC GD-031) and the South Coast AQMD guidance document, “Multi-Point Probe Acceptance and Quality Assurance Standards”.

4. Modify the stack and/or CEMS sampling probe location and retest for the absence of stratification.

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Amended Rule 218 – Continuous Emission Monitoring
Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions
Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

March 2021

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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EXECUTIVE OFFICER:

WAYNE NASTRI

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

A continuous emission monitoring system (CEMS) is the combination of equipment necessary for the determination of pollutant concentrations or emission rate on a continuous basis using analyzer measurements and a conversion equation, graph, or computer program to produce results in units of the applicable emission limitation or standard.

The South Coast Air Quality Management District (South Coast AQMD) has various rules, regulations and permit conditions that require the installation and operation of CEMS as a means to determine compliance with an emission limitation or standard. The South Coast AQMD has established CEMS monitoring rules to provide the guidance and specifications for the CEMS installation and operation and to ensure accuracy and precision of the CEMS. For facilities that under a command-and-control regulatory structure and are not in the Regional Clean Air Incentives Market (RECLAIM), CEMS provisions are specified in Rule 218 – Continuous Emissions Monitoring and Rule 218.1 – Continuous Emissions Monitoring Performance Specifications. For RECLAIM facilities, CEMS provisions are specified in Rule 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for SOx Emissions and Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions.

The United States Environmental Protection Agency specifies requirements on stationary source continuous emission monitoring under several programs, including 40 CFR Part 60 - New Source Performance Standards (NSPS) and 40 CFR Part 75 – Continuous Emission Monitoring that is in support of the EPA's Acid Rain Program.

There are equipment in the South Coast AQMD subject to both federal requirements and local rules for the CEMS. While the equipment installation and setup are generally compatible, the difference between various regulations are mainly on testing, performance standards, and data handling.

Rule 2012- Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, and specifically Rule 2012 Chapter 2 – Continuous Emission Monitoring System (CEMS), provide requirements on NOx CEMS subject to the NOx RECLAIM program (NOx RECLAIM CEMS) for mass emission monitoring. When the RECLAIM program transitions to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT), the CEMS of RECLAIM facilities would become former RECLAIM CEMS. Unless otherwise specified by source specific rules, the design of a former RECLAIM CEMS would change from mass emission monitoring to concentration limit compliance demonstration.

Rules 218 and 218.1 are the existing monitoring rules for CEMS with a focus on concentration limit compliance demonstration. Rule 218 – Continuous Emission Monitoring, and Rule 218.1- Continuous Emission Monitoring Performance Specifications, are applicable to owners or operators of all CEMS that are required by the South Coast AQMD rules, regulations or permit conditions, except for CEMS under the RECLAIM program, or CEMS for equipment performance evaluation instead of compliance determination. CEMS subject to Rules 218 and 218.1 are also referenced as non-RECLAIM CEMS.

For the RECLAIM program transition, staff is proposing to develop two new monitoring rules and amend Rule 218. Proposed Rule 218.2 (PR 218.2) - Continuous Emission Monitoring System: General Provision, and Proposed Rule 218.3 (PR 218.3) - Continuous Emission Monitoring

System: Performance Specification, would provide specifications for both former RECLAIM CEMS that are previously certified according to the RECLAIM program, as well as non-RECLAIM CEMS that are previously certified according to Rules 218 and 218.1. An implementation schedule is specified under Proposed Rules 218.2 and 218.3 (PR 218.2 and 218.3) to define the compliance date of each system. Prior to the compliance date, former RECLAIM CEMS would continue to be subject to their current monitoring provisions under RECLAIM (i.e., Rule 2012 for NOx CEMS), and non-RECLAIM CEMS would continue to be subject to Rules 218 and 218.1.

PR 218.2 is based on Rule 218 with a focus on CEMS administrative requirements and staff proposes to: (1) revise the provisions retained from Rule 218 with key modifications on certification process for CEMS modification and the requirements for reporting; and (2) incorporate a new provision (subdivision (e)) that would require CEMS to be in a continuous operation, except during the defined CEMS maintenance and repair, and allow CEMS to be shut down when the unit (emission source) becomes offline for at least one week.

PR 218.3 is based on Rule 218.1 with a focus on CEMS performance specification and staff proposes to: (1) revise the provisions retained from Rule 218.1 with key modifications on span range, data acquisition and handling system, relative accuracy test audit, and calibration gas requirements; and (2) incorporate a new provision (subdivision (i)) that would provide specifications on data handling method for data measured below 10 percent or above 95 percent of the upper span value, emission data averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

For the provisions provided under Rules 218 and 218.1 that staff proposes under PR 218.2 and 218.3 without revision for the requirements, there may be terminology, sentence or structure changes. The terminology and sentence changes are for consistency and conciseness. The structures changes could be rearranging one paragraph into more levels of expression (such as by paragraph, subparagraph, clause, etc.) for better comprehension. There are also practices for certification and testing that have been consistently applied and are now included in PR 218.2 and 218.3.

With regards to the compliance date, PR 218.2 and 218.3 would be applicable to non-RECLAIM CEMS at the time of the CEMS certification/recertification. This would be applied during the period of one to four years after the rule adoption, or at the end of four years after the rule adoption if there is no certification/recertification application in that period. The owner or operator of the CEMS may also opt to implement PR 218.2 and 218.3 according to the implementation date of a landing rule, for which the CEMS would be recertified as part of the landing rule implementation. Landing rules amended or adopted are presumably preparing for the RECLAIM facilities transitioning to a command and control regulatory structure.

PR 218.2 and 218.3 would be applicable to former RECLAIM CEMS at the time of the CEMS certification/recertification after the facility exits NOx RECLAIM but no later than two years after exiting NOx RECLAIM, or at the end of two years after exiting NOx RECLAIM if there is no CEMS certification/recertification application during that period. Similar to non-RECLAIM CEMS, the owner or operator of the former RECLAIM CEMS may also opt to implement PR 218.2 and 218.3 by the implementation date of a landing rule that is amended or adopted, for which the CEMS would be recertified as part of the landing rule implementation.

Staff also proposes to amend Rule 218 to incorporate a phase out provision that requires the owner or operator of any CEMS subject to Rules 218 and 218.1 to transition to comply with PR 218.2 and 218.3 according to the implementation schedule specified in PR 218.2 (d) or PR 218.3 (d).

PR 218.2 and 218.3, and proposed amended rule 218 (PAR 218) provide administrative and technical guidelines for installing and operating the CEMS required by the South Coast AQMD rules or permit conditions. As these rules do not directly regulate sources for emissions control, there is no emission reductions entailed by this rule development.

CHAPTER 1: BACKGROUND

INTRODUCTION

A continuous emission monitoring system (CEMS) is the combination of equipment necessary for the determination of pollutant concentrations or emission rate on a continuous basis using analyzer measurements and a conversion equation, graph, or computer program to produce results in units of the applicable emission limitation or standard. The South Coast Air Quality Management District (South Coast AQMD) has various rules, regulations and permit conditions that require the installation and operation of CEMS to determine compliance with an emission limitation or standard. The South Coast AQMD has established CEMS monitoring rules to provide the guidance and specifications for the CEMS installation and operation and to ensure accuracy and precision of the CEMS. For facilities that under a command-and-control regulatory structure and are not in the Regional Clean Air Incentives Market (RECLAIM), CEMS provisions are specified in Rule 218 – Continuous Emissions Monitoring and Rule 218.1 – Continuous Emissions Monitoring Performance Specifications. For RECLAIM facilities, CEMS provisions are specified in Rule 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for SOx Emissions and Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions.

The United States Environmental Protection Agency (U.S. EPA) specifies requirements on stationary source continuous emission monitoring under several programs, including 40 CFR Part 60 - New Source Performance Standards (NSPS) and 40 CFR Part 75 – Continuous Emission Monitoring that is in support of the EPA's Acid Rain Program.

NEED FOR RULE AMENDMENTS

Staff is developing Proposed Rule 218.2 (PR 218.2) - Continuous Emission Monitoring System: General Provision, and Proposed Rule 218.3 (PR 218.3) - Continuous Emission Monitoring System: Performance Specification to update CEMS requirements and to prepare for the transition of facilities in RECLAIM to a command-and-control regulatory program. Since requirements for installation and operation of CEMS for RECLAIM facilities resides in Rules 2011 and 2012, as these facilities transition to command-and-control CEMS requirements for all facilities will reside under Proposed Rules 218.2 and 218.3 to ensure consistency for all facilities required to meet emission limits for command-and-control rules. Many of the revisions to the CEMS requirements are not new, however, will provide more clarity and codify practices that are currently being implemented to improve the transparency and streamline implementation.

Staff has initiated rulemaking to establish Best Available Control Technology (BARCT) for facilities in the RECLAIM program consistent with Control Measure CMB-05: Further NOx Reductions from RECLAIM Assessment (NOx) in the 2016 Air Quality Management Plan (2016 AQMP). CMB-05 includes a series of options to achieve additional NOx reductions from RECLAIM facilities including transitioning facilities to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT). In addition, California State Assembly Bill 617 (AB 617), which was signed by the Governor on July 26, 2017 and affects RECLAIM facilities that are also in the California Greenhouse Gas Cap and Trade program, requires implementation of Best Available Retrofit Control Technology (BARCT) no later than December 31, 2023, with priority given to older, higher polluting units.

As facilities begin to transition out of RECLAIM the focus on monitoring will be on the NOx concentration limit instead of the mass emission limit. In addition, RECLAIM facilities will transition from compliance with Rule 2012 to Proposed Rules 218.2 and 218.3. Rule 2011-Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions, provides requirements for CEMS for SOx RECLAIM facilities. While the current

transition is focused on NOx RECLAIM, staff will be working on a transition of SOx RECLAIM facilities. Similar to NOx RECLAIM facilities, SOx RECLAIM facilities with CEMS would be subject to 218.2 and 218.3 upon transitioning to a command-and-control regulatory program.

REGULATORY HISTORY

The following provides the regulatory history of the current CEMS rules under the South Coast AQMD's regulatory programs and federal programs. Within the South Coast AQMD's regulatory program there are two regulatory programs for the installation and operation of CEMS: RECLAIM CEMS requirements which are specified under Rules 2011 and 2012; and non-RECLAIM which are specified under Rules 218 and 218.1. CEMS requirements under the RECLAIM program focuses on mass emission compliance since the RECLAIM program is a market incentives program that focuses on mass emissions. CEMS monitoring for non-RECLAIM sources under a command-and-control regulatory structure focus on compliance with concentration limits. This section also discusses the rules that specify what sources are required to install CEMS. Lastly, a general overview of federal CEMS requirements is discussed as there are some facilities that are concurrently subject to CEMS monitoring requirements under the federal program, such as the Acid Rain Program.

Rules 2011 and 2012

The adoption of the RECLAIM program in October 1993, included Rules 2011 and 2012 that established the monitoring, reporting, and recordkeeping requirements for SOx and NOx emissions under the RECLAIM program. For the largest sources, Rules 2011 and 2012 required CEMS, which at the time were state of the art monitoring systems that were critical for the RECLAIM program where compliance was based on mass emissions as compared to NOx concentration limits under command-and-control. The most recent amendments to Rule 2012 were made in January 2005 and May 2005 that included allowing a delay in the due date for the Relative Accuracy test Audit (RATA) for a unit that is operated intermittently and specifying mass emissions reporting through the South Coast AQMD's website. Rule 2012 was last approved by the US EPA on September 14, 2017 into the California State Implementation Plan (SIP).

Rules 218 and 218.1

Rule 218 - Stack Monitoring was adopted on January 9, 1976 for requirements on continuous stack emission monitoring, with provisions on both administrative and technical guidelines. Rule 218 was amended several times, with the most significant amendment on May 14, 1999 to recognize the advancements in CEMS and to separate certain requirements from Rule 218 to a new Rule 218.1. Rule 218 focused on administrative requirements and the new Rule 218.1 focused on performance specifications.

Rule 218.1 was further amended in 2012 to align the calibration requirements for CEMS for non-operating days with the provisions in Regulation XX, specifically Rule 2011 for SOx CEMS and Rule 2012 for NOx CEMS, under the RECLAIM program. Rules 218 and 218.1 were last approved by the U.S. EPA on June 8, 2010 into the California SIP.

Source-Specific Rules that Require CEMS

The South Coast AQMD source-specific rules establish emission standards for various source categories and specify monitoring, recordkeeping, and reporting requirements. The source-specific rules set CEMS applicability, the criteria for the requirement of continuous emission monitoring. Some source specific rules may impose additional requirements for CEMS (e.g., CEMS data averaging time under Rule 1134 and CEMS operating and compliance schedule under Rule

1110.2). CEMS monitoring rules, such as Rules 218 and 218.1, provide extensive specifications for CEMS installation, operation, certification, quality assurance, recordkeeping, and reporting.

When RECLAIM facilities transition to the command and control structure for NOx sources, the applicability of CEMS for the sources, previously determined by Rule 2012, would be subject to the applicability requirements specified in the source-specific rules. Table 1-1 provides the comparison between Rule 2012 and source-specific rules for CEMS applicability. The main differences are between industrial boilers and internal combustion engines. For industrial boilers, CEMS monitoring may no longer be required for certain RECLAIM units (potentially eight units identified during the rulemaking Rule 1146 in 2018). For internal combustion engines, CEMS monitoring would be required for some units that had no CEMS monitoring requirements under RECLAIM.

Table 1-1:
Comparison Between CEMS Applicability by Rule 2012 and Source-Specific Rules

	Rule 2012 CEMS Applicability	**Source-Specific Rule CEMS Applicability**	**Changes to RECLAIM Facilities**
Rule 1146 (Amended December 7, 2018) Industrial Boilers and Heaters (Not including Refinery Boilers and Heaters)	• Heat input > = 40 MMBtu/hr but < 500 MMBtu/hour and annual heat input > 90 x 10^9 Btu/year; or • Heat input > = 500 MMBtu/hour	• Heat input > = 40 MMBtu/hour and annual heat input > 200 x 10^9 Btu/year	Some CEMS may no longer be required if the source's annual heat input is no more than 200 x 10^9 Btu/year
Rule 1110.2 (Amended November 1, 2019) Internal Combustion Engine (Non-Electric Generating Facilities)	>= 1,000 bhp and operating > 2,190 hours/year	• >= 1,000 bph; or • Multiple units (each >= 500 bhp) with combined rating >= 1,500 bhp and combined fuel usage >= 16 x 10^9 Btu/year •	Some units with an on-site aggregate horsepower rating ≥ 1500 hp would require CEMS under Rule 1110.2
Rule 1135 (Amended November 2, 2018) Internal Combustion Engine at Electric Generating Facilities	>= 1,000 bhp and operating > 2,190 hours/year	Applicability remains the same for NOx source for ICE in EGF former RECLAIM facilities	No change
Rule 1134 (Amended April 5, 2019)	>= 2.9 megawatts excluding emergency standby equipment or peaking unit	Applicability remains the same for former RECLAIM NOx source	No change

	Rule 2012 CEMS Applicability	Source-Specific Rule CEMS Applicability	Changes to RECLAIM Facilities
Gas Turbines (Non-Electric Generating Facilities)			
Rule 1135 (Amended November 2, 2018) Gas Turbines at Electric Generating Facilities	>= 2.9 megawatts excluding emergency standby equipment or peaking unit	Applicability remains the same for former RECLAIM NOx source	No change
Rule 1117 (Amended June 5, 2020) Furnaces at Container Glass and Silicate Facilities	• Heat input > = 40 MMBtu/hr but < 500 MMBtu/hr and annual heat input > 90 x 109 Btu/yr; or • Heat input > = 500 MMBtu/hr	Applicability remains the same for former RECLAIM NOx source	No change
Proposed Amended Rule 1109.1 Refinery FCCU, refinery tail gas unit, and Calciner at Petroleum Refineries and Related Industries	Any	Proposed applicability remains the same for former RECLAIM NOx source	No change
Proposed Amended Rule 1147 Furnace, oven, dryer, heater, incinerator, test cell and any solid, liquid or gaseous fueled equipment	• Heat input > = 40 MMBtu/hr but < 500 MMBtu/hr and annual heat input > 90 x 109 Btu/yr; or • Heat input > = 500 MMBtu/hr	Applicability will be reassessed	To be determined
Proposed Amended Rule 1147 Kiln	Process >=10 tons/hour and >21,9000 tons/year, except brick kilns	Applicability will be reassessed	To be determined

Federal Requirements for CEMS

Federal requirements for stationary source emission monitoring are specified under several programs, including 40 CFR Part 60 - New Source Performance Standards (NSPS) and 40 CFR Part 75 – Continuous Emission Monitoring. Part 60 establishes air pollution control standards for various individual industrial or source categories. Part 60 Appendix B contains performance specifications on installation and certification procedures for CEMS SO2, NOx, CO2, O2, CO, VOC, etc., and Appendix F details on CEMS quality assurance procedures. Part 75 establishes requirements for monitoring, recordkeeping, and reporting of SO2, NOx, and CO2 emissions, volumetric flow, and opacity data from affected units under the Acid Rain Program. Part 75 Appendix A defines CEMS installation, equipment, and performance specification for certification, and Appendix B provides quality assurance and quality control procedures.

There are equipment in the South Coast AQMD subject to both federal requirements and local rules for the CEMS. While the equipment installation and setup are generally compatible, the differences between local and federal regulations are generally limited to on testing, performance standards, and data handling.

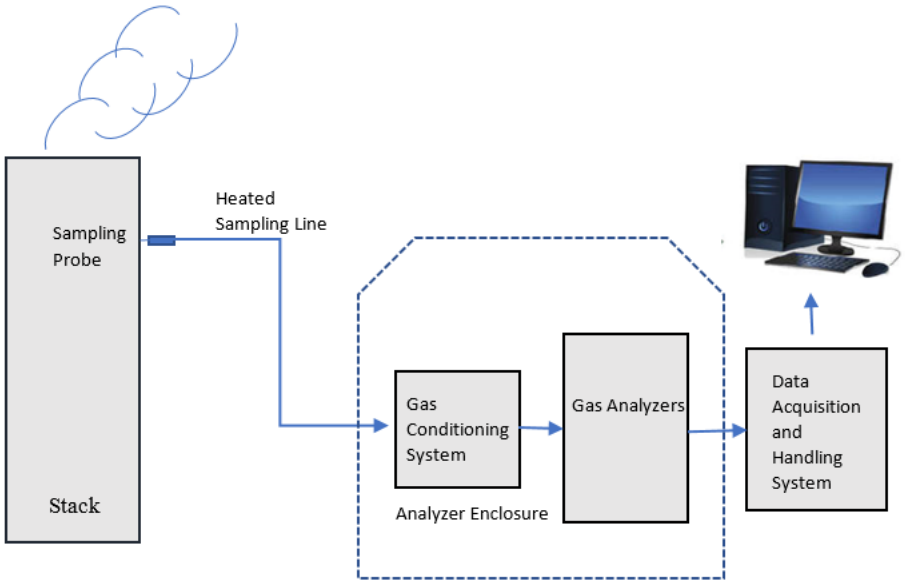
REGULATORY APPROACH FOR RULEMAKING FOR RULE 218 SERIES

To address the revisions and incorporate the revised provisions into Rules 218 and 218.1, staff initially proposed to amend Rules 218 and 218.1. During the rulemaking process, staff recognized that there is a need to retain the existing requirements for the transitional period before the proposed new requirements become effective and was concerned that the existing and revisions and changes to the rule structure would be very confusing to the regulated community if the provisions were embodied in Rules 218 and 218.1. Therefore, the current approach is to: (1) maintain Rules 218 and 218.1 for the existing provisions; and (2) establish PR 218.2 and 218.3 as the revised CEMS provisions for revised and new requirements. The existing provisions for Proposed Rule 218.2 are in Rule 218, and the existing provisions for Proposed Rule 218.3 are in Rule 218.1.

OVERVIEW OF CEMS

The standard CEMS consists of a sample probe, filter, sample line (umbilical), gas conditioning system, calibration gas system, and a series of gas analyzers which reflect the parameters being monitored (See Figure 1-1). Monitored pollutants generally include nitrogen oxides, sulfur dioxide, carbon monoxide, carbon dioxide, and oxygen. CEMS can also measure air flow, flue gas opacity and moisture. The South Coast AQMD also requires a data acquisition and handling system to collect, record, and report the measured data.

Figure 1-1
Typical CEMS Setup



Different Types of CEMS

PR 218.2 and 218.3 would apply to non-RECLAIM facilities and RECLAIM and former RECLAIM facilities where a CEMS that also includes Alternative Continuous Emission Monitoring System (ACEMS) and Semi-Continuous Emission Monitoring System (SCEMS) is required. A CEMS directly monitors emissions in the stack. An ACEMS, uses process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard on a continuous monitoring basis. A SCEMS is only different from a regular CEMS on response time and data acquisition frequency. SCEMS continuously takes and records measurements (e.g. concentration, mass emission, flow rate) at a minimum of once in every fifteen (15) minutes, versus once every minute for a regular CEMS. A time shared CEMS is also considered as a SCEMS. In this report staff will be using the term CEMS in representing all regulated monitoring systems including CEMS, ACEMS and SCEMS, unless otherwise specified.

AFFECTED FACILITIES

Based on the RECLAIM compliance year 2017 audit data, there are 83 RECLAIM facilities that in total operate 500 units with NOx emissions monitored by CEMS. It should be noted that one CEMS may monitor emissions for several units, which is common in a petroleum refining facilities.

Based on the South Coast AQMD's data base for non-RECLAIM CEMS applications, there are 126 non-RECLAIM facilities that previously installed one or more CEMS, estimating 250 units monitored by CEMS. Since records do not indicate the current status of the CEMS, some of non-RECLAIM CEMS may no longer be active. The CEMS universe may change when some landing rules are adopted or amended and become applicable to RECLAIM facilities.

PUBLIC PROCESS

The development of Proposed Amended Rule 218 and Proposed Rules 218.2 and 218.3 was conducted through a public process. Eleven Working Group Meetings were held on: March 13, 2019, May 2, 2019, June 11, 2019, September 12, 2019, November 12, 2019, February 13, 2020, June 26, 2020, July 16, 2020, October 6, 2020, and November 5, 2020. Working Groups included a wide variety of stakeholders such as affected facilities, consultants, environmental and community groups, and other agencies. The objective of the Working Group Meetings is to build consensus and resolve key issues with the stakeholders.

A Public Workshop was held on January 6, 2021. The purpose of the Public Workshop was to present the proposed rule language to the general public and to stakeholders and to solicit comments. Staff also has had numerous individual meetings with stakeholders and conducted multiple site visits as part of this rulemaking process. In addition, staff has had discussions with staff from the U.S. EPA and the California Air Resource Board (CARB) for issues related to the PR 218.2 and 218.3.

CHAPTER 2: PROPOSED RULE 218.2

PROPOSED RULE REQUIREMENTS

INTRODUCTION

Similar to Rule 218, PR 218.2 focuses on administrative CEMS requirements. PR 218.2 proposes to incorporate: (1) revisions to the provisions retained from Rule 218; and (2) new monitoring requirements in subdivision (e). PR 218.2 subdivision (e) require a CEMS to be in continuous operation, except during the defined CEMS maintenance and repair, or during a scheduled CEMS shut down when the unit (emission source) becomes offline for at least one week.

PR 218.2 (a) – PURPOSE

The purpose of this rule is to specify requirements for CEMS, Alternative Continuous Emission Monitoring System (ACEMS), and Semi-Continuous Emission Monitoring System (SCEMS). This rule refers to Rule 218.3 for requirements for certifications and quality assurance of CEMS, ACEMS, and SCEMS. While Rule 218 does not have a similar provision, this subdivision expresses the same intended purpose of Rule 218.

PR 218.2 (b) - APPLICABILITY

PR 218.2 subdivision (b) is based on the same applicability as Rule 218 subdivision (b). PR 218.2 provides further clarification. PR 218.2 applies to owners and operators of continuous monitoring systems in demonstrating compliance with emission limits or standards required by the South Coast AQMD rules, regulations or permit conditions, excluding any CEMS for performance evaluation that is not required by the South Coast AQMD, or any CEMS in the RECLAIM program.

An example of a CEMS for performance evaluation that is not required by the South Coast AQMD would be a CEMS that is monitoring upstream emissions of a Selective Catalytic Reduction (SCR) control equipment. The upstream emissions monitored by this CEMS, in conjunction with the emissions at the exhaust stack monitored by a certified CEMS, are utilized to calculate the control efficiency of the SCR. Instead of demonstrating compliance with an emission standard, this CEMS determines the performance of the SCR, and thus is not subject to PR 218.2.

A CEMS in the RECLAIM program that is monitoring NOx or SOx emissions is not subject to PR 218.2 since it is subject to Rule 2012 for NOx CEMS and Rule 2011 for SOx CEMS. However, when a RECLAIM facility transitions out of the RECLAIM program, the CEMS would be subject to PR 218.2 according to an implementation schedule specified under PR 218.2 subdivision (d). At this time only NOx RECLAIM program is transitioning to a command and control regulatory structure.

PR 218.2 (c) - DEFINITIONS

Table 2-1 lists the definitions that have been removed or added in PR 218.2, as compared to the definitions in Rule 218. Definitions were removed because they either were no longer used in the rule or are now integrated into the provision. Definitions were added because it is a new terminology used in the rule or to provide additional clarification. There are also several definitions (e.g., DILUENT GAS) that are being revised. The revisions are to provide clarity for the same meaning.

Table 2-1: PR 218.2 Definitions Removed and Added as compared to Rule 218 Definitions

	Definitions
Definitions Removed	• CALIBRATION CHECK • CERTIFIED GAS MIXTURE • MODIFICATION REQUIRING RECERTIFICATION

	Definitions
	• WORKING DAY • ZERO CHECK • ZERO GAS
Definitions Added	• ACEMS • CALIBRATION ERROR TEST • CEMS FAILURE • CEMS FINAL CERTIFICATION LETTER • CEMS MODIFICATION • PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY • RECLAIM • RECLAIM FACILITY • FORMER RECLAIM FACILITY • UNIT

PR 218.2 (d) - IMPLEMENTATION SCHEDULE

The CEMS certified for operation are categorized into two groups:

- RECLAIM CEMS,
- Non-RECLAIM CEMS.

RECLAIM CEMS are currently subject to Regulation XX, specifically Rule 2012 for NOx RECLAIM CEMS, while non-RECLAIM CEMS are subject to Rules 218 and 218.1 for CEMS specifications. Non-RECLAIM CEMS, and any RECLAIM CEMS after exiting RECLAIM, will transition to PR 218.2 and 218.3 according to the implementation schedule specified in this subdivision.

There are several considerations in establishing the CEMS implementation schedule. For RECLAIM facilities, NOx RECLAIM facilities would first need to exit RECLAIM before transitioning their CEMS to PR 218.2 and 218.3. However, prior to the transition it is important that RECLAIM facilities continue complying with Rule 2012 as the CEMS requirements ensure compliance with mass emission as compared to emission concentration requirements. Second, CEMS certification/recertification is a critical point in commencing the implementation of the CEMS to the requirements specified in PR 218.2 and 218.3. For a CEMS without a foreseeable recertification date (e.g., units already meeting the new NOx limits), a final implementation date would be established in the PR 218.2 and 218.3. The landing rule implementation date could be an option for the CEMS implementation. For most units, the implementation timeline would be staggered based on equipment modifications to meet NOx limits specified in the landing rules. Based on the above considerations, the implementation schedules are proposed as specified in subdivision (d). These implementation schedules are presented in Figures 2-1, 2-2, 2-3, 2-4, and 2-5.

PR 218.2 and 218.3 are applicable to non-RECLAIM CEMS at the time of the CEMS certification/recertification. This would be applied during the period of one to four years after the rule adoption, or at the end of four years after the rule adoption if there is no certification/recertification application in that period. The owner or operator of the CEMS may

also opt to implement PR 218.2 and 218.3 according to the implementation date of a landing rule, for which the CEMS would be recertified as part of the landing rule implementation. Landing rules amended or adopted are presumably preparing for transitioning the NOx RECLAIM facilities to a command and control regulatory structure.

PR 218.2 and 218.3 would also be applicable to RECLAIM CEMS at the time of the CEMS certification/recertification after the facility exits NOx RECLAIM but no later than two years after exiting NOx RECLAIM, or at the end of two years after exiting NOx RECLAIM if there is no CEMS certification/recertification application during that period. Similar to non-RECLAIM CEMS, the owner or operator of the RECLAIM CEMS may also opt to implement PR 218.2 and 218.3 by the implementation date specified in the landing rule that has been amended or adopted, for which the CEMS would be recertified as part of the landing rule implementation.

If the CEMS shares the sampling interface or more component(s) with another CEMS, each CEMS would be subject to a different implementation schedule. For example, a NOx and CO CEMS may both monitor emissions from a turbine in a RECLAIM facility. The NOx emissions monitoring portion is subject to Rule 2012 and considered a RECLAIM CEMS. However, the CO emission monitoring portion is subject to Rules 218/218.1 and considered a non-RECLAIM CEMS. In this example these two CEMS share the same sampling interface and some part (e.g., the hardware) of the data acquisition system, yet operate with different analyzers and data processing modules. To streamline the implementation, the owner or operator of these two CEMS will be given the option to select the later implementation date for both CEMS.

For a publicly owned sewage-water-landfill facility, considering its uniqueness in administration and operation, PR 218 and 218.3 propose to allow all existing unit to implement the new requirements at the same time.

Figure 2-1:
Applicability Prior to the Implementation of PR 218.2 and PR 218.3

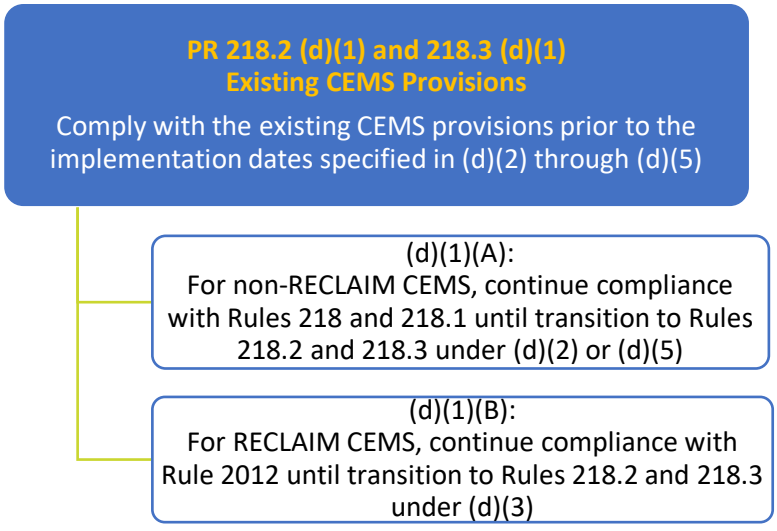


Figure 2-2:
Transition Dates for Non-RECLAIM CEMS

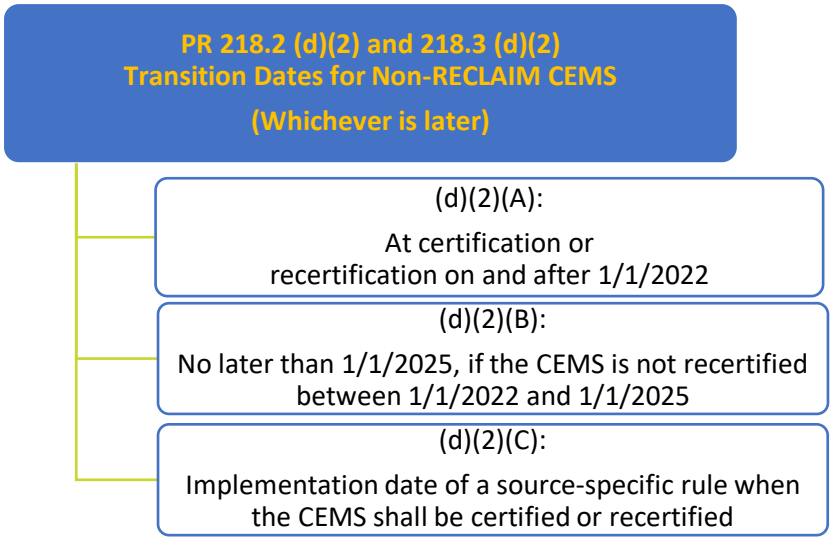


Figure 2-3:
Transition Dates for RECLAIM CEMS

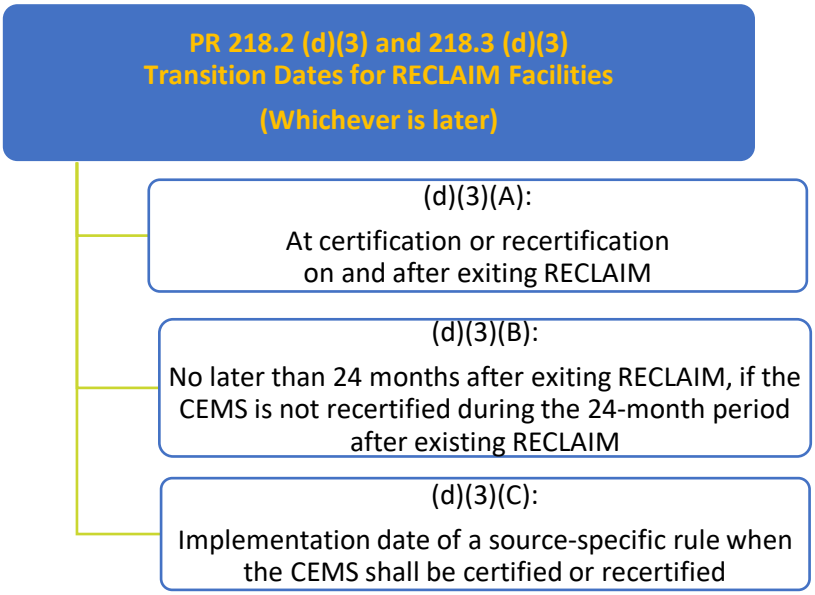


Figure 2-4:
Transition Dates When a Non-RECLAIM CEMS and a RECLAIM CEMS Share a Sampling Interface or Other Component (s)

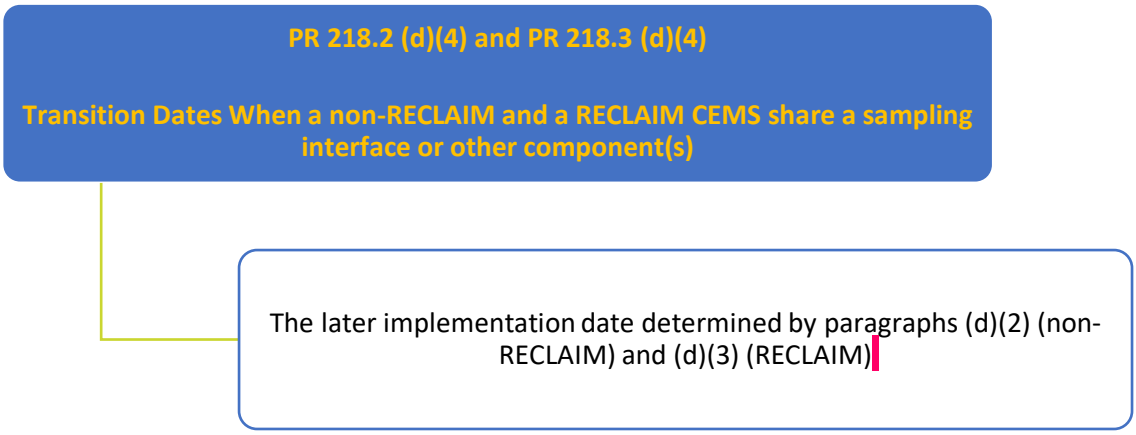
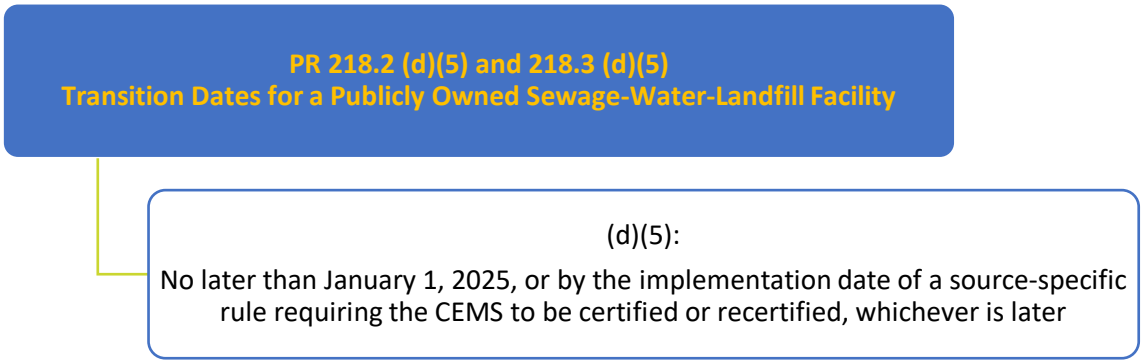


Figure 2-5:
Transition Dates for a Publicly Owned Sewage-Water-Landfill Facility



PR 218.2 (e) - MONITORING REQUIREMENTS

Currently, Rules 2011 and 2012 require continuous operation, except during a scheduled or unscheduled CEMS maintenance or repair for up to 96 hours for each occurrence. Rules 2011 and 2012 allow an extension for an additional 96 hours if the emitting source is not operating.

Currently, Rules 218 and 218.1 also require the maintenance of continuous operation, except during CEMS maintenance or repair for up to 96 hours, however, if additional hours are needed, the owner or operator of the non-RECLAIM CEMS will need to make a request to the South Coast AQMD Hearing Board through an interim variance. Stakeholders suggested at the Working Group

Meetings that the variance process is burdensome to the regulated industry. In addition, stakeholders requested to allow CEMS non-operation when the emitting source is not operating.

PR 218.2 (e)(2) will align the RECLAIM requirement during the CEMS maintenance or repair for all facilities. PR 218.2 will allow CEMS non-operation for up to 96 hours, with an additional 96 hours if the emitting source (unit) is not operating or generating emissions, for each occurrence. For the purpose of demonstrating that the unit is not operating or generating emissions, the owner or operator of the CEMS would be required to refer to one of the options specified under PR 218.2 (e)(4).

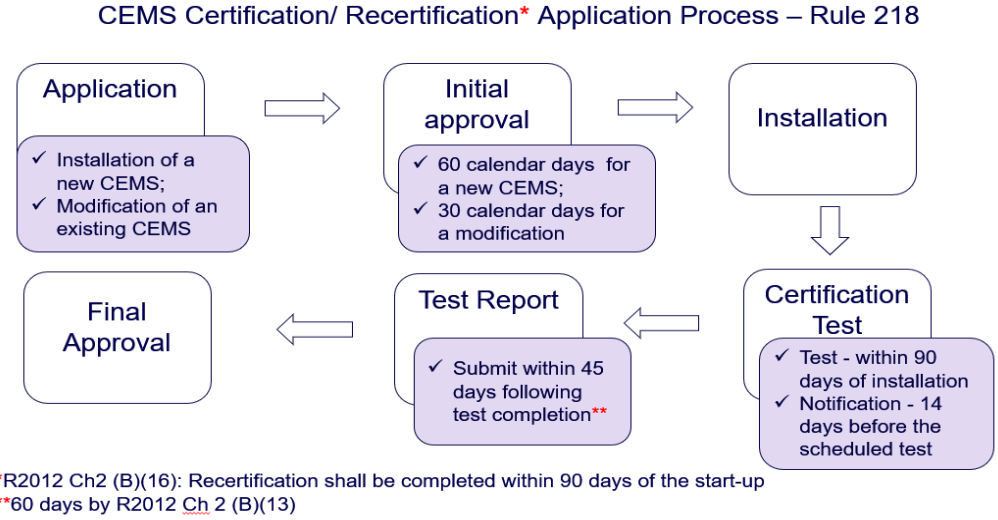
In addition, PR 218.2 (e)(3) will allow the owner or operator to shut down the CEMS when the unit is scheduled to be off for a minimum 168 consecutive hours, provided specific conditions are met. PR 218.2(e)(3) provides monitoring relief during a long-term unit shutdown that is demonstrated by one of the options specified under paragraph (e)(4). For any unit with a shutdown period shorter than 168 consecutive hours, the owner or operator of the CEMS would not be permitted to use this provision for monitoring relief.

PR 218.2 (f) - CERTIFICATION REQUIREMENTS

Certification or Recertification Application Process for a CEMS new installation or modification

PR 218.2 will retain the application process for a full CEMS certification or recertification as specified in Rule 218, including the same application form ST-220, (See Figure 2-5). The initial approval ensures that the application package is complete.

Figure 2-5: CEMS Certification and Recertification Application Process



Similar to Rule 218, Proposed Rule 218.2 will only allow testing laboratories or firms that are approved under the South Coast AQMD Laboratory Approval Program (LAP) to perform CEMS certification and other performance tests. The LAP is a program administered by the South Coast AQMD and grants test method-specific approvals to private testing laboratories or firms to perform tests in determining source compliance with the South Coast AQMD rules and regulations.

Recertification Application Process for a CEMS Modification required within 30 days due to CEMS failure

A concern was raised on the timeline needed to recertify a CEMS when an immediate replacement is required due to a CEMS component failure (e.g., and emergency repair or replacement). According to the currently required recertification process defined by paragraph (f)(2) (depicted by Figure 2-5), a CEMS modification could be put on hold for up to 30 days in anticipation of an initial approval. As such, without a properly operating CEMS, the delay in the CEMS modification would result in an emission data loss and an adverse impact on CEMS data availability.

PR 218.2 (f)(3) proposes a recertification process for a CEMS modification that is required for the CEMS to operate properly and when the modification takes place within 30 days from the time the CEMS failed. According to this alternative recertification process, an initial approval would not be required prior to the CEMS modification and the owner or operator of the CEMS would be allowed to start the modification after submitting a written notification to the Executive Officer. However, after this necessary modification, the owner or operator of the CEMS will be required to comply with the recertification process similar to paragraph (f)(2) with the application form due within 30 days of the CEMS modification.

Recertification or Alternative Process for a CEMS Modification

Currently under R218 and 218.1 the Executive Officer determines if a full certification process is required when a modification to the CEMS occurs. After the final approval of the certification for a new CEMS, any future modification to the CEMS will either trigger a recertification requiring an application or trigger an alternative process not requiring an application. To clarify the recertification process, PR 218.2 includes criteria that would determine CEMS modification recertification process approval. In addition, PR 218.2 includes a new definition "CEMS Final Certification Letter". This definition identifies the minimum information that should be listed on a CEMS certification letter receiving final approval.

For a CEMS modification on a component that is identified in the CEMS final certification letter, the recertification process specified in PR 218.2 subparagraph (f)(2) or (f)(3) would be required. These modifications are expected to better ensure CEMS integrity in providing quality assured data.

For a CEMS modification on a component that is not identified on the CEMS final certification letter but is listed on the South Coast AQMD Technical Guidance Document R-002, a simplified alternative process defined by PR 218.2 subparagraphs (f)(8) would be required. This simplified process involves three steps: (1) notifying the Executive Office prior to the modification; (2) conducting the required quality assurance tests in accordance with the South Coast AQMD Technical Guidance Document R-002 (TGD R-002); and (3) submitting the test report for the Executive Officer's review. The notification prior to the modification provides the Executive Officer an opportunity to evaluate the impacts on CEMS performance, confirming or denying whether the simplified process can be applied. If the Executive Officer deems that the modification does significantly impact the CEMS performance, then the full certification process would be required as specified under PR 218.2 subparagraph (f)(9).

For a CEMS modification on a component that is not identified in the CEMS final certification letter or listed in the South Coast AQMD Technical Guidance Document R-002 but is listed in the Quality Assurance/Quality Control Plan, an even more simplified alternative process defined by PR 218.2 subparagraphs (f)(10) can be applied. In this process, the owner or operator of the CEMS

would notify the Executive Officer of the modification prior to the change, and then start the modification without prior approval. However, the Executive Officer reserves the opportunity to evaluate the modification and require additional tests as needed.

Referencing Part 60 Appendices B and F Provided by Rule 218

Rule 218 subparagraph (c)(1)(B) provides an option to allow the less stringent certification and ongoing QA/QC requirements of Part 60 Appendices B and F for CEMS certification and ongoing QA/QC requirements. This option would also relieve the owner or operator of the CEMS from complying with the corresponding provisions in Rule 218.1 but would still maintain compliance with Rule 218 (e) and (f) recordkeeping and reporting requirements.

Some differences have been identified between Rule 218.1 and Part 60 Appendices B and F for requirements on CEMS certification and ongoing QA/QC. First, there are certification tests required by Rule 218.1 but not by Part 60. These tests include system bias check, NOx conversion, response, and systems without a CEMS enclosure. In addition, there are more stringent standards for certification and QA/QC tests in Rule 218.1, as compared to Part 60. These tests are as follows:

- ✓ For the carbon dioxide analyzer 7-day calibration drift test, Rule 218.1 requires the test to meet the standard for all days, while Part 60 requires the same standard for only 6 out of 7 days.
- ✓ For CEMS out-of-control triggering point by failing daily calibration, Rule 218.1 requires the calibration error to be within 2 times the performance standard for any one test. By contrast, Part 60 allows 2 times the same performance standard over five consecutive days or 4 times the performance standard for any one test before deeming a CEMS to be out-of-control.
- ✓ For the relative accuracy test audit (RATA), Rule 218.1 relative accuracy standard is more stringent for diluent gas. Furthermore, Rule 218.1 requires criteria and approval for rejecting any run, while Part 60 allows the tester to reject up to 3 runs at their discretion.

There are some differences between Rule 218.1 and Part 60 in the number and types of required certification tests. The additional certification tests are important in demonstrating the accuracy and reliability of the system. In practice, non-RECLAIM CEMS have all been certified according to the same criteria, no matter if the owner or operator of the CEMS has opted to comply with the Rule 218.1 or Part 60 Appendices B and F requirements. In practice, staff has utilized and referenced the South Coast AQMD certification testing guidance document in working with the owner or operator of the CEMS to obtain CEMS certification. Application of the guidance document includes the previously mentioned certification tests required by Rule 218.1, but not by Part 60.

The QA/QC test methods are consistent in Rule 218.1 and Part 60. There are differences in the standards for the test results. Given the QA/QC test method consistency and the current practice of utilizing the abovementioned certification testing documents, it is feasible for the owner or operator of the CEMS who opted for the Part 60 requirement to meet the Rule 218.1 standards.

Removing the Part 60 option would not have an impact on the data acquisition and handling system (DAHS). PR 218.2 and 218.3 implements the valid hour and hourly average method as specified in Part 60.

The publicly owned sewage-water-landfill facilities expressed a concern for removing the Part 60 option, especially for the CEMS out-of-control triggering point by failing daily calibration. The unique administration and operation structure of this type of facility poses a challenge on making corrective action immediately for a failed calibration error for certain days.

With above analysis, it is proposed to remove the Part 60 option for certification and ongoing QA/QC requirements, except the CEMS out-of-control triggering point by failing daily calibration for the publicly owned sewage-water-landfill facilities as specified in PR 218.3 (i)(6).

Data Validity for the Interim Period

Rule 218 does not specify for the validity of the CEMS data recorded during the interim period when the CEMS is being certified or recertified. PR 218.2 (f)(11) allows all the emission data measured and recorded by the CEMS to be considered valid for compliance purposes, beginning at the hour of when the calibration error test is passed. The calibration error test for this purpose must be passed before any of the required recertification tests have commenced, but no longer than 14 days prior to the completion of all the required certification tests. However, if the Executive Officer disapproves the final CEMS certification or recertification, all the valid emission data would be retroactively considered invalid. This provision aligns with the Part 75 requirements.

PR 218.2 (f)(13) clarifies the criteria for certifying a SCEMS and adds criteria for certifying a time-shared CEMS and an ACEMS. Paragraph (f)(13) codifies the criteria which is currently being implemented in practice.

PR 218.2 (g) - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

Based on Rule 218 paragraph (c)(4) for QA/QC plan requirements, PR 218.2 subdivision (g) provides additional details in paragraph (g)(1) on what must be included in the plan and in paragraph (g)(3) for the requirements of a revised plan. The guidance document "Guidelines for Continuous Emission Monitoring System Quality Assurance and Quality Control Plan" is an existing document, which will be posted on the South Coast AQMD webpage along with other CEMS guidance documents.

PR 218.2 (h) - RECORDKEEPING REQUIREMENTS

PR 218.2 subdivision (h) provides additional clarity regarding recordkeeping requirements for data and files that should be maintained.

PR 218.2 (h)(1) requires maintenance of records for all raw and processed data that PR 218.3 specifies for the Data Acquisition and Handling System. This also includes data for any compliance demonstrations. PR 218.2 (h)(2) also requires maintaining records of reports, CEMS deviations, maintenance and repair, and activities according to the QA/QC plan that would be needed for compliance demonstration or system evaluation. As required under Rule 218, all the records must be maintained for a minimum period of two years unless otherwise specified.

PR 218.2 (i) - REPORTING REQUIREMENTS

PR 218.2 subdivision (i) reporting requirements is based on Rule 218 subdivision (f). This subdivision retains the requirements for semi-annual reporting under paragraph (i)(1), reorganize the rule structure for clarification, specify the reporting period, and move the rule language related to recordkeeping to PR 218.2 subdivision (h). It is also proposed to retain the requirements for excess emission reporting under paragraph (i)(2) with minor changes. In addition, the requirements

for CEMS failure reporting under paragraph (i)(3) would be retained but the required information for the report would be specified.

New provisions are proposed under paragraphs (i)(4) and (i)(5). Contingent on PR 218.2 (e)(3), which allows a CEMS shutdown during a scheduled unit shutdown that lasts for a minimum 168 consecutive hours, the requirement under paragraph (i)(4) would ensure that the owner or operator of the CEMS notifies the Executive Officer and submits a written report. The requirement under paragraph (i)(5) for Relative Accuracy Test Audit Reporting is an existing requirement by Rule 2012 for RECLAIM CEMS but it is a new requirement for non-RECLAIM CEMS.

PR 218.1 subdivision (i) specifies the excess emission and CEMS failure reporting under paragraphs (i)(2) and (i)(3), as well as the initial and final notification under paragraph (4), as notification by calling 1-800-CUT-SMOG.

PR 218.2 subdivision (i) does not specify the written reporting format. However, staff is planning to develop electronic reporting and enable owners or operators of the CEMS to submit the reports through the South Coast AQMD website using streamlined reporting forms. Staff will have further discussion with the stakeholders regarding this when the electronic reporting development work commences.

PR 218.2 (j) - POSTING OF WRITTEN APPROVAL OF CEMS CERTIFICATION

PR 218.2 subdivision (j) is based on Rule 218 subdivision (g). There is no change proposed to these requirements which requires that a CEMS certification letter for the CEMS is equivalent to a Permit to Operate for an CEMS unit. The certification letter will be posted in a manner prescribed in Rule 206, and any alternative posting manner would require the Executive Officer's approval.

PR 218.2 (k) - EXEMPTION

A South Coast AQMD source-specific rule or permit condition may define different CEMS requirements that are specified in PR 218.2, most commonly on the emissions data averaging method. Different CEMS requirements can also include other CEMS specifications. For example, Rule 1110.2 - Emissions from Gaseous- And Liquid-Fueled Engines defines different implementation dates and testing schedule. In these cases, the requirements defined by the source-specific rule or permit condition will supersede the corresponding requirement specified in Rule 218.2, unless otherwise notified by the Executive Officer.

CHAPTER 3: PROPOSED RULE 218.3

PROPOSED RULE REQUIREMENTS

INTRODUCTION

PR 218.3 is based on Rule 218.1, with a focus on performance specifications. PR 218.3 incorporates: (1) revisions to the provisions retained from Rule 218.1; and (2) a new subdivision (i) on data handling requirements. Subdivision (i) provides specifications on the data handling method for emissions measured below 10 percent or above 95 percent of the upper span value, emission date averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

PR 218.3 (a) - PURPOSE

This subdivision describes the purpose of PR 218.3 which is to establish performance specifications for certification and quality assurance and quality control programs for CEMS. Although Rule 218.1 does not explicitly describe its purpose, this subdivision expresses the same intended purpose of Rule 218.1.

PR 218.3 (b) - APPLICABILITY

PR 218.3 subdivision (b) is identical to PR 218.2 subdivision (b), which retains the concept of the applicability under Rule 218, but provides further clarification. Although Rule 218.1 does not have this subdivision, this was added to PR 218.3 consistent with most South Coast AQMD rules. See discussion for PR 218.2 subdivision (b) in this report for more details.

PR 218.3 (c) - DEFINITIONS

Table 3-1 lists the definitions that have been removed or added in PR 218.3, as compared to the list definitions in Rule 218.1. Definitions were removed because they either were no longer used in the rule or are now integrated into the provision. Definitions were added because it is a new terminology used in the rule or to provide additional clarification. There are also several definitions (e.g., DILUENT GAS and RELATIVE ACCURACY TEST AUDIT) that are being revised. The revisions are to provide clarity, but the meaning is the same. Equations that were incorporated in certain definitions have been moved to Table 3 of PR 218.3 which includes a list of equations used in PR 218.3.

Table 3-1: Comparison of PR 218.3 and Rule 218.1 Definitions that are Removed or Added

	Definitions
Definitions Removed	• CALIBRATION CHECK • CEMS AVAILABILITY PERCENTAGE • CERTIFIED GAS MIXTURE • CONTINUOUS MONITORING • FULL SPAN RANGE • MODIFICATION REQUIRING RECERTIFICATION • OPERATIONAL PERIOD • RELATIVE ACCURACY AUDIT (RAA) • ROUTINE MAINTENANCE • SYSTEM FAILURE • ZERO CHECK • ZERO DRIFT (ZD)
Definitions Added	• ACEMS • CEMS MODIFICATION • LOWEST VENDOR • GUARANTEED SPAN RANGE

	Definitions
	• MAINTENANCE • RECLAIM • RECLAIM FACILITY • FORMER RECLAIM FACILITY • PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY • SPAN RANGE • UPPER SPAN VALUE • UNIT • UNIT OPERATING HOUR

PR 218.3 (d) - IMPLEMENTATION SCHEDULE

PR 218.3 subdivision (d) is identical to PR 218.2 subdivision (d) for implementation schedule. A detailed description of the implementation schedule is provided under the discussion for PR 218.2 subdivision (d).

PR 218.3 (e) - PRE-CERTIFICATION REQUIREMENTS

Prior to the certification testing, the owner or operator of a CEMS must comply with the pre-certification requirements for CEMS location, sampling location, analyzer span range setting, and data acquisition and handling system configuration. The same requirements are specified in Rule 218.1 with regards to CEMS location and sampling location. However, PR 218.3 has new requirements proposed for the analyzer span range setting and data acquisition and handling system configuration.

CEMS Location and Sample Location – Paragraphs (e)(1) and (e)(2)

PR 218.3 paragraphs (e)(1) and (e)(2) address CEMS location and sample location. These requirements are based on Rule 218.1 subparagraphs (b)(1)(A) and (b)(1)(B). There are not any proposed changes to the requirements. However, the rule language has been rearranged to streamline the provisions to improve the clarity.

Span Range – Paragraph (e)(3)

Rules 218 and 218.1 use the term “full span range” defining it as “the full range of values or data display output that a monitor component is certified to measure”. PR 218.2 and 218.3 replace the term “full span range” with “span range” and “upper span value” to avoid confusion between the range and value, without changing the meaning. “Span range” is defined as “the full range that is 0 to 100% of the data display output that a monitor component has been calibrated to measure”, and “upper span value” is defined as “the upper range value of a span range that is 100% of the data display output that a monitor component has been calibrated to measure”.

Span Ranges - Subparagraphs (e)(3)(A) and (e)(3)(B)

Similar to both Rule 218.1 and Rule 2012, PR 218.3 subparagraph (e)(3)(A) requires a span range to be set such that all data points fall within 10 to 95 percent of the upper span value for the measurement to be valid. Emissions falling below 10% of the upper span value is quantified with a specific procedure or reported at 10% of the upper span value.

Also similar to Rule 218.1, PR 218.3 subparagraph (e)(3)(B) requires the upper span value for contaminant monitors to be set between 150 to 200 percent of the allowed concentration limit, or

at a value approved by the Executive Officer. Rule 2012 does not have this requirement, in that RECLAIM CEMS are not used to demonstrate compliance with concentration limits as in a command-and-control regulatory structure.

Alternative Span Range - Subparagraph (e)(3)(C)

There are situations in which PR 218.3 requirements under subparagraphs (e)(3)(A) and (e)(3)(B) cannot be satisfied simultaneously. This situation will occur when the normal concentration of the air contaminant emitted is significantly less than the allowable concentration limit. For example, for a boiler with a Rule 1146 CO emission limit at 400 ppm could have CO emissions monitored between 10 to 20 ppm. For this situation, a multiple span range CO analyzer would be required.

When PR 218.3 (e)(3)(A) and (e)(3)(B) cannot be satisfied simultaneously, PR 218.3 subparagraph (e)(3)(C) exempts the owner or operator of the CEMS from subparagraph (e)(3)(A) and requires that the analyzer shall be set at a span range approved by the Executive Officer. That is, an additional span range would not be established and the monitored data would be allowed to fall at or below 10 percent of the upper span value. It is not critical to quantify data below 10% of the upper span value to show compliance status. The owner or operator of the CEMS can either quantify the data with a PR 218.3 Appendix A procedure or report the measurements at 10% of the span range.

Span Range for Low Concentration Limits - Subparagraph (e)(3)(D)

Stakeholders have expressed concerns on the current span range requirements when measuring very low concentration limit. For example, the most recent amendments to Rules 1135 and 1134 require 2 ppm or 2.5 ppm NOx limits for turbines. Setting a span range with this low concentration limit would require calibration gas at a value less than 4 ppm. These concerns include the availability of low concentration calibration gas, and the challenge to meet performance standards for an extremely low span range. To address the impacts resulting from low concentration emissions, PR 218.3 subparagraph (e)(3)(D) will allow an alternative span range to be set upon Executive Officer's approval. This approval will be based on: (1) unit concentration limit at or below 5 ppm; and (2) new span range not higher than 10 ppm.

For a CEMS air pollutant analyzer with multiple span ranges, the higher span range for a dual range analyzer or the highest span would capture spiking emissions. Spiking emissions most likely occur during startup, shutdown, or during other uncontrolled periods such as a unit malfunction. PR 218.3 subparagraph (e)(3)(E) will exempt the higher span range (if it is a dual range analyzer) or the highest span from span range requirements specified under subparagraphs (e)(3)(A) through (e)(3)(D), if the other analyzer span range(s) are set pursuant to subparagraphs (e)(3)(A) through (e)(3)(D).

Data Acquisition and Handling System – Paragraph (e)(4)

There are currently two major types of Data Acquisition and Handling System (DAHS) software: (1) DAHS software for complying with Rule 2011 and 2012 RECLAIM CEMS requirements, and (2) DAHS software for complying with R218 and 218.1 non-RECLAIM CEMS requirements.

Currently Rules 218 and 218.1 do not specify data handling but provide an option for the CEMS to reference Part 60 Appendix B and F for certification and QA/QC requirements. As a result, owners or operators of the non-RECLAIM CEMS utilize Part 60 for DAHS software.

Non-RECLAIM and former RECLAIM CEMS will be required to comply with PR 218.2 and 218.3 DAHS software requirements, according to the implementation schedule specified in

paragraph (d). Subdivision (i) of PR 218.3 specifies the data handling requirements, addressing data points below 10% or above 95% of the upper span value, emission data averaging, CEMS data availability, and CEMS out-of-control period.

The following PR 218.3 data handling requirements have already been incorporated in the existing DAHS software:

- ✓ Identifying and handling data points below 10% of span range by RECLAIM and non-RECLAIM CEMS DAHS;
- ✓ Identifying Data points above 95% of the upper span value by RECLAIM CEMS DAHS;
- ✓ Conducting emission data averaging as proposed by non-RECLAIM CEMS DAHS; and
- ✓ Specifying CEMS out-of-control period by RECLAIM CEMS DAHS

There are data handling requirements in PR 218.3 that are unique and not currently implemented by the South Coast AQMD or other regulatory agencies. These data handling requirements may require additional DAHS software reprogramming:

- ✓ For data points above 95% of the span range (spiking data), calculating the percent of spiking data on a quarterly basis, recording those data points as 95% of the span range, and identifying them as valid data; and
- ✓ Calculating CEMS data availability on a quarterly basis instead of an annual basis (as currently required) and excluding the newly defined exemption hours from the calculation.

The following data handling requirements in PR 218.3 may cause changes to existing CEMS DAHS software, however the change would be minimal as they have been implemented by other CEMS:

- ✓ Identifying Data points above 95% of span range by certain non-RECLAIM CEMS DAHS;
- ✓ Conducting emission data averaging as proposed for RECLAIM CEMS;
- ✓ Adjusting CEMS data availability calculation equation as proposed for RECLAIM CEMS. It should be noted that the misinterpretation at the previous equation has resulted in a data availability over 100 percent; and
- ✓ Embedding semi-annual report required by paragraph (h)(1) of PR 218.2 to be generated automatically. The permit holders and operators also have the option to prepare the report outside of DAHS without further change to the software.

Staff relied upon input from several CEMS and DAHS vendors in assessing feasibility and costs associated with the previous mentioned software changes.

These vendors support the emission data averaging method proposal in aligning with Part 60 and Part 75 and have informed staff that the data handling module ready to be incorporated into a CEMS DAHS. Vendors have accounted for spiking data and CEMS data availability and although the proposed requirements have not been previously implemented, the DAHS software can address these revisions. In addition, while most of the changes are general to all types of CEMS, the software change to incorporate the startup and shut down exempted hours in data availability calculation will be facility specific, requiring customization of the DAHS software. This additional work is due to the uniqueness of the startup and shut down exemption by the facility's permit condition. It is understood that the startup and shut down exemption from CEMS data availability calculation is desired by the owners and operators of the CEMS in maintaining the data availability under the 95% threshold.

CEMS data availability should not be significantly impacted by the new DAHS integration. However, as an extra precaution, facilities generally choose to conduct the integration during offline time when the unit is not generating emissions. Alternatively, the owner or operator of the CEMS may conduct the integration towards the end of the data availability calculation period (calendar quarter by PR 218.2/218.3) when the owner or operator of the CEMS is confident that the CEMS data availability would be maintained well above 95 percent.

Vendors have not expressed any concerns regarding their capability of implementing PR 218.2 and 218.3. They normally handle a large number of projects simultaneously and feel comfortable that they will be able to meet the demands that will occur due to the requirements specified in PR 218.2 and 218.3.

Operational Period – Paragraph (e)(5)
Similar to Rule 218.1 subparagraph (b)(1)(F), this provision requires that the CEMS operational period prior to any certification tests shall be minimum of 168 continuous hours.

PR 218.3 (f) - CERTIFICATION REQUIREMENTS AND PERFORMANCE SPECIFICATIONS FOR NEW OR MODIFIED CEMS
PR 218.3 subdivision (f) specifies the certification test requirements. Most of the revisions are designed to codify current practices for certification and performance specifications for new or modified CEMS to ensure quality performance of the CEMS. For each CEMS application, the South Coast AQMD staff works closely with the owner or operator of the CEMS to provide guidance to maximize the CEMS performance. It should be noted that PR 218.2 and 218.3 do not provide specifications on mass emission monitoring. Therefore, the CEMS in need of a bias test for adjusting mass emission calculation will continue to be subject to the applicable requirements specified in Rules 2011 and 2012.

PR 218.3 does not change current test procedures, but there are revisions to the performance specifications which were established several decades ago. With the progression of emission control technologies, substantially lower emission rates are being achieved as compared to the past two decades.

During the Working Group Meetings, stakeholders expressed concerns in achieving the existing specifications for the 7-day calibration drift and linearity error tests for CEMS monitoring units with low emission limits. With these lower unit emission limits the NOx and CO *de minimis* standards should be revised. The proposed rule language also harmonizes requirements with Part 75 and provides more clarification for existing requirements.

Seven-day Calibration Drift Test – Paragraph (f)(1)
The seven-day calibration drift test under paragraph (f)(1) is based on Rule 218.1 subparagraph (b)(2)(A). This test is comprised of a series of eight calibration error tests during seven consecutive CEMS operating days, with the test performed once each day, and at the beginning and end of this period. No manual or automatic adjustment is allowed during each calibration error test before the high scale calibration is completed or during any part of this seven-day calibration drift test.

The calibration error for any of the calibration error tests, must not exceed 2.5 percent of the upper span value for pollutant and dilution gas analyzers and 3.0 percent of the upper span value for flow monitors. The equation for the calibration error test is specified as Equation 1 in Table 3.

Several stakeholders have commented that it is challenging to meet the 2.5 percent standard with an upper span value at or below 10 ppm. Stakeholders commented that the 2.5 percent standard is more stringent than the 5.0 percent standard for the calibration error test conducted as part of the ongoing QA/QC, which is also known as daily calibration.

Staff reviewed 7-day calibration drift test reports for NOx emission levels ranging from 2 ppm to 50 ppm, and did not find any difficulty in the CEMS to measure lower emissions to meet the 2.5 percent standard. Staff requested but did not receive reports from stakeholders showing failing results. Stakeholders recommended, and staff agreed, that the cutoff level for determining the alternative (*de minimis*) standard should be 10 ppm of upper span value for NOx analyzers.

At the August 1, 2019 Working Group Meeting staff recommended 0.3 ppm as an alternative standard for 7-day calibration drift test. This is the difference between the CEMS response to a calibration gas and its known value. The recommendation was based on the stakeholders' suggested 10 ppm NOx upper span value as the cutoff level. The calculated difference of calibration gas value and CEMS response at this level with the existing standard of 2.5 percent of the upper span value is $|C - A| = SR \times CE = 10 \times 2.5\% = 0.25\ ppm$. The alternative standard is the difference of 0.25 ppm, rounded to 0.3 ppm. However, stakeholders commented that it is still difficult to meet the recommended 0.3 ppm alternative standard, and some other stakeholders commented that there should be data to support the recommendation.

At the September 12, 2019 Working Group meeting staff withdrew the previously recommended alternative standard (0.3 ppm). If stakeholders had provided supporting data showing the inability to comply with the standard, then staff would have considered an alternative proposal. However, no such data was provided. In the absence of such data and subsequent discussions among staff, it was concluded that such claims of compliance difficulties lacked credibility and that the existing standard would be maintained. It should be noted that the existing 7-day calibration drift standard (2.5% of the span range) is universally referenced by the US EPA and other regulatory agencies.

Analyzer Enclosure – Paragraph (f)(2)

PR 218.3 paragraph (f)(2) specifies the requirements for the analyzer enclosure. These requirements are based on Rule 218.1 subparagraph (b)(2)(B). The rule language was reorganized to improve the clarity and streamline provisions. A requirement was added that requires the owner or operator of the CEMS to provide corrective actions within 8 hours of receiving the audible alert when temperature drift exceeds the manufacturer's recommended specifications for the analyzer enclosure.

Performance Standards for Relative Accuracy Test Audit (RATA) – Paragraph (f)(3)

PR 218.3 subparagraph (f)(3) will maintain the following relative accuracy standards that are based on Rule 218.1 subparagraph (b)(2)(C):

- Ten (10) percent for O2/CO2 concentration;
- Twenty (20) percent for pollutant concentration or mass emission; and
- Fifteen (15) percent for stack flow.

In addition, the following changes are incorporated in PR 218.3 paragraph (f)(3):

- Specifies the calculations for *de minimis* standards by Equations 5, 6, and 7 in Table 3 of PR 218.3;

- Maintains Rule 218.1 *de minimis* standards, but adds a *de minimis* standard of 1.0 percent for CO2 and reduces the current *de minimis* standard from 1.0 ppm to 0.5 ppm for NOx concentration limit at or below 5.0 ppm;
- If the measured O2/CO2 concentration is at or below 15 percent, allow a relative accuracy standard of 20 percent for O2/CO2 concentration with Executive Officer's approval; and
- If the CO emission limit is lower than 2.0 ppm, allow the *de minimi*s standard for CO concentration as the unit's CO emission limit.

The *de minimis* for the NOx concentration is calculated as |d|+|cc|[1]. Under Rule 218.1, the standard is 1.0 ppm. This standard is no longer appropriate when the NOx emission limit is very low (e.g., 2 ppm for a combined cycle turbine). A review of 189 RATA sets of results that the South Coast AQMD received over the past two years for turbines, found that 171 sets of RATA tests have *de minimis* at or below 0.5 ppm. For the remaining 18 RATA tests, 11 tests were for CEMS measuring NOx emissions above 22 ppm which are not considered low emitters that are in need of a *de minimis* standard. The remaining 7 tests were failed tests. Based on this analysis, it is recommended to lower the NOx *de minimis* standard from 1.0 ppm to 0.5 for units with NOx emission limit at or below 5 ppm.

The relative accuracy standard in Rule 218.1 is 10 percent for O2/CO2 concentration, as compared to 20 percent in both Rule 2012 and Part 60 Appendices B and F. The majority of the CEMS that will be subject to PR 218.2 and 218.3 currently reference Rule 2012 and Part 60 Appendices B and F for performance standards. Relative accuracy testing becomes more challenging when the measured diluent gas concentration is low. Therefore, it is proposed to maintain the 10 percent relative accuracy standard for O2/CO2 at higher concentrations. However, when the diluent gas concentration is at or below 15 percent, the owner or operator of the CEMS would be allowed to use a 20 percent relative accuracy standard for O2/CO2 concentration.

Currently, the *de minimis* standard in Rule 218.1 is 2.0 ppm for CO. As previously mentioned, the South Coast AQMD has recently permitted several units with a CO emission limit at 1.5 ppm. PR 218.3 sets the *de minimis* for CO concentrations as the unit's emission limit when the limit is lower than 2.0 ppm. For example, if the CO emission limit of a unit is 1.5 ppm, a *de minimis* standard of 1.5 ppm for CO concentration would apply.

Other Tests Required for the Relative Accuracy Test Audits – Paragraph (f)(4)

PR 218.3 paragraph (f)(4) is based on Rule 218.1 paragraph (b)(3), but no longer requires an interference check that is not generally implemented in practice. Paragraph (f)(4) has added a requirement for a NOx converter efficiency test and sampling system bias check. Although a NOx converter efficiency test is required by Rule 218.1 (d)(5) there is no specification on when this test should be conducted. In practice, the owners or operators of the CEMS have being instructed to conduct these tests along with each relative accuracy test audit as they are considered essential to ensure CEMS performance.

There are no changes to concentration stratification requirements. The technical details provided under Rule 218.1 subparagraph (b)(3)(C) are now presented in Attachment B to PR 218.3.

[1] d = average of differences between the NOx concentration measurement system reading and the corresponding reference method in ppmv; cc = confidence coefficient as determined by the equations in Section 8 of 40 CFR Part 60, Appendix B, Performance Specification

Linearity Error Test – Subparagraph (f)(4)(F)

With the advancement of some technologies, not only NOx emissions are lowering, but CO emissions are also approaching lower levels for certain types of equipment. Based on existing permits for turbines, CO emission limits for several new installations are at 1.5 ppm. During the CEMS certification testing for these units, operators have found it difficult to pass the linearity test.

Passing the linearity check for low emitting sources is more challenging for CO as compared to other pollutants. The detection sensitivity for CO analyzers are not as robust as NOx analyzers. Moreover, Rule 218.1 linearity check standard is more stringent than the standards for some of the other tests. In comparing the linearity check with calibration error and RATA test, CEMS subject to Rule 218.1 is more likely to fail the linearity check than the calibration error and RATA test. The reason for this high failure rate is that the calculation equation for calibration error test use the upper span value (vs. calibration gas reference value for linearity check) as the denominator, which is a (higher value as a denominator than using calibration gas reference value. For the RATA test, there is an additional option for low emitters to refer to the *de minimis* standards.

The current requirement in Rule 218.1 (a)(15) defines linearity as a percentage, by calculating the difference between the mean response and reference value with respect to the reference value. For an analyzer with a 5 ppm upper span value, the reference value would be 1 to 1.5 ppm for the low level check (20-30% of the span). This value is so low that a minor variation can result in a highly qualified analyzer to fail.

Based on this information, subparagraph (f)(4)(F) proposes to incorporate a new calculation equation (i.e., Equation 3a in Table 3 of PR 218.3) for the linearity error test. For an air pollutant analyzer with the upper span value at or below 5 ppm, the linearity error standard should be defined as 5.0 percent of the upper span value as calculated by Equation 3a in Table 3. For an air pollutant analyzer with the upper span value higher than 5 ppm, the linearity error standard remains unchanged as 5.0 percent of the calibration gas concentration reference value as calculated by Equation 3 in Table 3.

Alternative Continuous Emission Monitoring System (ACEMS) – Paragraph (f)(5)

ACEMS is an emissions monitoring system that does not directly monitor emissions like a CEMS. Instead, an ACEMS utilizes process operating parameters and sensor inputs to calculate emissions via modeling.

ACEMS is also known as a predictive emissions monitoring system (PEMS) based on U.S. EPA guidelines on testing requirements for assessing the acceptability of PEMS. PEMS specifications can be found in U.S. EPA 40 CFR Part 60 Performance Specification 16 and Part 75 Subpart E. With regards to South Coast AQMD rules, Rules 218 and 218.1 do not regulate ACEMS. Rule 2012 Chapter 2 requires the ACEMS to be certified according to the criteria specified in 40 CFR Part 75 Subpart E.

Currently, in the South Coast AQMD there are eight ACEMS certified through Rule 2012. When the facilities with these ACEMS exit from RECLAIM, these ACEMS would be subject to PR 218.2 and 218.3. On this basis, staff proposes to incorporate the same requirements specified in Rule 2012 Chapter 2 for ACEMS into PR 218.2 and 218.3.

For the ongoing QA/QC, an ACEMS differs from a CEMS with regards to the daily assessment requirement. The daily assessment for an ACEMS is a check on the modeling software to verify

that the emission values generated by the ACEMS modeling software are consistent as certified. This assessment is generated on the software level, and do not require calibration gas injection. Additionally, the owner or operator of an ACEMS would need to conduct periodical calibration to the ACEMS sensors according to the schedules and procedures recommended by the manufacturers.

PR 218.3 (g) - QUALITY ASSURANCE TESTING REQUIREMENTS AND SPECIFICATIONS

Calibration Error Paragraph – (g)(1)

During the Working Group Meetings, there was a discussion on the frequency in which the calibration error should be conducted as part of ongoing QA/QC, as well as requested clarifications on the required time intervals between subsequent calibration error tests.

With regards to calibration error for pollutant and diluent analyzers, Rule 218.1 clause (b)(4)(A) requires one test each day "as close to 24-hour intervals as practicable", while Rule 2012 requires two adjacent tests "to the extent practicable, approximately 24 hours apart". On the other hand, Part 75 specifies the test to be conducted every 24 hours with a 2-hour grace period, which means the adjacent two tests should not be more than 26 hours apart. Stakeholders had commented that the existing provisions in Rule 218.1 and Rule 2012 are vague and asked if there could be consideration for a grace period.

Staff agreed that the existing rule language, "as close to 24-hour intervals as practicable" or "approximately 24 hours apart", is vague. Therefore, PR 218.3 includes a 2-hour grace period which will allow up to 26 hours for the owner or operator of the CEMS to pass a calibration error test. Staff also proposes a 4-hour grace period at unit restart after one or more unit non-operation days.

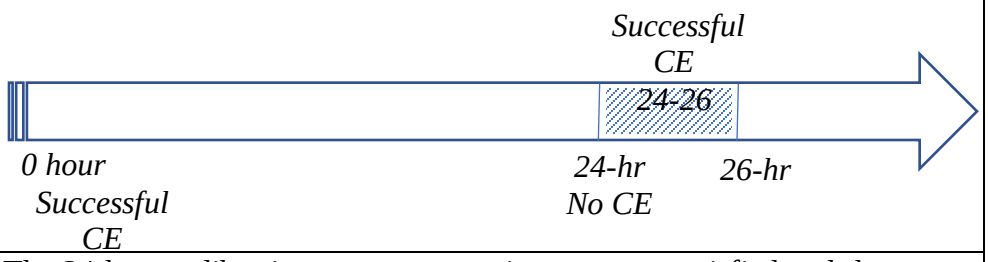
With regards to monitoring data validity as related to this test, it is proposed that each successful 24-hour calibration error test validates up to 26 hours. However, any failed test within the 26-hour window would invalidate the subsequent data until the next successful test.

To clarify the concept, staff is providing the following two examples in Figure 3-1 to help explain the scenarios under this new proposal:

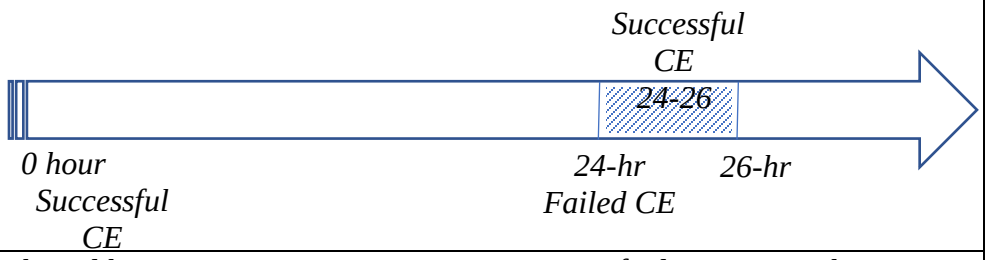
Figure 3-1: Examples for Calibration Error Test Grace Period and Data Validity

- Example 1

Scenario	A calibration error test, set in the software to be conducted automatically every 24 hours at a defined time, failed to be conducted at the defined time of a day due to an unknown reason. Subsequently, the owner or operator of the CEMS conducted and passed a calibration error which was within the 26-hour window since last successful calibration.

Pictorial Depiction of the Scenario	
Compliance Determination	The 24-hour calibration error test requirement was satisfied and there was no CEMS out-of-control period.

- Example 2:

Scenario	A calibration error test was conducted at the defined time of the day but failed because it was not meeting the calibration error standard. The owner or operator of the CEMS recognized the failed test and then conducted another test with passing result. This successful test was within the 26-hour window since the last successful calibration.
Pictorial Depiction of the Scenario	
Compliance Determination	The calibration error test requirement was satisfied. However, there was a CEMS out-of-control period, which began at the hour of the failed test and ends at the hour of the subsequent successful test.

With regards to calibration error for a stack flow monitor, Rule 218.1 specifies the calibration error standard, but does not specify how the test should be conducted. PR 218.3 clause (g)(1)(A)(ii) provides the manner in which the test is to be conducted in applying existing test specifications in Rule 2012 for RECLAIM CEMS stack flow monitors. The calibration error test for a stack flow monitor would be conducted by introducing a zero-reference value to the transducer or transmitter for every 14-day period.

Relative Accuracy Testing Audit (RATA) – Paragraph (g)(2)

As part of the ongoing QA/QC requirements, Rule 218.1 subparagraph (b)(4)(C) requires a RATA to be conducted once every 12 months, and no later than the end of the calendar quarter in which the date of the original certification test was performed. A concern was raised that it is not practical to refer to the original certification test date. To address this concern, PR 218.3 (g)(2) requires this test to be performed annually and no later than the end of the calendar quarter of the previous relative accuracy test. This proposed rule language no longer references the original certification test date. In addition, the RATA will be conducted in the as-found unit operating condition.

Stakeholders also requested to align PR 218.3 with the Rule 2012 for scheduling a RATA after a unit restart. As a result, PR 218.3 includes a provision that if the unit for which the CEMS is certified to monitor is not operating or generating emissions when a RATA is due, then the RATA would be allowed be performed within 14 days after the unit is restarted.

Cylinder Gas Audit (CGA) for Pollutant and Diluent Gas Analyzers – Paragraph (g)(3)
Currently, Rule 218.1 (b)(4)(D) requires a Cylinder Gas Audit (CGA), a provision that is not required in Rule 2012 for RECLAIM CEMS. However, Rule 2011 and 2012 requires a more frequent RATA and a RATA is considered more stringent than a CGA. It is not suggested to change the CGA test method and frequency required under Rule 218.1. PR 218.3 includes language to clarify that the linearity error check in compliance with 40 CFR Part 75 will be allowed in lieu of a CGA. PR 218.3 will not require a CGA for the quarter when the accumulative unit operating hours are no more than 168 hours.

Daily Check and Periodic Calibration for ACEMS – Paragraph (g)(4)
Daily checks and periodic calibration of ACEMS are currently not required under Rule 218.1 or Rules 2011 or 2012, but are conducted in practice. Unlike a regular CEMS that directly measures emissions, an ACEMS calculates emissions by a modeled equation using measured equipment operating parameters. As a result, instead of requiring a daily calibration specified in paragraph (g)(1), daily check and periodic calibration to the sensors are recommended by the ACEMS vendor and approved as part of the QA/QC plan by the Executive Officer.

Calibration and Checks for Stack Flow Monitor – Paragraph (g)(5)
Currently Rule 218.1 does not specify calibration error and other checks for the stack flow monitor. The proposed requirements under PR 218.3 paragraph (g)(5) are based on the existing requirements in Rules 2011 and 2012 for RECLAIM CEMS stack flow monitor.

Maintenance for Fuel Flow Meter – Paragraph (g)(6)
Within the context of this rule, a fuel flow measuring device is utilized for calculating stack flow in conjunction with a F-factor. Paragraph (g)(6) of PR 218.3 are not specified in Rule 218.1 or Rules 2011 and 2012, but are currently written in the CEMS QA/QC plan and conducted in practice.

PR 218.3 (h) - CALIBRATION GAS AND ZERO GAS

Calibration Gas – Paragraph (h)(1)
PR 218.2 and 218.3 requires that calibration gas will be utilized for various tests and procedures, such as system bias, linearity error check, calibration error test, and cylinder gas audit. The required pollutant concentration of the calibration gas corresponds to the CEMS analyzer span range (e.g., 0-20, and 80-100 percent of the upper span value for calibration error test). Since the emission limit of the unit is a determining factor for the CEMS span range, a lower emission limit means a lower concentration calibration gas would be required.

Stakeholders expressed a concern on the availability of very low concentration calibration gas. This concern has been raised because of the lower emission limits required by the South Coast AQMD rules, regulations, or permit conditions. For example, a turbine with a recently regulated NOx emission limit of 2 or 2.5 ppm would have its CEMS NOx analyzer's span range set at 5.0 ppm. For the calibration error test performed at the low range (0-20 percent of span range), calibration gas with NOx at 1.0 ppm or lower would be needed (i.e., 5.0 x 20% = 1.0 ppm). Calibration gas with NOx at 1.0 ppm is available but more commonly in a lower grade (e.g., a

research gas mix instead of a standard reference material) that is not permitted under Rules 218 and 218.1.

This concern is resolved in the application of two approaches. The first approach is to allow a higher span range for the CEMS monitoring a unit with low emission limit (e.g., at or below 5 ppm) upon Executive Officer's approval. This approach is addressed under the provision for span range. For a turbine with NOx emission limit at 2 or 2.5 ppm, the span range would be allowed to be set up to 10 ppm upon approval.

The second approach provides more certification testing options for calibration gas. This approach was based on staff's review of certification programs provided in other rules and regulations. The list of options for calibration gases under the specific rule or regulation is presented in Table 3-2.

Table 3-2: Required Certification Programs for Calibration Gas

Required Certification Programs for Calibration Gas			
Rule 2012	**40 CFR Part 60**	**40 CFR Part 75**	**Rule 218.1 (d)(1)**
• EPA Protocol gas • National Institute of Standards and Technology (NIST)/EPA approved standard reference materials (SRM) • Certified reference materials (CRM)	• EPA protocol gas	• A standard reference material (SRM); • A standard reference material-equivalent compressed gas primary reference material; • A NIST traceable reference material; • NIST/EPA-approved certified reference materials (CRM); • A gas manufacturer's intermediate standard; • An EPA protocol gas; • Zero air material; or • A research gas mixture	• EPA protocol gas • If not covered by the EPA protocol, submit the gas vendors alternative certification protocol for the specific compound or compounds upon the approval of EO • Compressed and/or filtered air, such as instrument air, may also be used in lieu of oxygen span gas under certain conditions

Under the PR 218.3 paragraph (h)(1) for calibration gas requirements, several options from 40 CFR Part 75 have been added. The owner or operator of the CEMS would be able to utilize the calibration gas identified in the following:

- ✓ EPA protocol gas
- ✓ A standard reference material;
- ✓ A standard reference material-equivalent compressed gas primary reference material;
- ✓ NIST traceable reference material;
- ✓ NIST/EPA-approved certified reference materials;
- ✓ If not covered by any of above programs, upon the approval of EO, facility may use NIST research gas mixture, gas manufacturer's intermediate standard, or gas manufacturer's alternative certification protocol for the specific compound or compounds

- ✓ Compressed and/or filtered air, such as instrument air, may also be used in lieu of oxygen span gas under certain conditions

Zero Gas – Paragraph (h)(2)
PR 218.3 paragraph (h)(2) addresses zero gas based on the requirements set forth in Rule 218.1 paragraph (d)(2). Zero gas can be used for the quality assurance test when the low range 0-20% span calibration gas is required. Normally, owners or operators of the CEMS use nitrogen gas as zero gas, which meets the zero gas definition and requirements for both gaseous air contaminant analyzers and diluent analyzers. There are no issues identified with the zero gas definition and requirement, and thus there are no proposed changes from the Rule 218.1 (d)(2) paragraph (d)(2) requirements.

PR 218.3 (i) - DATA HANDLING

Data Points Below 10 percent of the Upper Span Value – Paragraph (i)(1)
Requirements under paragraph (i)(1) remain unchanged from the existing requirements under Rule 218.1 clause (b)(1)(C)(v). Data below 10 percent of the upper span value can be reported at the 10 percent of the upper span value. An exception would be a multiple span range analyzer when the data is above the 95 percent, or within 10 to 95 percent of the upper span value of another span range.

Data Points Above 95 percent of the Span Range – Paragraph (i)(2)
During normal operation conditions, CEMS monitored data are expected to be within 10 to 95 percent of the upper span value. Rule 218.1(b)(1)(C)(vi) specifies that:

> "*Should any data points fall above 95 percent of FSR, the value shall be invalid for quantification and the CEMS shall be considered unavailable for the purposes of determining CEMS availability percentage. All excursions above 95 percent of FSR and the duration of these excursions shall be reported in the CEMS summary report as prescribed under Rule 218(f).*"

This requirement is consistent with the requirement in Rule 2012 for NOx CEMS of RECLAIM facilities.

In complying with this requirement under Rule 218.1(b)(1)(C)(vi), one-minute data points that are above 95% of the upper span value cannot be used during the calculation of data averaging to 15-minute, hourly, or any other intervals. Likewise, 15-minute or hourly data above 95% of the upper span value cannot be used for any subsequent calculation or compliance demonstration.

Concerns have been raised whenever spiking data points are discarded for emission calculation or compliance demonstration. This not only leads to data loss, but also underestimating averaged emissions. Additionally, it is difficult to estimate excess emissions, especially for longer periods of data spiking.

With respect to data analysis, staff reached out to stakeholders and collected one-minute data for CEMS monitoring various emission sources. Staff analyzed: (1) one-minute data for seven heaters using refinery gas for a one week period, (2) one-minute data for four engines using landfill gas for seven individual days when excess emissions were reported, and (3) three years of 1-minute spiking data summary for three engines that have frequent startups (100 to 200 startups a year). Most of the emission spiking incidents occurred at the time of startup and shutdown. There is a possibility of data spiking at load change, fuel change, or abnormal operating conditions. However,

these conditions were more likely to result in high emissions but were less likely to create spikes over 95% of the upper span value. With regards to data spiking frequency, less than 1 percent of one-minute data spiked over 95% of the upper span value for all the days being analyzed except for two days. For most operations, it is unlikely the one-minute spiking percentage over a calendar quarter basis would be over 1 percent. Given that 1 percent of operation equates to only 14.4 minute-periods, it is reasonably certain that 1 percent spiking emissions would not have a significant effect on the overall NOx emissions.

Based on the above mentioned findings, PR 218.3 paragraph (i)(2) proposes to report the one-minute spiking data at 95% of the upper span value, and consider this data as valid for calculations leading to quantification for compliance purposes and for CEMS data availability.

PR 218.3 paragraph (i)(2) also proposes to incorporate a backstop measure to prevent frequent occurrence of data spiking over 95% of the upper span value. It is also recommended that the CEMS data acquisition and handling system be set such that it flags all spiking data points (one-minute, 15-minute, or hourly), and calculates a spiking data percentage for each calendar quarter using the following equation:

Spiking Data Percentage = F/T x 100%

Where:

F is the amount of flagged one-minute data points recorded pursuant to clause (i)(2)(C)(i) for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit; and

T is the total amount of one-minute data points recorded for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit.

When the percentage exceeds 1% for any two calendar quarters (not necessarily sequential) in a consecutive four calendar quarter period and the total unit operating hours for each of those two quarters are more than 50 hours, another span range (a higher span) would be needed. The owner or operator of a CEMS would be required to maintain 1-minute emission data for at least two years to demonstrate compliance with this proposal, according to the recordkeeping requirement specified under PR 218.2 subdivision (h).

Data Validity for Measurements Below 10 Percent or Above 95 Percent of the Upper Span Value – Paragraph (i)(3)

Paragraph (i)(3) specifies data validity for measurements below 10 percent or above 95 percent of the upper span value. Data below 10 percent of the upper span value have been considered valid under Rule 218.1 and Rule 2012 and will continue to be considered valid under paragraph (i)(3). Data above 95 percent of the upper span value (spiking data) have been considered invalid under Rule 2012 (not specified in Rule 218.1). However, as discussed above for PR 218.3 (i)(2), those spiking data would be defined as valid data under paragraph (i)(3) if all quality assurance requirements are met.

Emission Data Averaging – Paragraph (i)(4)

For the hourly average calculation, the owners or operators of CEMS in the South Coast AQMD primarily adhere to one of the two methods. For SOx and NOx RECLAIM CEMS, the method is specified in Rule 2011 or Rule 2012, respectively. Non-RECLAIM CEMS are currently subject to

the requirements specified in Rules 218 and 218.1. Because Rules 218 and 218.1 do not have a provision specifying an emission data averaging method, the owners and operators of non-RECLAIM CEMS utilize the emission data averaging method specified in Part 60. Since Part 60 is aligned with Part 75 for EPA's Acid Rain Program on emission data averaging method, a CEMS that references Part 60 method essentially adhere to Part 75 method.

Staff compared the hourly average calculation methods by Part 60/Part 75 and Rule 2012 and have identified the differences as shown in Table 3-3:

Table 3-3: Comparing the hourly average calculation methods by Part 60 and Rule 2012

Requirement	Part 60/Part 75	Rule 2012
Hourly Average	Directly calculated from all valid one-minute data of the hour	• Each quadrant hour average is generated from all valid one-minute data of the quadrant hour; • The hourly average is calculated from all valid quadrant hour averages of the hour
Unit Operating Hour	• Including both full operating hours and partial operating hours; • In a partial operating hour, CEMS monitoring and recording is not required for the quadrant hour when the unit is not operating	• No concept of unit operating hour; • Requiring CEMS monitoring and recording at all time disregarding the unit operation status
Maintenance or QAQC Hours	• Requiring a minimum of one or two valid data points separated by more than 15 minutes depending on whether it is one or more than one quadrant hour with unit operation; • No limit on how many this type of hours allowed	• Requiring two valid quadrant hours which means at a minimum of two valid data points separated by more than 15 minutes; • Limiting a maximum of four maintenance or QAQC hours

PR 218.3 (i)(4) proposes to apply the Part 60/Part 75 emission data averaging method. This data handling method is widely used by other regulatory agencies. Based on discussions with the stakeholders, it is understood that the CEMS or Data Acquisition and Handling System (DAHS) vendors can readily make the modification to the RECLAIM CEMS that have applied a different data averaging method.

The Part 60/Part 75 emission data averaging method specifies how an hourly emission average should be determined. The emission limit for a source is typically based on the hourly emission average. There are some source specific rules that require demonstrating compliance for a different emission average time interval (e.g., 15-minutes in R1146).

Regarding emission averaging for a time interval other than 1-hour, PR218.3 (i)(4) proposes:

- A 15-minute interval, when emission data could be averaged for each 15-minute quadrant of the hour in which the unit operates, utilizing all valid data points; and
- An interval greater than 1-hour, when emission data could be averaged for the required interval utilizing hourly averages computed in accordance with PR 218.3 (i)(3).

Due to the uniqueness of various regulated sources and their operations, the emission averaging intervals and methods of other South Coast AQMD rules and permit conditions may differ from PR218.3 (i)(4) requirements. For these situations, with the Executive Officer's approval, the comparable requirement in the other rule or the permit condition would supersede the equivalent requirement of PR218.3 (i)(3), pursuant to the exemption provision under PR 218.3 (l).

CEMS Data Availability – Paragraph (i)(5)

CEMS data availability has been discussed in several Working Group meetings. Several aspects of this key topic include the calculation equation, hours to exclude, period covered for the calculation, and the 95 percent data availability threshold.

Rule 218.1 provides specifications on CEMS data availability in paragraph (a)(6) and subparagraph (b)(4)(E). Paragraph (a)(6) defines CEMS data availability as a percentage calculated as the ratio of the total unit operating hours for which the CEMS provided quality-assured data, to the source total unit operating hours during a specified period. These hours exclude periods of calibration, maintenance, repair, or audit, up to a maximum of 40 hours per month. Subparagraph (b)(4)(E) specifies that the Executive Officer may require recertification of the CEMS if the annual availability percentage falls below 95 percent. Annual CEMS availability percentage calculations will be based on the year ending on the last day of the calendar quarter in which the CEMS was originally certified.

With regards to the period covered for the calculation, both Rule 218.1 and Rule 2012 are based on an annual period with a difference on how often the annual data availability is calculated. Rule 218.1 specifies a block annual period with the data availability calculated once every year. Rule 2012 requires a rolling annual period with the data availability calculated every day. Stakeholders commented that the rolling annual data availability could penalize the owner or operator of the CEMS beyond the data loss period.

Based on these stakeholder comments and follow-up staff analysis, it is proposed that CEMS data availability be computed for each calendar quarter. This approach aligns with the accompanying proposed requirements when the data availability falls below 95 percent for one or two consecutive quarters. In addition, this proposal addresses stakeholders' concern that low data availability of the previous calendar quarter would not affect data availability of any subsequent calendar quarter. It is also recognized that there are existing requirements by other regulatory agencies requiring various time periods (e.g., monthly or quarterly) covered for the CEMS data availability computation.[2]

[2] For example:

- ❖ Continuous Emission Monitoring System (CEMS) Code. Alberta Environmental Protection, May 1998.
- ❖ Technical Manual 1005: Guidelines for Continuous Emissions Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS). Air Quality Permitting Program Bureau of Technical Services, July 2001.

For the CEMS data availability calculation, Rule 2012 specifies the following equation:

W = Y/Z x 100%, where:

- W means the percent annual monitor availability;
- Y means the total operating hours for which the monitor provided quality-assured data during the period from the date the NOx pollutant concentration monitoring analyzer was provisionally certified or 365 days prior to the current date (not counting the current day), whichever date is later, to the day previous to the current date; and
- Z means the total operating hours of the affected piece of equipment during the period from the date the NOx pollutant concentration monitoring analyzer was provisionally certified or 365 days prior to the current date (not counting the current day), whichever date is later, to the day previous to the current date.

The concern in applying this calculation is that some RECLAIM facility owners and operators of CEMS interpret the variable "Y" as operating hours of the CEMS instead of the unit (emission source). In doing so they count in "Y" the hours when the unit does not operate but the CEMS is monitoring zero emissions. As a result, RECLAIM facilities may have calculated data availability greater than 100 percent. Some CEMS are also in the EPA Acid Rain Program and subject to 40 CFR Part 75, which provides a detailed procedure in determining CEMS data availability. In the Part 75 calculation, the parameter equivalent to "Y" is defined as total unit (emission source) operating hours for which quality-assured data were recorded. Staff agrees that this is the correct interpretation of this parameter. Consequently, the "Y" value should be the operation hours of the emission source, instead of the CEMS. With this interpretation the CEMS data availability cannot be greater than 100 percent.

On this basis, PR 218.3 paragraph (5) proposes to specify a modified equation for PR 218.3 CEMS data availability calculation. That is, the same equation (W = Y/Z x 100%) will be utilized, except that "Y" means the total unit operating hours for which the monitor provided quality-assured data during the calendar quarter.

It is also proposed to exclude certain hours from the CEMS data availability calculation. The proposed hours are (1) startup and shutdown hours that are not subject to any emission limit according to the permit condition or source specific rule; (2) CEMS maintenance, repair, or audit for up to 30 hours for each calendar quarter, and; (3) a unit Breakdown that meets all Breakdown provisions of Rule 430 and is deemed as a valid Breakdown when the emission limit is inapplicable. Rule 218.1 provides up to 40 hours per month for calibration, maintenance, repair, or audit. The proposed 30 hours for each calendar quarter is equivalent to the number of hours exempted under Rule 218.1. A daily calibration hour would be a valid maintenance hour under the proposal for the hourly emission average method.

In Rule 218.1 a CEMS recertification would be required if the annual availability percentage falls below 95 percent. A CEMS data availability threshold is a critical safeguard for CEMS performance in complying with concentration limits in a command and control regulatory structure. Although Rule 2012 does not define a data availability threshold the rule does require the penalizing Missing Data Procedures be applied to mass emission determinations. A lower CEMS data availability would entail a penalty of reporting an overestimated mass emission according to these procedures, encouraging the owner or operator of the CEMS to maintain a high CEMS data availability.

Rule 218.1 specifies a 95% data availability threshold on an annual basis. On this basis, it is proposed to maintain the 95 percent data availability threshold, on a calendar quarter basis. If CEMS data availability of any analyzer falls below this 95 percent threshold for one calendar quarter or two consecutive calendar quarters, a Relatively Accuracy Test Audit (RATA), or temporary alternative monitoring and CEMS recertification would be required. It is also proposed that the QA/QC plan would need to be revised whenever the data availability falls below 95 percent. Under PR 218.3, the CEMS data availability is determined and assessed for meeting the threshold on a calendar quarter basis, instead of a block annual or rolling annual basis under Rule 218.1 or Rule 2012. This proposed rule requirements will encourage the owner or operator of the CEMS to evaluate the system more frequently and take corrective action promptly for any CEMS deviation. Moreover, the CEMS data availability within a quarter would not be impacted by a poor CEMS performance with low data availability of any previous quarter.

CEMS Out-of-Control Period– Paragraph (i)(6)

A CEMS out-of-control period occurs when the owner or operator of the CEMS fails to meet any QA/QC test standard or fails to conduct the test as scheduled. The required QA/QC tests, including the test frequency and standards, are specified in PR 218.3 subdivision (g). The CEMS out-of-control period begins with the hour of completion of the failed test, or the hour when it becomes overdue, and ends with the hour of completion of a passing test. For a publicly owned sewage-water-landfill facility, as explained in Chapter 2 for Part 60 option under PR 218.2 (f), the CEMS out-of-control period will continue to be determined by Part 60 Appendix F if the QA/QC test fails based on a calibration error test.

CEMS data generated during the CEMS out-of-control period are not quality assured data, and thus deemed invalid data. This data cannot be utilized in any compliance demonstration or subsequent emission calculation. In addition, the hour(s) during the CEMS out-of-control period would be considered unavailable. As a result, the CEMS data availability would be adversely impacted, unless the unit is not operating or generating any emissions during the entire CEMS out-of-control period.

Alternative Data Acquisition – Paragraph (i)(7)

Various options of alternative data acquisition have been identified that can be utilized when the certified CEMS does not provide valid data. These options minimize data loss or an impact on the CEMS data availability. While Rule 218.1 does not provide no options of any alternative data acquisition options, Rule 2012 Chapter 2 (2005 amendment) and some other rules (e.g., previous revision of Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (1991 amendment)) have provided several data acquisition options. These options include:

- Load or process curves that the owner or operator of the CEMS developed and approved by the Executive Officer;
- Collecting twelve South Coast AQMD Method 7.1 samples over a 1-hour period;
- South Coast AQMD Method 100.1 -Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling; or
- A certified standby CEMS

Based on discussions with stakeholders and follow-up internal discussions, two options are proposed for alternative data acquisition during the CEMS out-of-control period, (1) the South Coast AQMD Method 100.1 and (2) a certified standby CEMS. Other options noted above were never utilized and are deemed impractical, and thus are not recommended for PR 218.2/218.3.

In addition to the proposed two options, the owner or operator of the CEMS will be provided the opportunity to recommend a different alternative data acquisition method for the Executive Officer's approval. This approval would be based on the method deemed equivalent to the South Coast AQMD certified CEMS on relative accuracy, reliability, reproducibility, and data dandling.

Data generated by the alternative data acquisition methods listed in PR 218.3 or a method approved by the Executive Officer as specified in PR 218.3, would be considered quality assured data, provided all applicable requirements are also met. They are valid data for compliance demonstration or any subsequent emission calculation. The hour(s) being covered should be considered available with regards to CEMS data availability and could be used to maintain data availability of the primary CEMS.

Automatic Calibration Data – Paragraph (i)(8)
Requirements under paragraph (i)(8) for automatic calibration data have not been changed from the existing requirements under Rule 218.1 paragraph (d)(3). If automatic adjustments to the monitor settings are made, the owner or operator shall conduct the calibration tests in a way that the magnitude of the adjustments can be determined and recorded.

F-Factors – Paragraph (i)(9)
Requirements under paragraph (i)(9) for F-Factors have not been changed from the existing requirements under Rule 218.1 paragraph (d)(4). The owner or operator of the CEMS shall use in the CEMS calculations the F-factors listed in 40 CFR Part 60, Appendix A, Method 19, Table 19-2, as applicable. Alternatively, the owner or operator of the CEMS may submit a plan for Executive Officer's approval to develop F-factors for fuels not listed in Method 19, Table 19-2.

PR 218.3 (j) - SCEMS REQUIREMENTS

Requirements for SCEMS – Paragraph (j)(1)
SCEMS is an existing provision in Rules 218 and 218.1. A SCEMS is a continuous emission monitoring system that is different from a CEMS only on response time and data acquisition frequency, that is:

- Data acquisition for SCEMS is required every 15 minutes, while it is required every minute for CEMS; and
- Response time for SCEMS must not exceed 15 minutes, while it is limited to 1.5 minutes for CEMS CO analyzers and 5 minutes for other CEMS analyzers or monitors.

Response time is defined as the time interval from a step change in the air pollutant or gas diluent concentration to the time when 95 percent of the corresponding final value is reached as displayed on the CEMS data recorder or acquisition system. The response time is determined by introducing a certified gas mixture into the CEMS upstream of the sampling interface and as close to the probe inlet as practicable. A demonstration of response time for each unit is made during certification testing.

SCEMS operating in the South Coast AQMD, not including time-shared CEMS, typically include such technologies as gas chromatography (GC) analysis for sulfur compound composition, F-Factors and higher heating value (HHV). There is no preferable CEMS technology commercially available for these types of measurements. On this basis, certification for a SCEMS would be granted pursuant to PR 218.2 clause (f)(12)(A)(i). Certification is contingent on the commercial availability of SCEMS instrumentation capable of accurately and precisely measuring the

particular air contaminant concentration or other parameters used to calculate the emission concentration.

Due to the difference in data acquisition frequency for SCEMS as compared to CEMS, a 15-minute data acquisition frequency will be utilized for an SCEMS, instead of a one-minute data acquisition frequency when calculating spiking data percentage pursuant to PR 218.3 subparagraph (i)(2)(C).

PR 218.3 paragraph (j)(1) clarifies pre-certification, certification, quality assurance and data handling requirements. This paragraph also identifies the different requirements for a SCEMS as compared to a regular CEMS.

Time-shared CEMS – Paragraph (j)(2)
Time-shared CEMS is categorized as a type of SCEMS. A time-shared CEMS is a regular CEMS in which the analyzer, and possibly the associated sample conditioning system, is used to measure emissions from more than one unit (emission source). PR 218.2 clause (f)(12)(A)(ii) provides criteria for certifying a time-shared CEMS. This requirement defines that a time-shared CEMS would be allowed when the units to be monitored by the time-shared CEMS are:

- Physically close to one another, and the proposed time-shared CEMS is approximately equidistant from all monitored units;
- Similarly sized and configured, and their gaseous emissions are of approximately the same compositions and concentrations; and
- Subject to a similar concentration limit.

Similar to an SCEMS, a time-shared CEMS would provide at least one valid data point for each monitored source per 15-minute sampling period. All performance tests would be conducted in the time-shared mode at all times. That is, the tests would need to accurately reflect the emission information associated with this CEMS monitored sources, just as if there were individually dedicated CEMS providing the same emission information.

PR 218.3 paragraph (j)(2) provides additional requirements on the measurements, with no changes from the time-sharing requirements specified in Rule 218.1 subdivision (e).

PR 218.3 (k) - MOISTURE CORRECTION
Except for a clarification, PR 218.3 subdivision (k) for moisture correction provides the same requirements as specified in Rule 218.1 subparagraph (b)(4)(F). If a moisture correction in reporting flow and concentration is required, the owner or operator of a CEMS shall measure and monitor moisture in the stack gas used for emission data calculations in accordance with the South Coast AQMD Technical Guidance Document R-001(TGD-R-001). The Executive Officer's approval is required for an alternative method.

PR 218.3 (l) - EXEMPTION
PR 218.3 subdivision (l) is identical with PR 218.2 subdivision (k) for the provision of exemption. A detailed discussion is provided under the discussion for PR 218.2 subdivision (k).

CHAPTER 4: PROPOSED AMENDED RULES 218

PROPOSED AMENDED RULE REQUIREMENTS

PAR 218

Non-RECLAIM CEMS will transition to PR 218.2 and 218.3 according to the implementation schedule specified under PR 218.2 and 218.3 subdivision (d). Prior to the transition, non-RECLAIM CEMS will continue to be subject to Rules 218 and 218.1. It is proposed to incorporate a phase out provision paragraph (b)(3) under Rule 218 as follows:

(3) *The owner or operator of any CEMS subject to Rules 218 and 218.1 shall continue to comply with the requirements specified in these rules until the date specified in Rule 218.2 (d)(2) or Rule 218.3 (d)(2).*

CHAPTER 5: IMPACT ASSESSMENT

INTRODUCTION

PR 218.2 and 218.3, and PAR 218 are applicable to owners or operators of CEMS for units operated within about 80 RECLAIM facilities and 120 non-RECLAIM facilities. Those units include refinery FCCU, refinery tail gas unit, kiln or calciner, industrial boilers and heaters, internal combustion engine, gas turbines, furnace, oven, dryer, heater, incinerator, and any solid, liquid or gaseous fueled equipment required by source-specific rules for continuous emission monitoring.

EMISSION REDUCTIONS

PR 218.2 and 218.3, and PAR 218 are administrative rules and provide technical guidelines for installation and operation of CEMS required by the South Coast AQMD rules or permit conditions. PR 218.2, 218.3, and PAR 218 do not directly regulate sources for emissions control, therefore there is not emission reductions entailed by this rule development.

COST-EFFECTIVENESS

While a source-specific rule determines when a CEMS would be required to for emission monitoring, PR 218.2 and 218.3, and PAR 218 provide administrative and technical guidelines for how to properly operate the CEMS. The cost-effectiveness of operating any CEMS is included in the related source-specific rule development.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062. If the project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2021. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

SOCIOECONOMIC IMPACT ASSESSMENT

California Health & Safety Code §40440.8 requires a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emission limitations. This assessment shall include affected industries, range of probable costs, cost effectiveness of control alternatives, and emission reduction potential. The Proposed Rule 218 Series (amendments and new rules) which included Proposed Amended Rule 218 (PAR 218) - Continuous Emission Monitoring, Proposed Rule 218.2 (PR 218.2) - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 (PR 218.3) - Continuous Emission Monitoring System: Performance Specification (here in Rule 218 Series) do not impact air quality or emission limitations. As such, a socioeconomic assessment is not statutorily required here. Nevertheless, the staff has prepared a brief potential cost and regional economic impacts assessment for Rule 218 Series.

Under the proposed rules and amendments, the affected facilities would be required to purchase data acquisition and handling systems (DAHS) software that controls the CEMS equipment.

Affected Facilities and Industries

For the purpose of the cost impact analysis, staff used the audited data from a 2017 RECLAIM audit and the South Coast AQMD's database of permit applications to determine the universe of active and existing CEMS. The universe of affected facilities comprised of a wide range of industries with a large variability in the number of devices per facility. The universe of the affected facilities includes 47 different North American Industry Classification System (NAICS) codes as shown in Table 5-1 below.

Table 5-1: Number of Affected CEMS Devices by Industry

2-, 3-, or 4-Digit NAICS Codes	Industry Description	# of CEMS Devices
324	Petroleum and coal products manufacturing	274
2211	Electric power generation, transmission, and distribution	164
92	State and local government	40
2213	Water, sewage, and other systems	38
562	Waste management and remediation services	25
61	Educational services; private	20
42	Wholesale trade	18
486	Pipeline transportation	17
5614, 5616, 5619	Business support services; Investigation and security services; Other support services	16
622	Hospitals; private	13
3314	Nonferrous metal (except aluminum) production and processing	13
3121	Beverage manufacturing	12
211	Oil and gas extraction	11
3251	Basic chemical manufacturing	11
3221	Pulp, paper, and paperboard mills	8
5416	Management, scientific, and technical consulting services	8
487, 488	Scenic and sightseeing transportation and support activities for transportation	8
213	Support activities for mining	6
3115	Dairy product manufacturing	4
3254	Pharmaceutical and medicine manufacturing	4
3273	Cement and concrete product manufacturing	4
3329	Other fabricated metal product manufacturing	4
2212	Natural gas distribution	3
3274, 3279	Lime, gypsum and other nonmetallic mineral product manufacturing	3
6214, 6215, 6219	Outpatient, laboratory, and other ambulatory care services	3
7111, 7113, 7114	Performing arts companies; Promoters of events, and agents and managers	3
3116	Animal slaughtering and processing	2
3259	Other chemical product and preparation manufacturing	2
3272	Glass and glass product manufacturing	2

3311	Iron and steel mills and ferroalloy manufacturing	2
44-45	Retail trade	2
523, 525	Securities, commodity contracts, fund, trusts, and other financial investments and vehicles and related activities	2
8131-8133	Religious organizations; Grantmaking and giving services, and social advocacy organizations	2
492	Couriers and messengers	1
531	Real estate	1
721	Accommodation	1
3111	Animal food manufacturing	1
3114	Fruit and vegetable preserving and specialty food manufacturing	1
3119	Other food manufacturing	1
3222	Converted paper product manufacturing	1
3315	Foundries	1
3363	Motor vehicle parts manufacturing	1
5415	Computer systems design and related services	1
5611, 5612	Office administrative services; Facilities support services	1
8134, 8139	Civic, social, professional, and similar organizations	1
Total		**756**

As presented in the Table 5-1, a total of 756 CEMS are potentially affected by the Rule 218 Series. The 2017 audit dataset found 500 CEMS devices in the RECLAIM universe. In addition, 256 non-RECLAIM CEMS devices were identified from South Coast AQMD's database of permit applications, but this dataset may over-represent the active devices because equipment may not have been installed or may not be currently in use. The petroleum refineries industry (NAICS 324110) has the highest number of devices by industry with an estimated 274 active CEMS devices across 10 refinery facilities. In the petroleum refineries category, the average number of CEMS devices per facility exceeds 25, and the maximum for one refinery was 47 devices. The distribution of devices and facilities by county is provided in Table 5-2 below.

Table 5-2: Distribution of Rule 218 Series Potentially Affected Devices and Facilities, by County

County	# of CEMS Devices	# of Facilities
Los Angeles	569	131
Orange	62	21
Riverside	59	23
San Bernardino	66	30
Total	**756**	**205**

Small Businesses

South Coast AQMD defines a "small business" in Rule 102 as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. South Coast AQMD also

defines “small business” for the purpose of qualifying for access to services from the South Coast AQMD’s Small Business Assistance Office as a business with an annual receipt of $5 million or less, or with 100 or fewer employees.

U.S. Small Business Administration (SBA) definitions of small businesses vary by six-digit NAICS code, as shown in Table 3.[3] Staff has identified 47 different industries impacts by the Rule 218 Series and applied the criteria to determine which of the affected facilities meet the SBA criteria for small business.

In addition to South Coast AQMD’s and SBA's definitions of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 also provides a definition of a small business. The CAAA classifies a business as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) emits less than 10 tons per year of any single pollutant and less than 20 tons per year of all pollutants, and (3) is a small business as defined under the federal Small Business Act (15 U.S.C. Sec. 631, et seq.).

Revenue and employee data from the Dun and Bradstreet Enterprise Database was available for most of the Rule 218 Series potentially affected facilities. The number of facilities potentially affected by the Rule 218 Series that are classified as small businesses and classification definition are listed in Table 5-3 below:

Table 5-3: Rule 218 Series Potentially Affected Facilities Small Business Tabulation

Small Business Definition	# Small Businesses
South Coast AQMD (Rule 102)	57 out of 205
South Coast AQMD (Small Business Assistance Office)	118 out of 205
U.S. Small Business Administration (SBA)	129 out of 205
1990 Clean Air Act Amendments (CAAA)	118 out of 205

Compliance Costs

According to one refinery representative, the maximum one-time cost of DAHS software upgrade is estimated at $1 million per refinery, which is approximately $21,276 per software upgrade, per device. Staff then used this per unit upgrade cost to estimate the total one-time cost of the other nine petroleum refineries. In total, one-time cost of DAHS software upgrade for 252 devices for the 10 affected refineries is estimated at $5.36 million.[4]

Staff also estimated the DAHS software upgrade costs for non-refinery facilities, which generally have a smaller number of devices per facility. According to several vendors of CEMS equipment

[3] The latest SBA definition of small businesses by industry can be found at the following website: http://www.sba.gov/content/table-small-business-size-standards.

[4] 22 non-RECLAIM CEMS devices at petroleum refineries are not counted in this figure.

and software, the cost of a DAHS software upgrade can range between $30,000 and $100,000 per device. Staff used an average figure of $65,000 per device for the cost estimate of non-refinery devices. The total one-time cost for DAHS upgrades for the 504 non-refinery CEMS is estimated at $32.76 million. The DAHS software upgrades are expected to last a minimum of 25 years (the expected life of CEMS equipment), and periodic software updates are assumed to have no additional cost.

The total one-time cost of the Rule 218 series proposed amendments and new rules is estimated at $38.1 million (present worth). The annualized cost of the proposed rules and amendments in the 218 Series are expected to be from $1.5 to $2.2 million annually between 2024 and 2049, respectively.

Table 5-4: Rule 218 Series Total and Annualized Costs, Refinery and Non-Refinery

Industry description	Average Annual Costs (2024-2049)	
	1% Discount Rate	4% Discount Rate
Petroleum Refineries	$260,000	$373,000
Non-Refinery	$1,239,000	$1,779,000
Total	**$1,498,000**	**$2,152,000**

Regional Macroeconomic Impacts

The REMI model (PI+ v2.4.1) was used to assess the total socioeconomic impacts of the regulatory change from the Rule 218 Series.[5] The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.[6]

The assessment herein is performed relative to a baseline ("business as usual") where the Rule 218 Series would not be adopted. The baseline of this model has been calibrated with the latest data, made available in August 2020, which reflects the recent regional impacts on the local economy as a result of COVID-19. Adoption of the Rule 218 Series would create a regulatory scenario under which the potentially affected facilities would incur average annual compliance costs totaling $1.5 to $2.2 million for low- and high-rate scenarios respectively. Direct effects of proposed

[5] Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (160-sector model). Version 2.4.1, 2020.

[6] Within each county, producers are made up of 156 private non-farm industries and sectors, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at http://www.remi.com/products/pi.)

rules/amendments must be estimated and used as inputs into the REMI PI+ model in order for the model to assess secondary and induced impacts for all sectors in the four-county economy on an annual basis and across a user-defined horizon (2024 - 2049). Direct effects of the Rule 218 Series include additional costs to the potentially affected facilities and additional sales by local vendors of equipment, devices, or services supplying the necessary goods/services to help the potentially affected facilities meet the proposed requirements of Rule 218.

The proposed rules and amendments of the 218 Series are expected to result in 44 to 68 jobs foregone on average, annually, between 2024 and 2049. The compliance costs that are incurred in 2024 are one-time costs that were annualized over 25 years for the expected life of the CEMS equipment. The jobs foregone represent less than 0.001% of the regional baseline jobs, and the impact on competitiveness (such as relative delivered price and relative cost of production) are expected to be minimal. The majority of the jobs foregone are in the sectors of manufacturing (NAICS 31-33), construction (NAICS 23), and retail trade (NAICS 44-45).

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

California Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with section 40727, 40727.2 requires a written analysis comparing the proposed amended rule with existing regulations, if the rule meets certain requirements. The following provides the draft findings.

Necessity: A need exists to propose Rules 218.2 and 218.3 and amend Rule 218 to provide administrative and technical specifications to continuous emission monitoring systems.

Authority: The South Coast AQMD obtains its authority to adopt, amend, or repeal rules and regulations from California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 41508, and 41700.

Clarity: PR 218.2 and 218.3, and PAR 218 have been written or displayed so that their meaning can be easily understood by the persons affected by the rule.

Consistency: PR 218.2 and 218.3, and PAR 218 are in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or federal regulations.

Non-Duplication: PR 218.2 and 218.3, and PAR 218 do not impose the same requirement as any existing state or federal regulation and is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference: In amending this rule, the South Coast AQMD hereby implements, interprets, or makes specific reference to the following statues: Health and Safety Code sections 39002, 40001, 40702, 40440(a), and 40725 through 40728.5.

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option that would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. PR 218.2 and 218.3, and PAR 218 are not Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies; therefore, this provision is not applicable.

COMPARATIVE ANALYSIS

Health & Safety Code section 40727.2(g) for comparative analysis is applicable when the proposed amended rules or regulations impose, or have the potential to impose, a new emissions limit or standard, or increased monitoring, recordkeeping, or reporting requirements. In this case, a comparative analysis is not required because the amendments do not themselves impose such requirements but are only triggered by other source-specific rules that would impose these requirements.

CHAPTER 6: APPENDICES

APPENDIX A: AN OVERVIEW COMPARING RULE 218 AND PROPOSED RULE 218.2 REQUIREMENTS

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
Purpose	None	(a)	Same purpose as for Rule 218, although it is not specified in Rule 218
Applicability	(b)	(b)	PR 218.2 retains the concept of the applicability under Rule 218 and provides further clarification
Definitions	(a)	(c)	The following new definitions added to PR 218.2: • ACEMS • CALIBRATION ERROR TEST • CEMS FAILURE • CEMS FINAL CERTIFICATION LETTER • CEMS MODIFICATION • RECLAIM • RECLAIM FACILITY • FORMER RECLAIM FACILITY • UNIT Other changes: • Removed a list of existing definitions that are no longer used in Rule 218.2 or have been integrated in the rule language • Revised a list of existing definitions for clarity
Implementation schedule	None	(d)	This new subdivision in PR 218.2 defines the timeline to transition facilities from complying with Rules 218 and 218.1 or Rule 2012 to PR 218.2 and 218.3
Monitoring Requirements			
Continuous measurement	None	(e)(1)	Same concept as Rule 218, although it is not clearly specified in Rule 218
CEMS failure (for up to 96 hours)	(f)(3)(B)	(e)(2)	Revision • Allowing an additional 96 hours if the emission source is not operating • No longer requiring an interim variance for the additional hours
CEMS shutdown at a unit long term shutdown	None	(e)(3)	New provisions

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
			• Conditionally allowing CEMS shutdown at a unit shutdown that lasts for a minimum 168 consecutive hours
Demonstrating unit non-operation	None	(e)(4)	New provisions • Options to demonstrate unit non-operation • Referenced by (e)(2) and (e)(3)
Certification Requirements			
Application and approval requirements	(c)(1)(A)	(f)(1) (f)(2) (f)(3) (f)(4) (f)(5) (f)(6) (f)(7)	• No change in concept with Rule 218 application process - (f)(2) • Provided an application process for CEMS modification required within 30 days due to CEMS failure – (f)(3) • Reorganized the rule language for clarity ✓ Establishing the "roadmap" - (f)(2) and (f)(3) ✓ Providing details - (f)(4) through (f)(7)
Alternative process for modification of CEMS Component Listed in Guidance Document R-002	None	(f)(8)	• Alternative process for a CEMS modification on a component that is: ✓ Not identified on the CEMS final certification letter ✓ Listed on the South Coast AQMD Technical Guidance Document R-002 • Incorporated current practices into the rule
If an alternative CEMS recertification submitted pursuant to subparagraph PR218.2 (f)(7) is disapproved	None	(f)(9)	
Alternative process for modification of CEMS Component Listed in Quality Assurance/Quality Control Plan	None	(f)(10)	• Alternative process for a CEMS modification on a component that is: ✓ Not identified on the CEMS final certification letter ✓ Not listed in the South Coast AQMD Technical Guidance Document R-002 ✓ Listed in the Quality Assurance/Quality Control Plan • Incorporated current practices into the rule
Emission Data During CEMS	None	(f)(11)	New provision

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
Certification or Recertification			• Provisionally validating the data recorded during the certification or recertification process
Operation of CEMS During Certification Testing	(c)(3)	(f)(12)	No change
SCEMS and ACEMS Certification and Recertification	(c)(2)	(f)(13)	• Clarified the criteria for certifying a SCEMS • Added the criteria for certifying a time-shared CEMS (a type of SCEMS) and an ACEMS • Moved the specification for different data acquisition and averaging interval to PR 218.3 (j)
Requirements for Existing CEMS and SCEMS			
Requirements for existing CEMS and SCEMS	(d)	None	Deleted provisions • Under Rule 218, a CEMS or SCEMS is considered as an existing CEMS or SCEMS if its certification application for initial approval was submitted before May 14, 1999, otherwise it is a new CEMS or SCEMS • PR 218.2 does not differentiate between "new" or "existing" CEMS (or SCEMS) by application date for the requirements
Quality Assurance/Quality Control (QA/QC) Plan			
What to include for a QA/QC plan	(a)(12)	(g)(1)	• No change to the approach • Rule language revised for clarity • Added the reference "Guidelines for Continuous Emission Monitoring System Quality Assurance and Quality Control Plan"
Submittal timeline for a new QA/QC plan	(c)(4)(A)	(g)(2)	No change
Submittal timeline for a revised QA/QC plan	None	(g)(3)	New provision • Submit required revision for approval within 30 days
Alternative quality assurance practices	(c)(4)(B)	(g)(4)	No change

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
Recordkeeping Requirements			
Records for CEMS data measured and calculated	(e)(2)	(h)(1)	• No change to the approach • Rule language revised for clarity
Records for the specified files	(e)(2)	(h)(2)	
The approach to maintain the records	(e)(1)	(h)(3)	
Reporting Requirements			
Semi-annual emission summary	(f)(1)	(i)(1)	• No change to the approach • Rule language revised for clarity ✓ Reorganized the rule structure for clarification ✓ Specified the reporting period ✓ Moved the rule language related to recordkeeping to PR 218.2 subdivision (h)
Excess emission	(f)(2)	(i)(2)	• No change to the approach • Minor word changes for clarity
CEMS non-operation due to maintenance or damage	(f)(3)	(i)(3)	• No change to the approach • Added specification for the required information for the report
Scheduled CEMS shutdown	None	(i)(4)	New provision • Contingent on PR 218.2 (e)(3) which allows a CEMS shutdown during a scheduled unit shutdown that lasts for a minimum 168 consecutive hours • Requires the owner or operator of the CEMS to notify the Executive Officer and submit a written report for the incident
Relative Accuracy Test Audit (RATA)	None	(i)(5)	New provision • Requires submitting the RATA report within 60 days upon completion of the test • Aligns with Rule 2012 requirement
Posting CEMS Certification			
Posting of written approval of CEMS certification	(g)	(j)	No change

Requirements	**Rule 218**	**PR 218.2**	**Changes under PR 218.2 as compared with Rule 218**
Exemption	None	(k)	Implemented in practice

APPENDIX B: AN OVERVIEW COMPARING RULE 218.1 AND PROPOSED RULE 218.3 REQUIREMENTS

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
Purpose	None	(a)	• Same purpose as for Rule 218.1, although it is not specified in Rule 218.1
Applicability	None	(b)	• The applicability provision in Rule 218 is intended to cover Rule 218.1 • PR 218.3 retains the concept of the applicability under Rule 218 and provides further clarification
Definitions	(a)	(c)	The following new definitions added to PR 218.3: • ACEMS • CEMS MODIFICATION • FORMER RECLAIM FACILITY • LOWEST VENDOR GUARANTEED SPAN RANGE • MAINTENANCE • RECLAIM • RECLAIM FACILITY • SPAN RANGE • UPPER SPAN VALUE • UNIT Other changes: • Removed a list of existing definitions that are no longer used in Rule 218.3 or have been integrated in the rule language • Revised a list of existing definitions for clarity (equations from certain definitions are incorporated in Table 3)
Implementation schedule	None	(d)	This new subdivision in PR 218.3 defines the timeline to transition facilities from complying with Rules 218 and 218.1 or Rule 2012 to PR 218.2 and 218.3
Pre-certification requirements			
CEMS location	(b)(1)(A)	(e)(1)	Minor change on wording
Sampling location	(b)(1)(B)	(e)(2)	Restructured the rule language

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
Span Range	(b)(1)(C)	(e)(3)	New provisions • Approving a span range if (e)(3)(A) and (e)(3)(B) cannot be concurrently satisfied - (e)(3)(C) • Approving a span range with the upper span value at up to 10 ppm for a unit with emission limit less than 5 ppm - (e)(3)(D) • Exempting the top span range of multiple span range analyzer - (e)(3)(E)
Data Acquisition and Handling System (DAHS)	(b)(1)(E)	(e)(4)	New provisions • Recording all status code specified in Table 2 - (e)(4)(E) • Incorporating all applicable data handling requirements specified in subdivision (i) - (e)(4)(G)
Operational Period	(b)(1)(F)	(e)(5)	Minor change on wording
Certification requirements			
Seven-day calibration drift testing	(b)(2)(A)	(f)(1)	Clarification provided • Specified that calibration testing is performed for each span range for the same seven-day testing period • Added 2-hour grace period for each test • Specified calibration error test for stack flow monitors • Referenced calculation equation in Table 3
Analyzer enclosure	(b)(2)(B)	(f)(2)	Minor structure changes and revisions • Specified when corrective actions should be made
Relative accuracy test audit (RATA)	(b)(2)(C)	(f)(3)	New provisions • Specified the guidance document to determine an outlier - (f)(3)(B): • Added the reference to calculation equation (no change to the equation) - (f)(3)(C) • Provided equations to clarify how to calculate a de minimis value - (f)(3)(D) Revision • Standards for RA and *De Minimis* of a RATA - (f)(4)(E): ✓ Reduced NOx *de minimis* from 1.0 ppm to 0.5 ppm

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
			✓ Provided a standard for units with CO emission limit < 2.0 ppm ✓ Added *de minimis* 1.0% for CO2 (only for O2 previously) ✓ Allowed 20.0% for O2/CO2 when its measured value is low
Other checks required along with RATA	(b)(3)	(f)(4)	New provisions • Re-structured the rule language with no requirement changes: ✓ Response time (f)(4)(A) ✓ Cyclonic flow (f)(4)(E) ✓ Linearity error (f)(4)(F) • Added: ✓ NOx converter efficiency (f)(4)(B) ✓ Sampling system bias check (f)(4)(C) (Both tests are conducted in practice and included in certification guidance document) • Relocated technical details to Attachment B for: ✓ Concentration stratification (f)(4)(D) • Removed ✓ Interference check 218.1 (b)(3)(A) (Not conducted in practice) ✓ Calibration error 218.1 (b)(3)(B) (Already required for 7-day drift and ongoing QAQC)
Alternative Emission Monitoring System (ACEMS)	None	(f)(5)	This is a new provision • Not specified in Rules 218 and 218.1 • Referencing the ACEMS specification under Rule 2012
Laboratory approval program	Part of 218 (c)(1)(A)	(f)(6)	No change
Quality Assurance Testing Requirements			
Calibration Error	(b)(4)(A)	(g)(1)	Revision • Revised previous language for test frequency in Rule 218.1 (b)(2)(A) “as close to 24-hour intervals as practicable” to “for every 24 hours with a 2-hour grace period” - (g)(1)(A)(i) New provisions

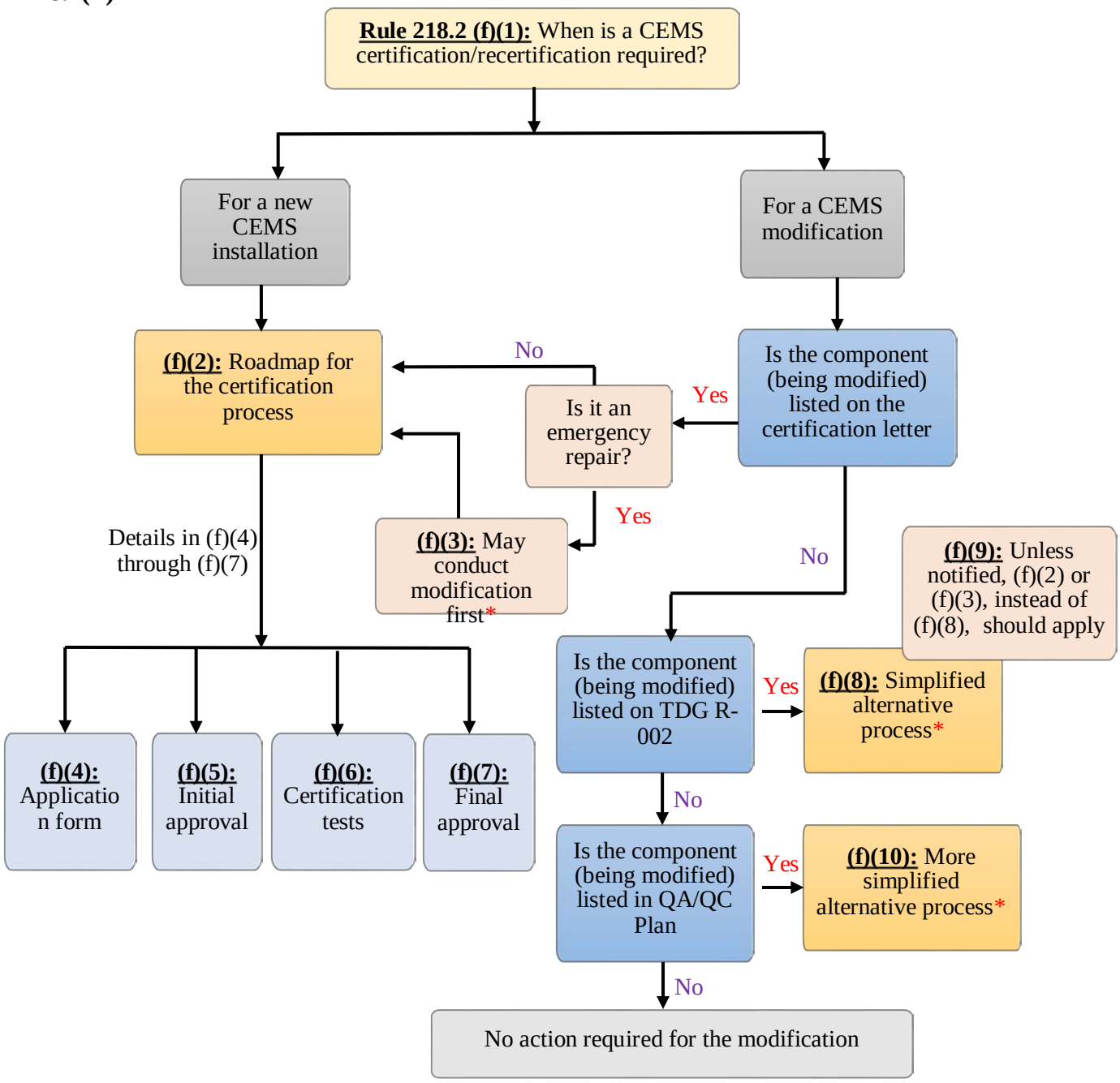
Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
			• Specification for stack flow monitor test requirements is based on Rule 2012 for RECLAIM CEMS - (g)(1)(A)(ii) • 4-hour grace period for unit restart after one or more unit non-operation days - (g)(1)(B) • CEMS data validation – (g)(1)(E) &(F)
Relative Accuracy Testing Audit (RATA)	(b)(4)(C)	(g)(2)	Revision • Revised previous language for test frequency in Rule 218.1 "once every 12 months, no later than the end of the calendar quarter in which the date of the original certification test was performed" to "within 12 months of the end of the month of the previous relative accuracy test" - (g)(2)(A) New provisions • Specification for stack flow monitor test requirements are based on Rule 2012 for RECLAIM CEMS - (g)(2)(D) • RATA at a unit restart (aligning with Rule 2012) – (g)(2)(D) • Paragraphs PR 218.3 (g)(2)(B) & (C) are referencing (f)(3) and (f)(4) for specifications where new provisions are included
Cylinder Gas Audit (CGA)	(b)(4)(D)	(g)(3)	New provisions • Allowing linearity error check to substitute cylinder gas audit • Exempting the test for a quarter with minimal operation
Daily check and periodic calibration for ACEMS	None	(g)(4)	This is a new provision • Not specified in Rules 218 and 218.1 or Rule 2012 • Addressed in the ACEMS QAQC plan and conducted in practice
Other checks for stack flow monitor	None	(g)(5)	This is a new provision • Not specified in Rules 218 and 218.1 • Based on the existing requirements in Rule 2012 for RECLAIM CEMS stack flow monitor
Maintenance for fuel flow meter (utilized for determining	None	(g)(6)	This is a new provision • Not specified in Rules 218 and 218.1 or Rule 2012 • Currently addressed in the CEMS QAQC plan and implemented in practice

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
stack flow with F factor)			
Calibration Gas and Zero Gas			
Calibration Gas	(d)(1)	(h)(1)	New provisions • Additional certification programs for calibration gas – (h)(1)(B) through (E) • Additional alternative options - (h)(1)(F)(i) & (ii)
Zero Gas	(d)(2)	(h)(2)	No change
Data handling			
Data points below 10 percent of the upper span value	(b)(1)(C)(v)	(i)(1)	No change
Data point above 95% of the upper span value	(b)(1)(C)(vi)	(i)(2)	New provisions • Spiking data recording (at 95% of the upper span value vs. being discarded as invalid data according to Rule 218.1 and Rule 2012) -(i)(2)(A) & (i)(2)(B)(ii) • The quarterly spiking data percentage calculation - (i)(2)(C) • Threshold for the quarterly spiking data percentage and subsequent requirement – (i)(2)(D) • Data validity for measurements below 10 percent or above 95 percent of the upper span value
Validity for (i)(1) and (i)(2) data	None	(i)(3)	New provision • Data validity for measurements below 10 percent or above 95 percent of the upper span value
Emission data averaging	None	(i)(4)	New provisions • Hourly average calculation for full and partial unit operating hours and during maintenance and quality assurance activities – (i)(4)(A) • Emissions averaging for a 15-minute interval – (i)(4)(B) • Emission averaging for intervals greater than one-hour – (i)(4)(C) • Pollutant concentration correction by diluent gas – (i)(4)(D)

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
			• Comparable data average requirements by landing rules or permits superseding requirements under this paragraph – (i)(4)(E)
CEMS data availability	(b)(4)(E)	(i)(5)	New provisions • Quarterly data availability calculation equation – (i)(5)(A) • Operating hours to exclude for the calculation – (i)(5)(B) • Data availability threshold and subsequent requirements – (i)(5)(C)
CEMS out-of-control period and alternative data acquisition	Part of (b)(4)(A)	(i)(6) & (i)(7)	New provisions • What is CEMS out-of-control period (not specified in Rules 218 and 218.1, but specified in Rule 2012) – (i)(6)(A) • Data generated during the CEMS Out-of-Control period – (i)(6)(B) • Data availability calculation during the CEMS Out-of-Control period – (i)(6)(C) • Options for alternative data acquisition for any period when the certified CEMS does not provide valid data – (i)(7) ✓ Existing options under Rule 2012 : South Coast AQMD Method 100.1 - (i)(7)(A) and A certified standby CEMS - (i)(7)(B) ✓ New option: Alternative data acquisition method upon Executive Officer approval -(i)(7)(C)
SCEMS Requirements			
SCEMS	(a)(16) & (b)(1)(E)	(j)(1)	PR 218.3 (j)(1) has combined the existing rule language and the actual implementation
Time-shared CEMS	(e)	(j)(2)	New provisions • Added (j)(2)(F) and (j)(2)(H) for clarification
Moisture Correction	(b)(4)(F)	(k)	No change to requirements with only clarifications • Minor rule structural change • Specified the South Coast AQMD guidance document
Exemption	None	(l)	Implemented in practice

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
Tables and Attachments			
Table 1:Reference Methods	Table 1	Table 1	No change
Table 2: DAHS Status Codes	None	Table 2	New table • Referenced by 218.3 (e)(4)(E)
Table 3: Equations	None	Table 3	New table • Previously included under various definitions in Rule 218.1
Table 4: t-Values	None	Table 4	New table • Included under definition (a)(9) in Rule 218.1
Attachment A: Supplemental and alternative CEMS performance requirements	Attachment A	Attachment A	No change
Attachment B: Concentration stratification and CEMS probe location	None	Attachment B	New attachment • Included under rule 218.1 (b)(3)(C) • Referenced by PR 218.3 (f)(4)(D)

APPENDIX C: FLOW CHART FOR RULE CEMS CERTIFICATION PROCESS UNDER 218.2(F)



- ✓ * Rule 218.2 (f)(3), (f)(8), and (f)(10) allow CEMS modification to be conducted prior to any interim approval
- ✓ Rule 218.2 (f)(11), (f)(12), and (f)(13) are addressing the other aspects of certification
  - o (f)(11): Data validity during the interim time prior to final approval
  - o (f)(12): CEMS operation requirement during certification tests
  - o (f)(13): The option and criteria of certifying a SCEMS or ACEMS, vs. a regular CEMS

APPENDIX D: RESPONSE TO PUBLIC COMMENTS

South Coast AQMD staff held a public workshop on January 6, 2021 via Zoom video conference. Comments were received during the public workshop, and five comment letters were received during the comment period. Based on stakeholder comments, the comment period was extended from January 20 to January 22, 2021.

The following responses summarize the key comments received during the public workshop:

Comment WS-1: The stakeholders need more time to review the proposed rules.

Response WS-1: Rule development has been a long, extensive, detail-oriented, and transparent process starting in 2018 with the first working group meeting in March 2019 and extending over 10 more meeting evaluating over 20 specific key topics in both proposed rules. Discussion with stakeholders have been ongoing in both meeting and comment letter format. There have been updated versions of the rule in response to stakeholder comments since the first version was released in June 2020. In addition, in order to assist stakeholders in understanding the impact to them from any new requirements, comparative tables were provided in November 2020. However, the public process is not over and staff is committed to continue to meet with stakeholders to clarify and explain the rule language.

Comment WS-2: There is a need to be definitive on the date of "exiting RECLAIM" for determining the implementation date for RECLAIM CEMS.

Response WS-2: PR 218.2 (d)(3) and PR 218.3 (d)(3) specify "exiting RECLAIM" as the point in time in which the NOx RECLAIM facility has been notified via a formal letter by the Executive Officer as a former RECLAIM facility.

Comment WS-3: The CEMS shutdown should also be allowed during a long-term unit shutdown that is not scheduled.

Response WS-3: Staff agrees with the commenter and PR 218.2 (e)(3) has been revised to allow CEMS shutdown during a long-term unit shutdown no matter if the unit shutdown is scheduled or unscheduled.

Comment WS-4: For a unit that is not in operation but its pilot light is on, would the provisions in PR 218.2(e) allowing CEMS shutdown be applicable?

Response WS-4: The provisions in PR 218.2 (e) allow CEMS shutdown provided that the owner or operator of the CEMS demonstrate that the unit is not operating and no emissions are generated. When the pilot light is on, fuel is being consumed and emissions are generated. Therefore, the provisions in PR 218.2(e) allowing CEMS shutdown would not be applicable. A compliance advisory issued to RECLAIM facilities on March 15, 2012 also emphasizes that emissions from pilot lights should not be omitted from CEMS measurements. If the monitored value is determined to be negligible due to a pilot light operation only through the Executive officer's evaluation on a

case by case basis, the Executive Office may note it on the certification letter.

Comment WS-5: For reporting CEMS failure under PR 218.2 (i)(3), staff should retain the wording in Rule 218, which is "notifying" (instead of "reporting" to) the Executive Officer with the required information, so that the requirement could be met with a phone notification.

Response WS-5: Staff has revised PR 218.2 (i)(3) and PR 218.2 (e)(2)(B) to incorporate the request for notifying the Executive Officer with the required information.

Comment WS-6: For the modification of CEMS components listed in QA/QC plan, a list of components that are subject to the alternative recertification process should be included in the rule.

Response WS-6: CEMS components identified in its QA/QC plan are, or can be, unique to each system and could have a potential impact on the CEMS performance. The current procedure is that staff works with the owner or operator on their list of CEMS components to be included in the QA/QC plan, upon which any future changes to that list could warrant a need for recertification. In order to streamline or codify existing practices, the proposed rules include alternative recertification process but it would be too speculative to determine in advance which component could be the cause for recertification. In addition, providing a specific list could have the opposite effect, which would be to over-prescribe the need for the recertification. Maintaining the existing case by case evaluation allows for flexibility to both staff and the CEMS owner who will be made aware of those potentially impacted components. In other words, during the Executive Officer's review for approval of the QA/QC plan, staff will be able to determine which, or any, components that will be exempted from the alternative recertification process for a future modification.

Comment WS-7: Staff should revise the data handling requirements to minimize emission over-estimation for an analyzer with distinctive multiple span ranges.

Response WS-7: Staff respectfully does not recommend changes to the proposed data handling requirements for CEMS with multiple span ranges for the following reasons. An analyzer with distinctive multiple span ranges typically have no more than two span ranges. The higher span range may have an upper span value up to 10 times of that of the lower span range. The concern is the large monitoring gap between 95 percent of the upper span value of the lower span range and 10 percent of the upper span value of the higher span range. Any data falling in this monitoring gap would be reported as the upper end value which is 10 percent of the upper span value of the higher span range. On this basis, the reported data would be overestimated. There would be no adverse impact in demonstrating compliance with a

concentration limit as the span ranges are certified to measure that limit. The impact would be when there is a need for a mass emission calculation (e.g., for excess emission determination) and a more accurate determination is desired. In this situation, staff recommends adding another span range to fill in the monitoring gap.

Comment WS-8: Staff should include special considerations on analyzer span range setting for rich burn engines. Selection of the analyzer range including the oxygen analyzer is challenging.

Response WS-8: For a rich burn engine with low oxygen (O_2) concentration in the exhaust, carbon dioxygen (CO_2) would be suggested as an alternative diluent gas for pollution collection. Further concerns on pollutant correction or emission fluctuation that pose challenges in meeting a source-specific rule required emission limit will be addressed in the source-specific rule. If an oxygen analyzer is selected as the diluent gas, PR 218.3 (e)(3)(F) allows a special span range to be assessed and approved by the Executive Officer. An oxygen analyzer measuring low level oxygen in the exhaust may take advantage of the de minimis standard (1.0%) to pass a relative accuracy test audit.

Comment WS-9: With regards to the proposed grace period for required testing at unit restart, staff should take into consideration that a unit restart may take several attempts. The proposed rule should define which attempt marks the unit restart.

Response WS-9: PR 218.3 (g)(1)(B) and PR 218.3 (g)(2)(D) have been revised to specify that the unit restart that establishes normal operation marks the unit restart.

Comment WS-10: The hours for conducting a spiking Relative Accuracy Test Audit (RATA) should be excluded from CEMS data availability calculation. When there are multiple pollutants monitored with a shared CEMS sampling system, spiking RATA for one pollutant may affect the data acquisition of the other pollutants.

Response WS-10: Excluding the hours for a spiking RATA from CEMS data availability is not necessary because the test would not have an adverse impact on emission monitoring for the pollutants with a shared CEMS sampling system. Spiking RATA is conducted to meet the RATA requirement for an analyzer with measured emissions under normal unit operation mostly falling below 10% of its upper span value. For example, it is common for sulfur monitoring at refineries when the lowest manufacturer's guaranteed analyzer span range cannot be lower to include data in the normal range. During a spiking RATA, a high concentration of calibration gas is injected into the sampling probe in order to bring the measured emission data to the normal range for the test. The injected gas is accurately gauged to a

percentage of total sample volume, typically 10 percent. As a result, all other pollutants are diluted by 10 percent. During a spiking RATA, actual emissions can be accurately calculated back by this dilution ratio for other affected pollutants. To aid in the enforceability of spiking RATA, staff could specify the emission determination for a spiking RATA period in the certification letter for any analyzer that potentially requires a spiking RATA.

Comment WS-11: A RATA should not be required when data availability drops below 95% within one quarter. Instead, such tests as the calibration or cylinder gas audit should be used instead of the RATA to demonstrate CEMS performance.

Response WS-11: When a CEMS is not able to provide valid data and thus result in low data availability, it is necessary to conduct a RATA to demonstrate CEMS performance integrity. Other tests, such as calibration or cylinder gas audit (CGA), or a QA/QC plan revision, are not able to provide this critical validation of CEMS performance. The CEMS would be more thoroughly evaluated by a RATA by requiring stack gases to be cleansed of interferents and moisture. During a RATA, the CEMS will also be required to adjust to changes in emission concentrations due to variability in process demands, which would be not be achieved by a calibration or CGA

Comment WS-12: The proposed rules should allow rental CEMS or rental analyzer to be utilized when the certified CEMS are not able to provide valid data.

Response WS-12: PR 218.3 (i) allows the use of a certified rental CEMS as a type of alternative data acquisition method. A revision was made to the proposed rules to allow alternative data acquisition for any period when the certified CEMS cannot provide valid data. Previously this alternative could only be applied due to a CEMS out-of-control period. With regards to utilizing a rental analyzer, a CEMS recertification as specified by PR 218.2(f) would be required because an analyzer is a component of CEMS, so integrating a rental analyzer to an existing CEMS essentially modifies the CEMS.

Comment Letter #2

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PAR 218.2 Section	Rule Language	Question/Comment	
(c)(7)	CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification to the CEMS sampling interface, analyzer, or data acquisition and handling system that has a potential for adversely affecting the ability of the CEMS to provide accurate, precise, and timely data representative of emissions for the unit being monitored.	Since items like the DAHS computer are listed on the certification letter, CEMTEK suggests that this definition is clarified to remove "that is identified on the CEMS final certification letter" from this definition. This would still require facilities to treat any changes that could have an adverse impact on the accuracy and/operation of the CEMS as a CEMS Modification and thus require recertification activities. While removing confusion around components listed in the CEMS final certification letter that do not impact the accuracy of the CEMS.	2-1
(e)(3)	If there is a scheduled shutdown for the unit for a minimum of 168 consecutive hours, as demonstrated pursuant to paragraph (e)(4), the owner or operator of the CEMS is not subject to the requirements of paragraph (e)(1) after zero emissions have been recorded for a minimum of 4 hours after the unit shutdown, provided that the owner or operator of the CEMS:	Does this also apply to unplanned/forced shutdowns that will result in the unit being offline for a minimum of 168 hours?	2-2

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PAR 218.2 Section	Rule Language	Question/Comment	
(f)(5)	The owner or operator of the CEMS shall receive an initial approval of the CEMS application from the Executive Officer prior to the CEMS installation or modification.	Based on the definition of a CEMS Modification, replacing items such as an analyzer or an integral analyzer component such as a NOx converter or correlation wheel with an onsite spare would require the submittal and approval of a CEMS Application prior to replacing the defective part. This would cause the owner or operator of the CEMS to incur unnecessary amounts of downtime. Is it the district's intention to include replacement of CEMS components with on site spares in this requirement?	2-3

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Comment Letter #2

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PAR 218.3 Section	Rule Language	Question/Comment	
(f)(1)(A)	A seven-day calibration drift test shall be comprised of a series of eight (8) calibration error tests during a seven-day period performed once each day with an interval of 24 hours plus a 2-hour grace period for each test, when the CEMS is in continuous operation.	The rule language does not address the unit operating status during this test. Does the unit need to be combusting fuel, but not necessarily at a particular load, when the calibration error tests are performed? Is the seven-day period referring to seven calendar days or seven operating days?	2-4
(f)(1)(C)(i)	2.5 percent of the upper span value for pollutant and diluent analyzers.	Item 14 on form ST-220 currently allows Non-RECLAIM CEMS to be certified and maintained in accordance with 40 CFR 60 Appendix B and 40 CFR 60 Appendix F respectively. Will this option still be allowed? If not, then the DAHS will need to be configured to apply different pass/fail criteria to the diluent analyzers for Rule 218.3 and other federally applicable rules. This will unnecessarily overcomplicate the DAHS as there could be periods where the diluent analyzer is out of control in respect to Rule 218.3 but in control with federal requirements.	2-5

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PAR 218.3 Section	Rule Language	Question/Comment	
(f)(2)(A)	…the owner or operator of the CEMS shall make corrective actions within 8 hours of receiving the audible alert.	For facility's that are not staffed 24/7, 8 hours may not be enough time for the alarm to be received, someone to be called out to site, and to evaluate the problem and perform corrective actions.	2-6
(i)(3)	If the owner or operator of a certified CEMS is meeting the quality assurance requirements as specified in subdivision (g), data recorded and reported pursuant to paragraphs (i)(1) and (i)(2) shall be valid data for quantification, and available for the purpose of determining CEMS data availability.	Is this intent of this statement to say that recorded values that fall above 95%, or below 10%, of the upper span value for a span range that are recorded during a QA test can be reported as recorded for the purpose of that test?	2-7

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PAR 218.3 Section	Rule Language	Question/Comment
(i)(4)(D)	Pollutant concentration correction by diluent gas shall be performed with the averaged value at the interval required for compliance demonstration.	Is the intent of this requirement that for an hourly average limit the average pollutant and diluent concentrations should be calculated for the hour and then the correction to a target diluent % should be done once using these hourly averages, as opposed to calculating a corrected value each minute and then averaging those calculated values?
(i)(5)(C)(i)(I)	Conduct a relative accuracy test audit within 45 days after the end of the calendar quarter with data availability below 95 percent, unless another relative accuracy test audit is scheduled for the same calendar quarter in compliance of any other rule or permit requirement	This seems overly punitive to the CEMS owner operator. There are components in a CEMS, that would cause downtime if they failed but would have no impact on the accuracy of the CEMS. **Example:** A NOx analyzer that is communicating to the PLC via hardwired 4-20 ma signals. If the analog output card failed, it would cause downtime, and if it took 5 days to get a replacement card delivered and installed it would trigger a RATA of the CEMS as this requirement is currently written. However, the component that failed only affected the ability of the analyzer to relay the data to the DAHS and did not affect the accuracy of the CEMS.

2-8

2-9

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PAR 218.3 Section	Rule Language	Question/Comment
(i)(6)(D)(ii)(IV)	The use of standby CEMS shall be limited to a total of 6 months for any unit(s) within a calendar year	As written, it is unclear as to whether the standby CEMS usage limit of 6 months is on a per unit or per facility basis. Please clarify.

2-10

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Response to Comment Letter #2

Response 2-1: CEMS Data Acquisition and Handling System (DAHS), including the DAHS computer, is a vital component. The Technical Guidance Document R-002 (TGD R-002) specifies the required certification tests for the computer hardware change. Noting "CEMS final certification letter" provides clarity and ensures upgrade has been approved. On this basis, removal of this term from the definition is not recommended.

Response 2-2: Please see the Response to Comment WS-3.

Response 2-3: It is not the rule's intent to incur unnecessary CEMS downtime due to such actions as the replacement of components with onsite spares. For a CEMS modification required within 30 days due to CEMS failure (e.g., emergency repair), PR 218.2(f)(3) provides a recertification process that allows the owner or operator of the CEMS to conduct a modification before receiving an initial approval. This time-period should be sufficient to replace such CEMS components.

Response 2-4: The seven-day calibration drift is conducted during a seven-day period, which is seven calendar days. While CEMS operation is required during this period, there is no requirement for unit operating status.

Response 2-5: PRs 218.2 and 218.3 no longer provide the option to allow the less stringent certification and ongoing QA/QC requirements of Part 60 Appendices B and F for CEMS certification and ongoing QA/QC requirements. However, PR 218.3(i)(6)(A) provides a special consideration for publicly owned sewage-water-landfill facilities due to their unique operation as essential public services and administrative constraints. This type of facilities can continue to reference Part 60 Appendix F in determining CEMS out-of-control period if the QA/QC test fails based on a calibration error test. Ultimately, by the compliance schedule, DAHS will need to be configured to incorporate some other data handling requirements as well. A socioeconomic impact analysis considering the cost for software upgrade will be included in the staff report.

Response 2-6: Please see Response to Comment 1-5.

Response 2-7: Data below 10 percent of the upper span value have been considered valid under both Rules 218.1 and 2012, and will continue to be considered valid under PR 218.3 (i)(3). Data above 95 percent of the upper span value (spiking data) have been considered invalid under Rule 2012 (not specified in Rule 218.1). PR 218.3 (i)(2) proposes to report a spiking data at the 95% of the upper span value. This incorporates a threshold to prevent frequent occurrence of data spiking over 95% of the upper span value. PR 218.3 (i)(3) specifies spiking data as valid for calculations leading to quantification for compliance purposes and for CEMS data availability. This is based on the

condition that all applicable quality assurance requirements are met for the CEMS. This provision is intended for data of all periods of CEMS measurements, not to be confused for data recorded during a quality assurance test as raised by the commenter.

Response 2-8: The commenter's interpretation of the intent of this requirement is correct.

Response 2-9: For your comment regarding the requirement when CEMS data availability drops below the threshold for one quarter, please see the Response to Comment WS-11. With regards to the quoted example, the data relay process from an analyzer to the DAHS for computation is a vital part of the CEMS. When data is not recorded due to the analog output card failure, the accuracy of the CEMS cannot be demonstrated. In fact, some CEMS analyzers are configured to have the capacity to store data for a limited time. At the interim time of fixing a failed analog out card, CEMS data from the analyzer would be available to be retrieved.

Response 2-10: The usage limit is on a per unit basis not for the entire facility.

Comment Letter #3 -
Los Angeles County Sanitation Districts

Proposed Rule 218.2

(c)(7) CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification to the CEMS sampling interface, analyzer, or data acquisition and handling system that has a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of emissions for the unit being monitored.

We would like to request that SCAQMD specify which modifications trigger recertification. Modification such as upgrading a computer will not affect CEMS' accuracy and should only require notification. 3-1

(d)(2)(C) The implementation date of a source-specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) as part of the implementation.

Would the lower of the span range due to a new emissions limit trigger the recertification? The changes of span range only require calibration and do not require a RATA. Therefore, it will not have any adverse effects on the CEMS' accuracy. 3-2

(e)(2)
(B) Submit a report pursuant to paragraph (i)(3), if the CEMS failure or shut down has occurred for more than 24 hours; and
Per the Friday afternoon meeting, SCAQMD stated that the initial notification could be done verbally and follow by a written report. Please clarify the time limit for the written report submittal. 3-3

(f)(5) (B) Executive Officer shall notify the applicant that the application is complete, in writing within 60 calendar days of receipt of an application for a new CEMS, or within 30 calendar days of receipt of an application for a modification to an existing CEMS.
(C) If the owner or operator of the CEMS receives notification from the Executive Officer that the application meets the requirements of subparagraph (f)(5)(A), the owner or operator of the CEMS may commence the CEMS installation or modification.

If we do not receive the initial approval or notification of completion within the specified time-limit, would the application deemed approved? 3-4

(f)(11)(B) If the Executive Officer disapproves the final CEMS certification or recertification, the valid emission data pursuant to subparagraph (f)(11)(A) shall be retroactively considered invalid data that shall not be utilized for compliance demonstration or considered as available for CEMS data availability calculation, until the hour of the next time completing all the required certification tests pursuant to paragraph (f)(6).

Currently, SCAQMD typically takes 60 days or longer to review/approve. Therefore, we believe that this requirement may cause invalid data problems and impact data availability. 3-5

(i)(2) Excess Emission Reporting The owner or operator of the CEMS shall report the concentration level and/or emission rate, as applicable, in excess of the emission limit specified in the applicable rule within 24 hours or the next business day after such occurrence that includes:

Similar to (e)(2)(B), we believe that this requirement will create a significant burden on our operations and would like SCAQMD to consider revising the language to specify that initial notification can be done verbally and follow by a written report. Furthermore, this requirement appears to overlap the Title V requirement where the 500-N form is required. 3-6

(i)(4) (4) Scheduled CEMS Shutdown Reporting In the event of a scheduled CEMS shutdown pursuant to paragraph (e)(3), the owner or operator of the CEMS shall submit:
(A) An initial notification, at least 96 hours prior to the scheduled CEMS shutdown, specifying the scheduled date and time for unit non-operation and CEMS shutdown;
(B) A written report, within 24 hours of CEMS shutdown that the unit is non-operational and there are no emissions during the period of unit shutdown pursuant to paragraph (e)(4); and
(C) A final notification, at least 96 hours prior to the scheduled CEMS restart, specifying the scheduled time for the CEMS restart and unit restart.

There appears to be a significant amount of additional notifications and reporting, which will require additional human resources and may create a burden on our workforce. Furthermore, will SCAQMD provide forms to assist facilities in complying? 3-7

Proposed Rule 218.3

(d) Implementation Schedule
(d)(2) (A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2;

Since the effective date is January 1, 2025, for all existing units, if an existing unit triggers recertification, then only one unit must meet all the new requirements, including DAHS. Does this mean that there will be two systems running for identical CEMS before January 1, 2025? Would a facility be required to recertify all CEMS when only one unit is subject to R218.3? We would like SCAQMD to consider January 1, 2025, to be an effective date for all existing essential public service units regardless of whether any new application is submitted between January 1, 2022, and January 1, 2025 3-8

(f)(3)(E)
The owner or operator of the CEMS shall meet the following relative accuracy or de minimis value (no more than):
(i) For pollutant concentrations, a relative accuracy of 20.0 percent of the mean value of the reference method, or the de minimis concentration as follows:

Pollutant	De minimis
NOx	0.5 ppm
SO_2	2.0 ppm
CO	2.0 ppm (or the rule or permitted concentration limit for the unit when it is lower than 2.0 ppm)
Reduced Sulfur Compounds	4.0 ppm

We would like SCAQMD to consider a tiered approach for NOx emissions, such as 1 ppm if the emission limit is 5 ppm or higher and at 0.5 ppm if the emission limit is 5 ppm or less. Although SCAQMD lowered the de minimis limit based on "most facility has lower emissions limit," a significant number of existing units still have higher limits (> 5 ppm). Revising the de minimis level to 1 ppm would also be consistent with the 40 CFR 60 App. F, which requires 20% of RA or 10% of emission limit when the measured NOx is 50% or less than the emission limit. 3-9

(i)(1)(C) The owner or operator of the CEMS shall:
(i) Flag any data point that is recorded and reported pursuant to clause (i)(2)(A) and Subparagraph (i)(2)(B)(ii) as above 95 percent of upper span value for CEMS status code; and
(ii) Calculate a spiking data percentage for each calendar quarter using the following equation: Spiking Data Percentage = F/T x 100% Where: F is the amount of flagged one-minute data points recorded pursuant to clause (i)(2)(C)(i) for the calendar quarter during unit operation, excluding CEMS out of control period and the period when the unit is not subject to any emission limit; and T is the total amount of one-minute data points recorded for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit.

We would like to confirm that this requirement is not applicable when a unit is not operating and on stand-by. 3-10

(i)(5)(C)
CEMS data availability threshold and subsequent requirements (i) When data availability of any analyzer falls below 95 percent for one calendar quarter, the owner or operator of the CEMS shall: (I) Conduct a relative accuracy test audit within 45 days after the end of the calendar quarter with data availability below 95 percent, unless another relative accuracy test audit is scheduled
for the same calendar quarter in compliance of any other rule or permit requirement; and

We believe that this requirement may not be suitable for a unit that operates on a limited basis because it may fall below 95%, especially for non-natural gas units. We request a 95% annual threshold rather than the proposed quarterly limit. 3-11

(i)(5)(C)(iii)
The Executive Officer may request the owner or operator of the CEMS to revise the QAQC plan whenever data availability of any analyzer falls below the 95 percent threshold.

Since the RATA would not improve data availability, we request SCAQMD allow a revision to the QAP as the first step when responding to data availability falling below the 95% threshold. 3-12

Response to Comment Letter #3

Response 3-1: Please see the Response to Comment 2-1.

Response 3-2: The CEMS analyzer span range setting is identified in the CEMS certification letter. The CEMS recertification applies if the analyzer span range setting is modified to demonstrate compliance with a new emissions limit required by a source-specific rule. This modification may not trigger a full set of certification tests. However, through the recertification process, the system will be evaluated and a revision to the certification letter will be issued to reflect the description of the CEMS.

Response 3-3: Staff agrees with the commenter. PR 218.2 (e)(2)(B) and PR 218.2 (i)(3) have been revised, specifying the requirement as a notification that is complied by calling 1-800-CUT-SMOG.

Response 3-4: The initial approval ensures that the application package is complete. It will be issued before the application is subject to further evaluation for a final approval. The owner or operator of the CEMS may contact staff at any time during the evaluation process regarding the application.

Response 3-5: PR 218.2 retains the existing CEMS certification process. In addition, PR 218.2 (f)(7) specifies that the owner or operator of the CEMS will be notified of a timeline for the final approval once the application package is deemed complete. The certification tests are required to be conducted by testing laboratories or firms approved through the South Coast AQMD Laboratory Approval Program. These testing laboratories or firms are highly qualified with a reputation of submitting certification test reports that are typically found to be approvable. On this basis, the commenter should be reasonably confident with the application timeline and the potential validity of the interim data.

Response 3-6: Staff agrees with the commenter. PR 218.2 (i)(2) has been revised to change the word “report” to “notify the Executive Officer by calling 1-800-CUT-SMOG”.

Response 3-7: As mentioned in the previous response, PR 218.2 (i)(2) has been revised to specify the initial and final notifications as “by calling 1-800-CUT-SMOG”. In addition, the period for the final notification has been shortened from 96 hours to 8 hours prior to the scheduled CEMS restart. The proposed rule specifies the required information is to be provided in a written report. To assist the owner or operator with their written report submittal, staff will work with the stakeholders in the development of streamlined reporting forms. This endeavor is planned as part of the PR 218.2 and 218.3 electronic reporting implementation Working Group meetings.

Response 3-8: Staff agrees with the commenter. PR 218.2 (d) and PR 218.2 (d) have been revised such that the owner or operator of a publicly owned sewage-water-landfill facility (defined in the rule) would be subject to PR 218.2 and PR 218.3 by January 1, 2025, or the implementation date of a source-specific rule for which the CEMS shall be certified or recertified, whichever is later.

Response 3-9: Staff agrees with the commenter. PR 218.3 (f)(3)(E) has been revised to allow the 1.0 ppm *de minimis* standard when the rule or permitted concentration limit for the unit is higher than 5.0 ppm.

Response 3-10: A unit non-operation period will not be counted in the spiking data percentage calculation. If there are any emissions during a unit's stand-by period, they are not expected to be in the spiking data percentage calculation either.

Response 3-11: Staff understands the concern for a unit that operates on a limited basis or unit combusting non-natural gas fuel is that emissions could spike more frequently and have revised the rule to provide relief from the spiking requirements when operating at low use. With regard to data availability from low use units, it should be noted that under PR 218.3 (i)(3), spiking data recorded pursuant to PR 218.3 (i)(2) will be considered valid data and, thus, considered available for the purpose of calculating CEMS data availability. In addition, the rule provides for units to exclude certain data such as when the unit is under maintenance or auditing. Therefore, for a unit that operates on a limited basis or unit combusting non-natural gas fuel, there should be no additional challenge on meeting the CEMS data availability requirements.

Response 3-12: Please see the Response to Comment WS-11

Comment Letter #4 -
Orange County Sanitation District

Proposed Rule 218.2 – December 2020 Draft

1. (d)(2) For a CEMS certified to comply with Rules 218 and 218.1, the owner or operator of the CEMS shall meet the requirements of this rule no later than:
   (A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3)

   This reads as "CEMS shall meet the requirements of this rule at the time of application submittal date which means it is possible that a facility would have to follow the 218.3 requirements (including DAHS and QAP updates) as early as 1/1/22 if you have to submit a recertification application on that date. At the 1/6/21 meeting AQMD clarified that the implementation date is 1/1/25 if no certification or recertification applications are submitted between 1/1/22 and 1/1/25. 4-1

   OC San has 8 identical CEMS units. If one unit requires a re-certification before 2025, it would be subject to different requirements than the rest of the units. We request one implementation date of 2025 for all CEMS units that are certified to 218 and 218.1.

2. (e)(2)(B) Submit a report pursuant to paragraph (i)(3), if the CEMS failure or shut down has occurred for more than 24 hours; and

   The current practice is to verbally notify AQMD (via 1-800-cut-smog) of any CEMS failures or shutdowns lasting more than 24 hours and then submit a written report with the semi-annual monitoring reports in accordance with Title V form 500-N. Is that the intent of this statement or, does a written report need to be submitted in lieu of the verbal notification? 4-2

3. (e)(3) If there is a scheduled shutdown for the unit for a minimum of 168 consecutive hours, as demonstrated pursuant to paragraph (e)(4), the owner or operator of the CEMS is not subject to the requirements of paragraph (e)(1) after zero emissions have been recorded for a minimum of 4 hours after the unit shutdown, provided that the owner or operator of the CEMS:

   Should be revised (delete scheduled?) to allow for unforeseen shutdown (e.g. engine failure) 4-3

4. (f) Certification Requirements

   General comment - Requirements in provision (f) should be streamlined; they are difficult to follow. 4-4

5. (f) (1) (B) Modified for any component that is either listed on the certification letter, Technical Guidance Document R-002, or Quality Assurance/Quality Control Plan such that it may adversely impact the accuracy and precision of the CEMS measurements

Non-RECLAIM facilities are not familiar with TGD R-002. This section should be consistent with the guidelines in Part 3 of ST-220 Form - APPLICATION FOR MODIFICATION (AND RECERTIFICATION) OF RECLAIM AND NON-RECLAIM CONTINUOUS EMISSIONS MONITORING SYSTEMS (CEMS) which contains the Matrices for QA requirements. One issue we have with these Matrices is that it is unclear which QA activity requires submittal of the recertification application. We also suggest limiting the list of components to those listed in these Matrices. 4-5

6. (f)(5) The owner or operator of the CEMS shall receive an initial approval of the CEMS application from the Executive Officer prior to the CEMS installation or modification.

   In addition to the comment provided for (f)(1)(B) above, we ask for streamlined process for replacement of components with identical components especially those we keep as spare parts onsite. We will incur more downtime if we need to wait for the approval of the CEMS application. 4-6

7. (f)(6)(C) If the unit is not operating at the time of completion of the CEMS installation, then the owner or operator of the CEMS shall conduct the certification tests of the CEMS within 90 days from the next start-up of the unit monitored by the CEMS in accordance with clause (f)(6)(B)(i) or (f)(6)(B)(ii).

   The clock should start once the unit resumes normal operation – e.g. startup after an engine overhaul there may be a break in period; there may be a multiple startup attempts. 4-7

8. (f)(6)(D)(ii) No later than 45 days of completing a certification test, the owner or operator of the CEMS shall submit the test report to the Executive Officer.

   The 45-day period is too short depending on the scope of testing. For consistency with other test reports, we request 60days. 4-8

9. (f)(8) Modification of CEMS Component Listed in Guidance Document R-002 For a CEMS modification on a component that is not identified on the CEMS final certification letter but is listed on the South Coast AQMD Technical Guidance Document R-002, the owner or operator of the CEMS shall either meet the requirements specified in paragraph (f)(2), or (f)(3) or the alternative CEMS certification requirements. The owner or operator of the CEMS that elects to meet the alternative CEMS certification requirements shall:

   See comment for (f)(1)(B) above. In addition, if a component is not listed in the Matrices then it should not be listed in the certification letter. 4-9

10. (f)(10) For a CEMS modification on a component that is not identified on the CEMS final certification letter or listed in the South Coast AQMD Technical Guidance Document R-002,

but is listed in the Quality Assurance/Quality Control Plan, the owner or operator of the CEMS shall:

See comment on (f)(1)(B) and (f)(8). In addition to the components listed in the CEMS description, there are numerous components mentioned throughout our QAP. Each time any of these components are replaced/modified, we would have to evaluate if it may adversely impact the accuracy and precision of the CEMS measurements. 4-10

11. (i) Reporting Requirements

Reporting requirements should be consistent with existing reporting requirements in source-specific rules or permits in order to avoid any additional redundant reporting. Reporting mechanism should be clearly defined. 4-11

12. (i)(2) Excess Emission Reporting

When determining excess emissions, CEMS out-of-control period and the period when the unit is not subject to any emission limit should be excluded similar to the spiking data percentage calculation. Reporting requirements should be as specified in the source-specific rule. Proposed requirement to report within 24 hours is too stringent. Although we rarely ever have excess emissions as our engines are subject to the 24-hr averaging period, 24-hr is just not enough to determine if the excess emissions were due to an engine, catalyst system, urea injection system, or CEMS. We request that the excess emissions reporting time frame be consistent with the Title V permit and Form 500-N (Section II.1.c) requirement which is a verbal reporting within 72 hours and submitting a written report within 14 days. We also report these same incidents in Rule 1110.2 quarterly reports. 4-12

Proposed Rule 218.3 – December 2020 Draft

13. (f)(1)(A) A seven-day calibration drift test shall be comprised of a series of eight (8) calibration error tests during a seven-day period performed once each day with an interval of 24 hours plus a 2-hour grace period for each test, when the CEMS is in continuous operation.

    Are there any unit operational requirements for this test (e.g. unit must be operating)? 4-13

14. (g) Quality Assurance Testing Requirements and Specifications

    The main issue is with the R218.1 and PR218.3 daily CD requirements. Per App. F, CEMS is out of control (OOC) if daily CD exceeds two times the performance standard (2.5% Span) for 5 consecutive days and is OOC from time of previous passed CD if CD>4 x PS (go back 24 hours). Per R218.1 and PR218.3, CEMS is OOC if CD > 2 x PS and requires corrective actions immediately (even on weekends and holidays). Calibration drift more than 2 x PS (but less than 4xPS) may not always caused by CEMS malfunction and are corrected by conducting another calibration. OC San uses outside contractor to maintain and troubleshoot our CEMS units and requiring immediate corrective actions to be taken especially on weekends and holidays imposes undue compliance burden. 4-14

15. (i)(2)(C)(ii) Calculate a spiking data percentage for each calendar quarter using the following equation:

    For CEMS with dual/multi-range analyzers, would this apply to the highest range only? 4-15

16. (i)(4)(D) Pollutant concentration correction by diluent gas shall be performed with the averaged value at the interval required for compliance demonstration.

    Please confirm for facilities with longer than 1-hr averaging period (e.g., 24-hr), the correction takes place at the end of 24-hr period based on the average of twenty-four (24) 1-hr averages of pollutant and diluent concentrations. 4-16

17. (i)(5)(C)(i) When data availability of any analyzer falls below 95 percent for one calendar quarter, the owner or operator of the CEMS shall:

    What if an analyzer failure occurs due to a broken part and that part is not available for several days? Not every analyzer component failure adversely impacts the accuracy of the CEMS data (an example would be an analog output card on an analyzer that communicates using 4-20 ma signals). This requirement seems overly punitive as there are situations (like the one described above) where CEMS data could be invalid, but the root cause for the missing data has nothing to do with the accuracy of the CEMS. Facilitating RATA as with any other source testing is resource intensive and causes operational disruption. There could 4-17

    also be a scheduling issue with a RATA source tester not being available within the 30-day window. 4-17 (cont'd)

Response to Comment Letter #4

Response 4-1: Please see the Response to Comment 3-8.

Response 4-2: Please see the Response to Comment 3-3.

Response 4-3: Please see the Response to Comment WS-3.

Response 4-4: Staff understands that PR 218.2 (f) Certification Requirements is describing a set of complicated requirements. To better understand the requirements as applied to each facility staff has included a flow chart in the staff report that will help the stakeholders follow the requirements in step-by-step manner. In addition, staff will continue to work with stakeholders to provide clarifications with regards to the CEMS certification and all other PR 218.2 and 218.2 requirements.

Response 4-5: The Technical Guidance Document R-002 (TGD R-002) content is the same as information found in Part 3 of the ST 220 form. With regards to the recertification application, PR 218.2(f) specifies the processes that are dependent on the type of CEMS modifications. Please see the Response to Comment WS-6 on limiting the list of components for recertification. While there is uniqueness for various CEMS, staff can work with stakeholders on a case-by-case basis to determine if the list of components for recertification at modification for their specific CEMS can be further reduced.

Response 4-6: For a CEMS modification required within 30 days due to CEMS failure, PR 218.2 (f)(3) allows the modification to be conducted prior to the application process and any approval.

Response 4-7: Staff agrees with the commenter. PR 218.2 (f)(6) has been revised accordingly.

Response 4-8: The 45-day period is the existing requirement under 218. On this basis, staff does not recommend any changes.

Response 4-9: Please see the Response to Comment 4-5. In addition, a component not listed in the Matrices (i.e., TGD R-002) is generally not listed in the certification letter. However, the analyzer span range is an exception to this listing. The certification letter identifies the span range setting and the Technical Guidance Document R-003 (TGD R-003) specifies the test requirement for a span range change. Staff has revised PR 218.3 (f)(6) to add TGD R-003 for certification test guidance.

Response 4-10: Please see the Response to Comment WS-6

Response 4-11: Based on this comment and commenter's previous questions in the Working Group Meetings, staff believe the commenter's concern focuses on the CEMS breakdown reporting required by both Rule 1110.2 and PR 218.2. While Rule 1110.2 requires the breakdown to be included in a quarterly

report, PR 218.2 requires CEMS breakdown to be reported by calling 1-800-CUT-SMOG within 24 hours of the next business day of occurrence, and then included in the CEMS semi-annual emission summary report. Both the Rule 1110.2 quarterly report and PR 218.2 semi-annual report include many other reporting elements. For information integrity and a thorough evaluation, breakdown should be included the breakdown information in the CEMS semi-annual emission summary report.

Response 4-12: When CEMS is in the Out-Of-Control period, CEMS data would not be valid to determine excess emissions. On the other hand, when the unit is not subject to any emission limit, there would not be any excess emissions. The excess emission reporting is the existing requirement in Rule 218. PR 218.2 (i)(2) has been revised to allow a verbal reporting by calling 1-800-CUT-SMOG.

Response 4-13: Please see the Response to Comment 2-4

Response 4-14: Please see the Response to Comment 2-5

Response 4-15: As specified in PR 218.3 (i)2)(C), the data recorded in PR 218.3 (i)(2)(A) and PR 218.3 (i)(2)(B)(ii) will be counted as spiking data in the calculation. For CEMS with dual/multi-range analyzers, this applies to the highest range only.

Response 4-16: The commenter's understanding is correct for the diluent correction. However, if the source-specific rule or a permit condition defines it differently, the source-specific rule or a permit condition requirement would supersede the requirements specified in PR 218.3.

Response 4-17: Please see the Response to Comment 2-9. In addition, PR 218.3(i)(5)(C)(i)(I) has been revised to extend the relative accuracy test audit due date from 30 days to 45 days after the CEMS data availability falls below the threshold.

Comment Letter #5

January 22, 2021

Ms. Yanrong Zhu
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Ms. Zhu:

Subject: Los Angeles Department of Water and Power's (LADWP) Comments on Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

LADWP appreciates the opportunity to provide comments on the Proposed Rule 218.2 – Continuous Emission Monitoring System (CEMS): General Provisions, and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications. LADWP remains committed to working with the South Coast Air Quality Management District (SCAQMD) to develop effective policies for monitoring emissions from major facilities in order to meet air quality goals in the South Coast Air Basin.

LADWP operates seven combined cycle units, four boilers units and 14 simple cycle units, each with a dedicated CEMS currently certified under SCAQMD Rules 2012, 218, 218.1 and 40 CFR Part 75. Six of the seven combined cycle units and six of fourteen simple cycle units are dual fuel units capable of combusting both natural gas and diesel fuel, with the latter only used for emergency. The CEMS for these dual fuel units are certified to measure NOx and CO emissions from both natural gas and diesel combustion.

Comments on Proposed Rule 218.2 –
Continuous Emission Monitoring: General Provisions

Section (f) – Certification Requirements.

As mentioned above, a total of 12 LADWP generating units are capable of combusting natural gas and diesel as an emergency fuel with CEMS that are certified to measure 5-1

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both fuels. The CEMS for these units completed certification testing in 2016 while combusting diesel fuel. The Proposed Rule 218.3 Section (d)(3) requires that CEMS certified under Rule 2012 must be recertified within 24 months after the NOx RECLAIM facility has been notified as a former RECLAIM facility. The certification requirements in Rule 218.2, Section (f) do not address CEMS recertification requirements for dual fuel units or units that combust diesel as an emergency fuel. LADWP recommends that SCAQMD include language in the rule that clarifies that CEMS certification or recertification is only required for the primary fuel. 5-1 (cont'd)

Section (f)(10)(A) to (C) - Modification of CEMS Component Listed in Quality Assurance/Quality Control Plan

LADWP believes that maintaining the CEMS according to the Quality Assurance (QA)/Quality Control (QC) Plan, logging all maintenance work, and making the records available to the SCAQMD inspector is justified and sufficient for compliance. LADWP maintains 25 CEMS units that are periodically QA/QC tested and ensures that the corresponding test results are made available to SCAQMD. Requiring facilities to notify SCAQMD, submit revised QA/QC Plans, and conduct testing for the replacement of CEMS components, including those not listed in the CEMS Certification or the Technical Guidance Document R-002 seems more than reasonable. Because the justification for the additional requirements remains unclear, LADWP recommends that SCAQMD limit this requirement to components listed in the CEMS Certification. 5-2

Comments on Proposed Rule 218.3 – Continuous Emission Monitoring Performance Specifications

Section (g)(1)(B) – Calibration After Unit Restart

This section requires a calibration error test to be performed within four hours of the unit restart, if the unit restart is after a period longer than the testing cycle specified in subparagraph (g)(1)(A) when no emissions are generated. LADWP operates four combined cycle units that have a six-hour cold start permit time limit. If calibration is performed prior to completion of a cold startup, the CEMS could fail calibration. and result in out-of-control periods and other inconsistencies following a unit restart. To allow sufficient time for units to reach compliance following a startup and CEMS to be properly calibrated, LADWP recommends that SCAQMD aligns this section with 40CFR Part 75 which allows an 8-hour grace period after unit restart. 5-3

Ms. Zhu
Page 3
January 22, 2021

Section (g)(2)(D) – 14-Day Grace Period for a Relative Accuracy Test Audit

LADWP supports SCAQMD allowing the relative accuracy test audit (RATA) to be performed within 14 days after the unit is restarted if the unit is not operating or generating emissions when a RATA is due. However, the 14-day grace period after unit restart is not enough time to perform the RATA especially when a unit has been inoperable for an extended period. LADWP typically performs a series of tests to ensure reliable and safe operation of the unit before a RATA can be performed. Critical tests such as "balance shot" tests intended to balance the turbine rotor and generator rotor must be performed following a repair that lasts several months to ensure that the unit operates within the Original Equipment Manufacturer vibration limits. In many cases, getting the unit to finally operate within its vibration limits would involve several sets of these tests, each requiring several days to a week to complete. In addition, these tests are sometimes further delayed by having to restart the unit, run it intermittently, and then turn it off for a few days in order to perform necessary adjustments to the unit. In such cases, the 14-day grace period will be used up quickly. LADWP recommends that SCAQMD allow 14-unit operating days instead of 14 calendar days after first firing of the unit to perform the RATA. 5-4

Section (i)(4)(A)(ii) – Emission Data Averaging During Maintenance and Quality Assurance Activities

If the unit operates in two or more quadrants of the hour during a maintenance or QA hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average. Under Rule 2012, maintenance hours are considered valid hours if there is a minimum of two valid 15-minute quadrants, each having a minimum of one valid data point. There is currently no requirement to have a 15-minute separation between the two data points during a maintenance hour. In the absence of a justification for the 15-minute separation requirement, LADWP recommends that the proposed 15-minute separation between the two valid data points be removed. 5-5

Section (i)(5)(A) – CEMS Availability

The formula for calculating the quarterly CEMS Data Percent Availability provided in this section is based on unit operating hours rather than CEMS operating hours. This formula poses problems for LADWP's peaking units that do not operate often to meet the 95 percent CEMS availability threshold requirement in Section (i)(5)I. For example, Harbor Generating Station Units 10-14 had an average of 56 operating hours per quarter for the past five years. If these units continue to operate at the same rate, it will 5-6

only take a few out-of-control hours for the percent availability to drop below 95 percent. If this persists, LADWP would have to perform a RATA every quarter or worse, recertify the CEMS every 6 months as required by Section (i)(5)(C)(i) and (ii). RATA and recertification tests are not only costly but are also very involved, requiring close coordination with the Energy Control Center which is responsible for scheduling and dispatching the generating units. To properly account for availability regardless of whether the units run continuously or occasionally, LADWP recommends that SCAQMD use CEMS operating hours instead of unit operating hours in calculating the Data Percent Availability.

LADWP also recommends that start up and shut down hours be excluded from the 95% data availability calculation requirements for units with a startup and shutdown permit emission limit. Many of LADWP's units have startup and shutdown emission limits. Startup and shutdown periods do not always start at the top of the hour and therefore, are recorded in terms of partial hours. For example, a startup that occurs 50 minutes into the hour (12:50) would not have two valid 15-minute quadrants in that hour. Similarly, a shutdown that concludes at 1:10 would also not have two valid 15-minute quadrants. LADWP recommends revising subparagraph (i)(5)(B)(i) to expand the exclusion of startup and shutdown periods from the data availability calculation to include equipment subject to startup and shutdown permit emission limits.

5-6 (cont'd)

LADWP requests SCAQMD's consideration of these comments and the other stakeholder's comments and looks forward to working with SCAQMD for further development and changes to these rules.

If you have any questions or would like additional information, please contact Ms. Andrea Villarin of my staff at (213) 367-0409.

Sincerely,

Katherine Rubin
Manager of Air and Wastewater Quality and Compliance

LL:
c: Mr. Michael Krauss (SCAQMD)
Mr. Gary Quinn, PE (SCAQMD)
Ms. Andrea Villarin (LADWP)

Response 5-1: Certification tests required by PR 218 and 218.3 are based on span ranges or as-found unit operating condition, instead of primary or backup fuels. Tests, such as seven-day calibration drift, are for each span range that requires CEMS operation with no unit operation requirement. On the other hand, tests, such as relative accuracy test audit, are conducted in the as-found unit operating condition. Therefore, a rule clarification on the CEMS certification or recertification for primary fuel only would not be necessary. If deemed necessary, during the Executive Officer's evaluation there may be required additional testing as a condition on the certification letter (e.g., testing at combusting diesel back up fuel). Such an evaluation would be made on a case-by-case basis, if deemed necessary.

Response 5-2: Please see the Response to Comment WS-6.

Response 5-3: A calibration error test is conducted by introducing a calibration gas at the sampling probe, and the analyzer makes measurement for the injected calibration gas. Unit operation status would not have an impact for the test.

Response 5-4: Staff agrees that a unit restart may involve intermittent runs with necessary adjustments. PR 218.3 (g)(2)(D) has been revised to specify that the test would be performed within 14 days after the unit is restarted and resume normal operation.

Response 5-5: PR 218.3 (i)(4) proposes to apply the Part 60/Part 75 emission data averaging method, which includes the15-minute separation requirement for a minimum two valid data points for a maintenance and quality assurance hour. This data handling method has been utilized for non-RECLAIM CEMS and widely applied by other regulatory agencies. Staff understand that the emission data averaging method is different for RECLAIM CEMS. The difference is not only on the commented 15-minute separation for maintenance or QA hours, but also on the definition of a valid maintenance or QA hours, the number of those hours allowed, and the method of computing hourly average from 1-minute data. On this basis, staff recommends maintaining the proposal in aligning with Part 60/Part 75 emission data averaging method for consistency.

Response 5-6: Please see Response to Comment 3-11 for an explanation on why CEMS data availability would not be adversely impacted by limited unit operation. Similarly, the spiking at startup and shutdown with an emission limit should not be a concern with regards to CEMS data availability because the spiking data recorded pursuant to PR 218.3 (i)(2) will be considered as valid data, as specified in PR 218.3 (i)(3).

Proposed Rule 218.2
Continuous Emission Monitoring System: General Provisions

Proposed Rule 218.3
Continuous Emission Monitoring System: Performance Specifications

Proposed Amended Rule 218
Continuous Emission Monitoring

Board Meeting
March 5, 2021

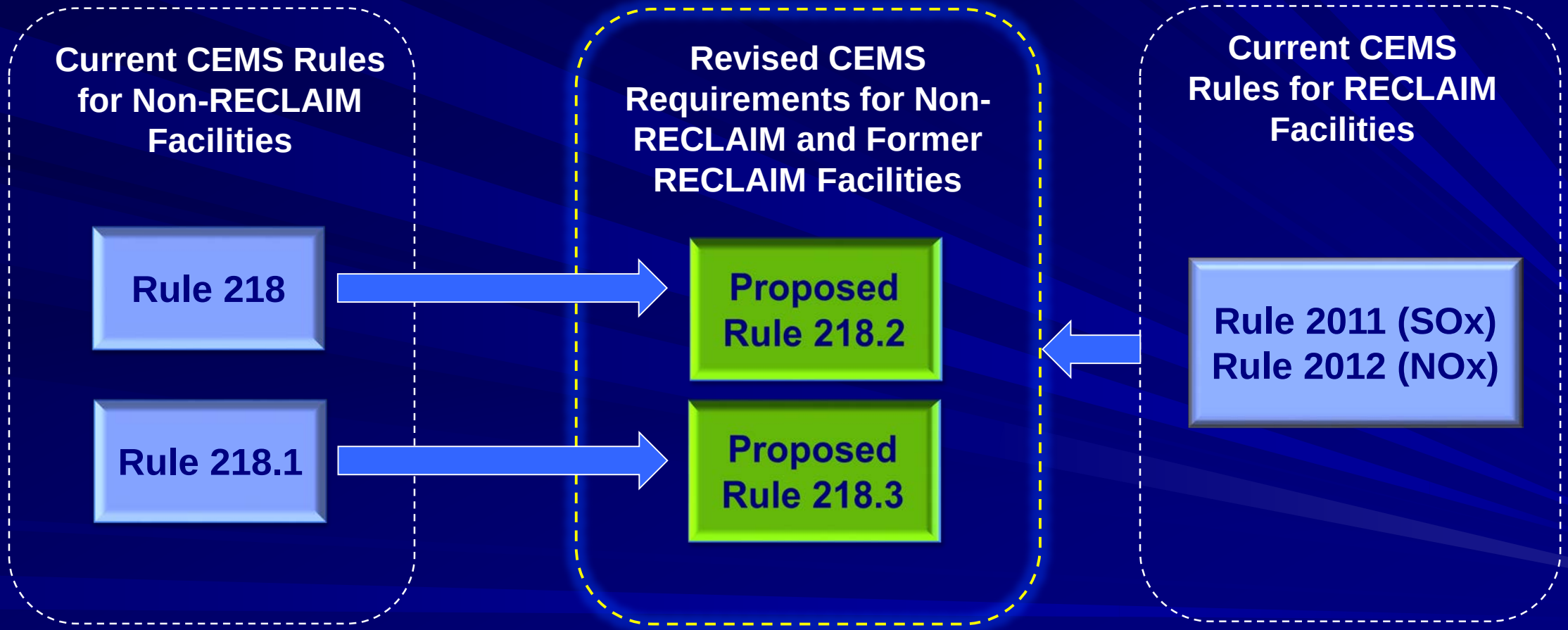
Background

- Various rules and permits require continuous emission monitoring system (CEMS) to continuously measure pollutant concentrations or emissions to determine compliance
- CEMS rules provide specifications for proper installation and operation to ensure accuracy and precision of the CEMS
- Amendments to CEMS rules are needed to:
  - Address CEMS requirements for facilities that transition from RECLAIM to a command-and-control regulatory structure including alignment with federal regulations and correlating with landing rules
  - Streamline and provide additional clarifications and flexibility pursuant to stakeholders' request
  - Codify existing practices to improve transparency

Continuous Emissions Monitoring Systems (CEMS)

- A CEMS generally consists of an in-stack sampling probe, an analyzer, and a data acquisition and handling system
- CEMS are currently required for the largest combustion sources (generally > 40 MM Btu/hour)
  - ~ 80 RECLAIM facilities have units with CEMS
  - ~ 120 non-RECLAIM facilities have units with CEMS
- Requirements to install CEMS are specified in source-specific rules or RECLAIM rules
- CEMS rules are very detailed and technical to ensure data collected is accurate

Rule Approach



Implementation Schedule

All CEMS will transition to PR 218.2 and 218.3 by one of the following three pathways (whichever is later)

Pathway 1

New or Modified CEMS within Specified Window

- At certification or recertification (after exiting RECLAIM for RECLAIM CEMS)

Pathway 2

If No Recertification During Timeframe of Pathway 1

- January 1, 2025 for Non-RECLAIM CEMS
- 24 months after exiting RECLAIM for RECLAIM CEMS

Pathway 3

Rule Compliance Date

- Implementation date in landing rule for CEMS certification or recertification

Proposed Rule 218.2

- Based on Rule 218 and establishes administrative requirements for CEMS
- Implementation schedule addresses certification and re-certification of all CEMS for non-RECLAIM and former RECLAIM facilities
- Most revisions improve the clarity with no substantive change
- Includes new provision for Monitoring Requirements (e)

(a) Purpose
(b) Applicability
(c) Definitions
(d) Implementation Schedule
(e) Monitoring Requirements
(f) Certification Requirements
(g) Quality Assurance/Quality Control Plan
(h) Recordkeeping Requirements
(i) Reporting Requirements
(j) Certification Posting
(k) Exemption

Key Changes to Proposed Rule 218.2

Aligning with the Federal Requirements or RECLAIM rules
- Provisionally validates CEMS data recorded during the certification or recertification period
- Allows additional hours for CEMS to not operate when CEMS fails

Addressing Stakeholder Comments
- Streamlines the procedure for emergency repair

Providing Flexibility
- Allows scheduled CEMS shutdown during long-term shutdown periods of basic equipment

Codifying existing practices to improve transparency of requirements
- Incorporates simplified recertification processes for qualified CEMS modifications

Proposed Rule 218.3

- Based on Rule 218.1 and establishes CEMS performance specifications
- Key revisions:
  - Pre-certification requirements - subdivision (e)
  - Calibration gas and zero gas – subdivision (h)
- New data handling provisions added to subdivision (i)

(a) Purpose

(b) Applicability

(c) Definitions

(d) Implementation Schedule

(e) Pre-Certification Requirements

(f) Certification Test Requirements

(g) Quality Assurance Testing Requirements

(h) Calibration Gas and Zero Gas

(i) Data Handling

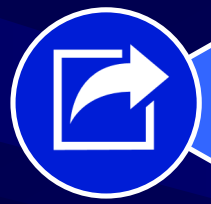
(j) SCEMS Requirements

(k) Moisture Correction

(l) Exemption

Tables and Attachments (e.g., Equations)

Key Changes to Proposed Rule 218.3



Aligning with Federal Requirements or RECLAIM rules

- Defines how to calculate hourly emission average
- Provides more options for calibration gas used for various quality assurance tests

Addressing Stakeholder Comments

- Specifies CEMS data availability calculation and subsequent requirements when data availability falls below a threshold

Providing Flexibility

- Defines span range setting for capturing monitored data for specific situations
- Allow spiking data to be valid data with a threshold set for the percent of spiking data (would avoid data loss and provide data in assessing excess emissions)

Recognizing Lower Limits in Rules

- Revises NOx de minimis standard from 1.0 ppm to 0.5 ppm for Relative Accuracy Audit Tests

Public Process

- Rule development started in 2018 with first working group meeting in March 2019
  - 11 working group meetings
  - 23 key topics discussed in detail
- Conducted stakeholder meetings address their comments
- There is no remaining key issues

Staff Recommendations

- Adopt the Resolution:
  - Determining that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are exempt from the requirements of the California Environmental Quality Act; and
  - Amending Rule 218, and Adopting Rule 218.2 and Rule 218.3