

Requirements for Continuous Emission Monitoring

Proposed Amended Rules (PAR) 218 and 218.1

**Working Group Meeting #7
February 13, 2020
9:30 am**

**Telephone number: 1-866-705-2554
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**South Coast AQMD Headquarters
Diamond Bar, California**

Agenda

- Rule Approach
- Progress of Key Topic Discussion
- Comments & Revisiting Key Topics
- Implementation Schedule
- Rule Structure
- Next Steps

Rule Approach

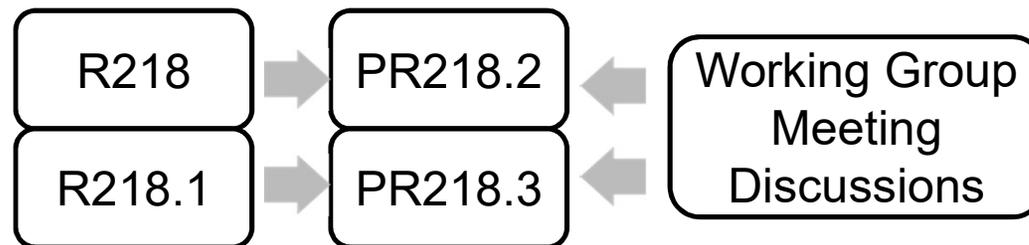
Rule Approach for Existing and New Provisions

- Staff has been considering the overall rule structure for implementation of existing and new provisions
- Implementation of new provisions will vary based on:
 - If the facility is a RECLAIM or non-RECLAIM facility
 - If a certification/recertification will be required
 - Implementation schedule in landing rules
- Staff is concerned that including existing and new provisions in one rule may be difficult and challenging to follow

Rule Approach – cont.

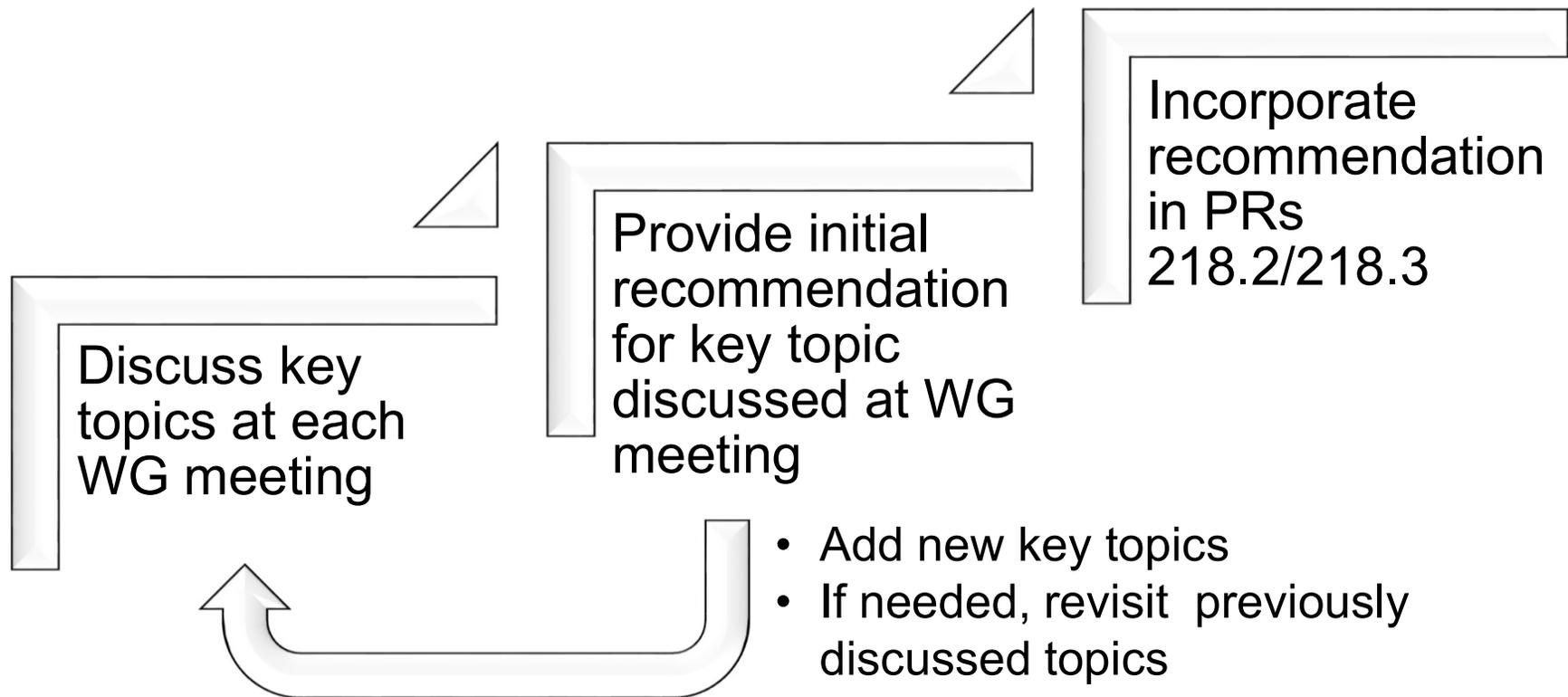
■ Staff proposes:

- Retain the existing provisions in Rules 218 and 218.1
- Introduce Proposed Rules 218.2 and 218.3
 - Transfer provisions from Rules 218/218.1
 - Include new provisions based on Working Group meeting discussions
 - Incorporate implementation schedule (bridge for RECLAIM and non-RECLAIM facilities)
- Amend Rule 218 and Rule 218.1 to add exemption for sources subject to Proposed Rules 218.2 and 218.3



Progress of Key Topic Discussion

Overall Approach to Address Key Topics*



*Key topics related to proposed rule language

Progress of Key Topics Discussion

Key Topics	Discussion	Initial Recommendation
1. PR 218.2/218.3 Applicability ➤ Any change?	Applicable to all pollutants, but the focus of this amendment will be on NOx MRR requirements	No changes to applicability 
2. Semi - Continuous Emission Monitoring System (SCEMS) ➤ Any change to its requirements?	<ul style="list-style-type: none"> • R218/218.1 includes time-shared CEMS in SCEMS definition • Rule 2012 has specification on time-shared CEMS • No impact to NOx sources to retain R218/218.1 SCEMS requirements 	<ul style="list-style-type: none"> • No changes to definition of SCEMS • Retain SCEMS requirements in PR 218.2/218.3 

Progress of Key Topics Discussion – cont.

Key Topics	Discussion	Initial Recommendation
3. NO ₂ to NO Conversion efficiency test ➤ Required?	Specified in Rules 218/218.1 but not in Rule 2012	Require NO ₂ to NO conversion efficiency test 
4. Reporting excess emissions ➤ Also applicable to non-Title V source CEMS?	Would impact RECLAIM CEMS of non-Title V sources that report all mass emissions but not excess emissions	Require reporting excess emissions for both Title V and non-Title V sources with CEMS 
5. The standards for “existing” CEMS ➤ Still applicable?	Obsolete requirements in Rules 218/218.1	Remove the requirement 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>6. Full Span Range (FSR)</p> <ul style="list-style-type: none"> ➤ Any change to existing requirements? ➤ What if most of data falls below 10% of the range? ➤ Is low value calibration gas available? 	<p>With concentration limit being established for facilities exiting RECLAIM, their Full Span Range should be aligned with the Rules 218/218.1 requirements</p>	<ul style="list-style-type: none"> • Use the Rules 218/218.1 requirements in PR 218.2 and 218.3 • Provide additional recommendation for data that falls below 10% of the range • Span range may be set otherwise upon approval for unit with emission limit at or below 5 ppm
<p>7. Missing Data Procedure</p> <ul style="list-style-type: none"> ➤ Applicable? 	<p>Required for RECLAIM sources, but no longer needed for concentration based monitoring</p>	<p>Remove the requirement</p>

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>8. Strip chart recorder</p> <ul style="list-style-type: none"> ➤ Continue to require? 	<p>The existing CEMS Data Acquisition and Handling System (DAHS or DAS) would be sufficient</p>	<p>Remove the requirement</p> 
<p>9. Quality assurance (QA) test report submittal</p> <ul style="list-style-type: none"> ➤ Extend the requirement to all CEMS? 	<ul style="list-style-type: none"> • Not required by Rules 218/218.1 • Required by Rule 2012 • RECLAIM facilities submit QA test report summary by Electronic Data Reporting (EDR) 	<p>Require all PR 218.2/218.3 facilities submit QA test report for all applicable pollutants via EDR</p> 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>10.PR 218.2/218.3 alignment with EPA's Part 75</p> <ul style="list-style-type: none"> ➤ How to align? 	<ul style="list-style-type: none"> • An analyzer at or below 30 ppm span level is common in this area; • PR 218.2/218.3 are also applicable for pollutants not regulated by Part 75; • Part 75 linearity check data could be used to calculate CGA; • PAR 218/218.1 CEMS monitored units may often have off-line time 	<ul style="list-style-type: none"> • Continue to require CGA instead of linearity check; • May allow linearity check as an alternative in complying with CGA requirement; • Continue to allow certain tests to be conducted off-line 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>11. CEMS data availability threshold</p> <ul style="list-style-type: none"> ➤ Can the rule be more specific and clear on this requirement? ➤ What will be required if it exceeds the threshold? ➤ What can be excluded from data availability calculation? ➤ Is it calculated on a quarterly or annual basis 	<p>Current R218/218.1</p> <ul style="list-style-type: none"> • Defines data availability on an annual basis • Requires 95% as the threshold for data availability • Excludes 40 hours of CEMS calibration, maintenance, repair, or audit each month from data availability calculation 	<ul style="list-style-type: none"> • Clarify the definition and calculation method for data availability; • Exclude the startup and shutdown hours allowed by permit condition from data availability calculation • Exclude CEMS maintenance, repair or audit for up to 120 hours/year (10 hours/month) • When data availability falls below 95%, certain requirements could be triggered • Compute data availability on a calendar quarter basis

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>12. CEMS measuring low emissions</p> <ul style="list-style-type: none"> ➤ What are the challenges on passing QAQC test? 	<p>Stakeholders expressed difficulty meeting a 7-day calibration drift standard for CEMS measuring low emissions</p>	<ul style="list-style-type: none"> • Analysis on in-house data for NOx ranging from 2 ppm to 50 ppm indicates no difficulty for CEMS measuring low emission • Will consider an alternative standard proposal based on forthcoming additional valid data received from stakeholders
<p>13. Certification testing</p> <ul style="list-style-type: none"> ➤ Any change? 	<p>Certification testing requirements were summarized at the WG meeting</p>	<ul style="list-style-type: none"> • Remove the requirements specific for RECLAIM (e.g., bias test for bias adjustment factor) • Update the Rule 218/218.1 guidance document for certification test accordingly 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
14. Recertification and diagnostic tests ➤ Any changes?	Any modification that may affect the description on the CEMS certification letter would require the CEMS application (Form ST-220) and the applicable tests according to Technical Guidance Document R-002	<ul style="list-style-type: none">• The recertification requirements should not change• PR 218.2/218.3 will provide clarification for recertification requirements• Staff will assess if the guidance document should be updated 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>15. Performance Standards for Relative Accuracy Test Audit (RATA)</p> <ul style="list-style-type: none"> ➤ What will be the changes to the relative accuracy standards and <i>de minimis</i> standards for RATA? 	<p>Relative accuracy and <i>de minimis</i>/Alternative Standards required by different regulations were compared</p>	<ul style="list-style-type: none"> • Retain R218/218.1 relative accuracy standards in PR 218.2/218.3 (10% for O₂/CO₂, 20% for NO_x concentration and mass emission, and 15% for flow); • Specify calculation method on meeting <i>de minimis</i> standards; • Retain R218/218.1 <i>de minimis</i> standards, but add <i>de minimis</i> 1.0% for CO₂ and reduce the current NO_x <i>de minimis</i> standard from 1.0 ppm to a lower level; • When the measured O₂/CO₂ is at or below 15%, allow 20% RA for O₂/CO₂ with Executive Officer's approval

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>16. The option of complying with Part 60 Appendices B & F (<i>alternative to Rule 218.1 standards</i>)</p> <ul style="list-style-type: none"> ➤ Shall the permit holders refer to R218.1 only or have the option to refer to Part 60 for CEMS certification and QAQC requirements? 	<p>Analyzed the differences between Part 60 and R218.1 on:</p> <ul style="list-style-type: none"> • Certification tests • 7-day drift standard • Out-of-control period • Data point >95% of span • RATA standard • Operation load for RATA • Numbers of runs for RATA • Calibration gas requirement 	<ul style="list-style-type: none"> • Phase out Part 60 option for those requirements • EO has discretion to approve otherwise (e.g., Operation load for RATA below normal load) • Requirements will be effective at next CEMS recertification • Part 60 specifications on valid hour and hourly averaging (Key Topic #18) will be incorporated into PR 218.2/218.3 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>17. Relief on CEMS operation and data availability</p> <ul style="list-style-type: none"> ➤ Can the rule provide those types of relief during unit breakdown, unit non-operation, and CEMS repair 	<ul style="list-style-type: none"> • Existing requirements by R218/218.1 and R2012 • Additional recommendations 	<ul style="list-style-type: none"> • CEMS non-operation: <ul style="list-style-type: none"> ➤ During CEMS maintenance/repair, allow up to 96 hours CEMS non-operation, and may extend it for additional 96 hours if the unit is not operating ➤ Allow CEMS non-operation when the unit is off for at least 7 consecutive days, if certain requirements are met • Hours to exclude from data availability: <ul style="list-style-type: none"> ➤ Startup and shutdown exempted by permit condition from complying with any emission limit ➤ CEMS maintenance, repair or audit for up to 120 hours/year (30 hours/quarter) ➤ A valid unit Breakdown

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>18. Valid hour and hourly average</p> <ul style="list-style-type: none"> ➤ PR 218.2/218.3 should specify and harmonize the requirements for valid hour and hourly average 	<p>Compared 40 CFR Part 60 and Part 75, Rule 2012, and Rule 218/218.1 for:</p> <ul style="list-style-type: none"> • Valid data points required for a valid hour • Hourly average method 	<ul style="list-style-type: none"> • Specify valid hour and hourly average in PR 218.2/218.3 according to Part 60 & Part 75 method • RECLAIM CEMS may continue the RECLAIM averaging method until the next CEMS recertification as a result of any change needed to meet the landing rule NOx limits • Specification will be provided in PR 218.2/218.3 for demonstrating compliance to emission limit of a 15-minute interval or an interval greater than 1-hour • Concentration correction by diluent gas should be performed with the averaged value at the interval required for compliance demonstration • The comparable requirement of a landing rule may supersede



Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>19. Calibration gas</p> <ul style="list-style-type: none"> ➤ Should harmonize the requirements by various rules 	<ul style="list-style-type: none"> • Compared existing requirements by Rule 2012 and Rule 218/218.1 • Took into consideration of stakeholder's comments 	<p>Proposed requirements</p> <ul style="list-style-type: none"> • EPA Protocol gases • NIST standard reference materials; • 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, and upon approval by the Executive Officer, 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 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>20. Alternative CEMS</p> <ul style="list-style-type: none">➤ PR 218.2/218.3 should have a provision for Alternative CEMS	<p>Currently there are eight Alternative CEMS, all certified through RECLAIM Rule 2012</p>	<p>Use R2012 Chapter 2 Alternative CEMS certification requirements</p> <ul style="list-style-type: none">• Certifying Alternative CEMS according to the criteria specified in 40 CFR Part 75 Subpart E

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>21. Spiking data (data over 95% of span)</p> <ul style="list-style-type: none"> ➤ The current spiking data handling poses data loss, averaged emissions being underestimated, and difficulty to estimate excess emissions 	<ul style="list-style-type: none"> • Current requirement for spiking data handling • Observations of spiking activity 	<ul style="list-style-type: none"> • Record spiking data at the 95% of span value • Consider it as a valid data point for quantification and for CEMS data availability • Incorporate a backstop measure that is requiring a higher span when the 1-min spiking percentage is over 1% for any two calendar quarters in a consecutive four calendar quarters period 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>22. Alternative data acquisition for CEMS out-of-control period</p> <ul style="list-style-type: none">➤ CEMS out-of-control period affects data availability➤ When data availability falls below a threshold, the CEMS would be subject to subsequent requirements	<ul style="list-style-type: none">• Existing options for alternative data acquisition	<ul style="list-style-type: none">• Propose two options from Rule 2012 for alternative data acquisition during CEMS out-of-control period: District Method 100.1 or a standby certified CEMS 

Progress of Key Topic Discussion – cont.

Key Topics	Discussion	Initial Recommendation
<p>23. Reporting – summary of emission data</p> <ul style="list-style-type: none"> ➤ R2012 and R218/218.1 reporting requirements are different ➤ Should update and streamline the reporting requirements 	<ul style="list-style-type: none"> • Existing Emission Reporting Requirements • Consideration of mass emission no longer needed in the future, and more efficient ways of reporting such as reporting forms and electronic reporting are desirable 	<ul style="list-style-type: none"> • Maintain existing requirements and implement new requirements associated with other proposals * • Provide template reporting forms • Allow standard electronic reporting submittal; • Would need to implement CROMERR 

Comments & Revisiting Key Topics

24-hour Calibration Error

Existing Requirements

- R218.1 (b)(2)(A): 24-hour Calibration Error test shall be performed once each day “as close to 24-hour intervals as practicable”
- R2012 Attachment C: Conduct calibration error checks, to the extent practicable, “approximately 24 hours apart”

Stakeholder Comment

- Existing provisions in R218.1 and R2012 are vague
- Is there a grace period for conducting the 24-hour CE test?

24-hour Calibration Error – cont.

Analysis

- Staff agrees that “as close to 24-hour intervals as practicable” and “approximately 24 hours apart” are vague
- Part 75 allows a 2-hour grace period to conduct calibration error test

Initial Recommendation

- Propose a 2-hour grace period which will allow up to 26 hours to conduct a “daily” calibration error test
- Whenever a calibration error test fails, data from that monitor are invalidated and CEMS out-of-control period starts, until a subsequent calibration error test passes

24-hour Calibration Error – cont.

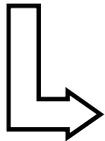
■ Examples

- An auto-calibration error test (set with a 24-hour interval) is not conducted, but later a calibration error test is conducted and passes within the 26-hour window since last successful calibration
 - The 24-hour calibration error test requirement is satisfied
 - No CEMS out-of-control period
- A calibration error test (conducted within a 24-hour interval) has failed, but then another calibration error test passes within the 26-hour window since last successful calibration
 - The 24-hour calibration error test requirement is satisfied
 - CEMS out-of-control period begins with the hour of the calibration failure and ends when the subsequent calibration test is passed

Spiking Data - Key Topic #21

Spiking Data Handling

- Spiking data is any data that is over 95% of the span range
- Under the initial proposal, an additional span range (higher span) would be required if the percent of spiking data is over a threshold



Comment

- What will be the certification and QA/QC requirements for the additional span range?



Initial Recommendation

- Initial certification is required
- For the on-going QA/QC:
 - Daily calibration and Calibration Gas Audit are required
 - Relative Accuracy Test Audit is NOT required

Alternative Data Acquisition- Key Topic #22

Previous Proposal

- Two options for alternative data acquisition during CEMS out-of-control period:
 - District Method 100.1; or
 - Standby certified CEMS

Comment

- Stakeholders recommended a third alternative data acquisition option as by Part 75:
 - Like-kind replacement analyzer : “A gas analyzer of the same type as the primary (i.e., it monitors the same parameter by the same measurement principle) that uses the same probe and sample interface as a primary monitoring system”

Alternative Data Acquisition- Key Topic #22 – cont.

Analysis

- The South Coast AQMD Technical Guidance Document TGD-002 addresses certification tests for “Like-kind replacement analyzer”, requiring RATA and other tests, which means a full certification is required
- Part 75 allows this options without an initial certification, but requires:
 - Daily/quarterly tests each day and quarters when it is used, operation restriction of 720 cumulative hours/year, and other conditions
- Facilities have the option to use a “Like-kind replacement analyzer”, with a full certification and required quality assurance tests

Initial Recommendation

- Staff proposes to allow an alternative data acquisition with the Executive Officer’s approval that meets the same data acquisition and quantification as CEMS that is certified by the South Coast AQMD.
- “Like-kind replacement analyzer” with a full certification and proper QAQC is an option

Implement CROMERR* for Electronic Reporting – Key Topic # 23

Comment

- Should a facility (e.g., a Part 75 facility) that has registered through the EPA CROMERR, also be required to register through the South Coast AQMD CROMERR?

* CROMERR - Cross-Media Electronic Reporting Rule by EPA to provide the legal framework for electronic reporting (<https://www.epa.gov/cromerr>)

Implement CROMERR for Electronic Reporting – Key Topic # 23 – cont.

Analysis

- The CROMERR program that the South Coast AQMD is establishing is an independent system which is not linked with EPA CROMERR
- Responsible officials registered through CROMERR are designated with specific reporting responsibility
- Any additional reporting responsibility (e.g., reporting for a rule that was not initially registered) would require a new registration through CROMERR

Initial Recommendation

- Part 75 facilities that registered through EPA CROMERR will be required to register through the South Coast AQMD CROMERR

CEMS Reporting for Rule 1110.2 engines – Key Topic # 23

Comment

- Can CEMS for Rule 1110.2 engines be exempted from breakdown reporting since the Rule 1110.2 quarterly report also addresses CEMS breakdowns?

CEMS Reporting for Rule 1110.2 engines – Key Topic # 23 – cont.

Analysis

- There are differences between PRs 218.2/218.3 and Rule 1110.2 CEMS breakdown reporting requirements
 - PRs 218.2/218.3 requirements are more specific (e.g., breakdown for over 24 hours)
 - Reporting timelines are different (e.g., PRs 218.2/218.3 - report within 24 hours or next business day; Rule 1110.2 - report on a quarterly basis)
- Electronic reporting for all CEMS through PRs 218.2/218.3 will streamline implementation and maintain the integrity of CEMS information

Initial Recommendation

- R1110.2 sources will be required to conduct CEMS breakdown reporting through PRs 218.2/218.3

Reporting for CEMS non-operation – Key Topic # 23

Comment

- Related to both reporting (Key Topic #23) and CEMS non-operation (Key Topic #17) requirements, stakeholders suggested to provide the option of using the gas bill to show zero fuel use (in addition to fuel meter and disconnected fuel line)

Reporting for CEMS non-operation – Key Topic # 23 – cont.

Analysis

- Staff previously proposed in Key Topic #17 to allow CEMS non-operation when the unit is off for at least 7 consecutive days, and conditions apply, including:
 - Zero fuel use demonstration either by fuel meter or disconnected fuel line
 - Reporting (Key Topic #23)

Initial Recommendation

- Stakeholder's recommendation on using gas bill is also considered feasible to incorporate, provided the gas bill only applies to the subject unit or the gas bill show no fuel used

Implementation Schedule

Considerations

- PRs 218.2/218.3 is scheduled for adoption in April 2020, staff is proposing to move the hearing date to November 2020
- Proposed adoption date is well before facilities exit RECLAIM
 - EPA has asked all landing rules, Regulation XX, and Regulation XIII New Source Review be amended and SIP approved before facilities exit RECLAIM
- Certification/Recertification of CEMS is a critical point for implementation of the proposed rules
- Final compliance date will be needed for situations where a CEMS will not need to be recertified post adoption of proposed rules such as units meeting future NOx limits
- For most units, the implementation timeline will be staggered based on modifications to equipment to meet NOx limits

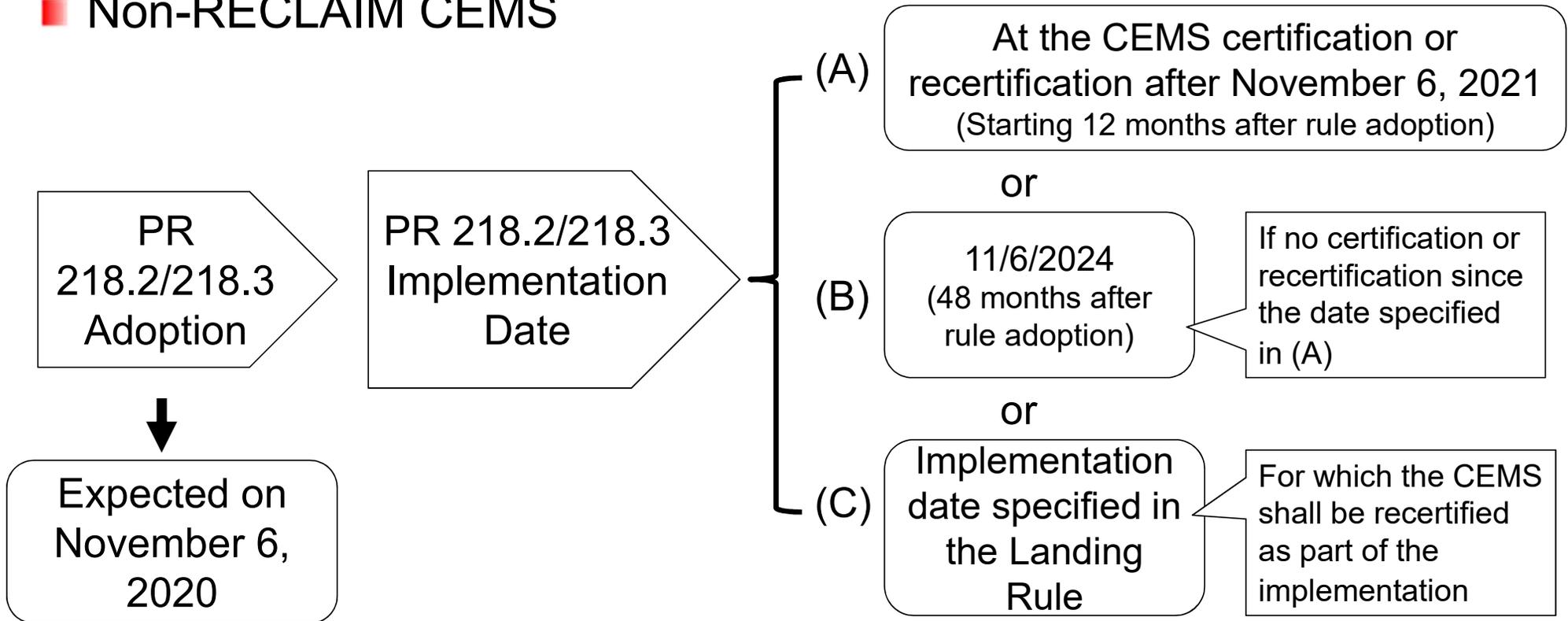
Approach for Implementation Schedule

- Two implementation schedules for RECLAIM and non-RECLAIM CEMS
- RECLAIM CEMS for this rulemaking purpose means:
 - NO_x CEMS
- Non- RECLAIM CEMS means:
 - CEMS in a non-RECLAIM facility, or
 - CEMS in a RECLAIM facility but for a pollutant other than NO_x or SO_x
- Prior to PR 218.2/218.3 implementation date, facilities should refer to:
 - R218/218.1 for requirements on non-RECLAIM CEMS
 - Regulation XX for requirements on RECLAIM CEMS

Proposed Implementation Schedule

**Implementation
schedule**

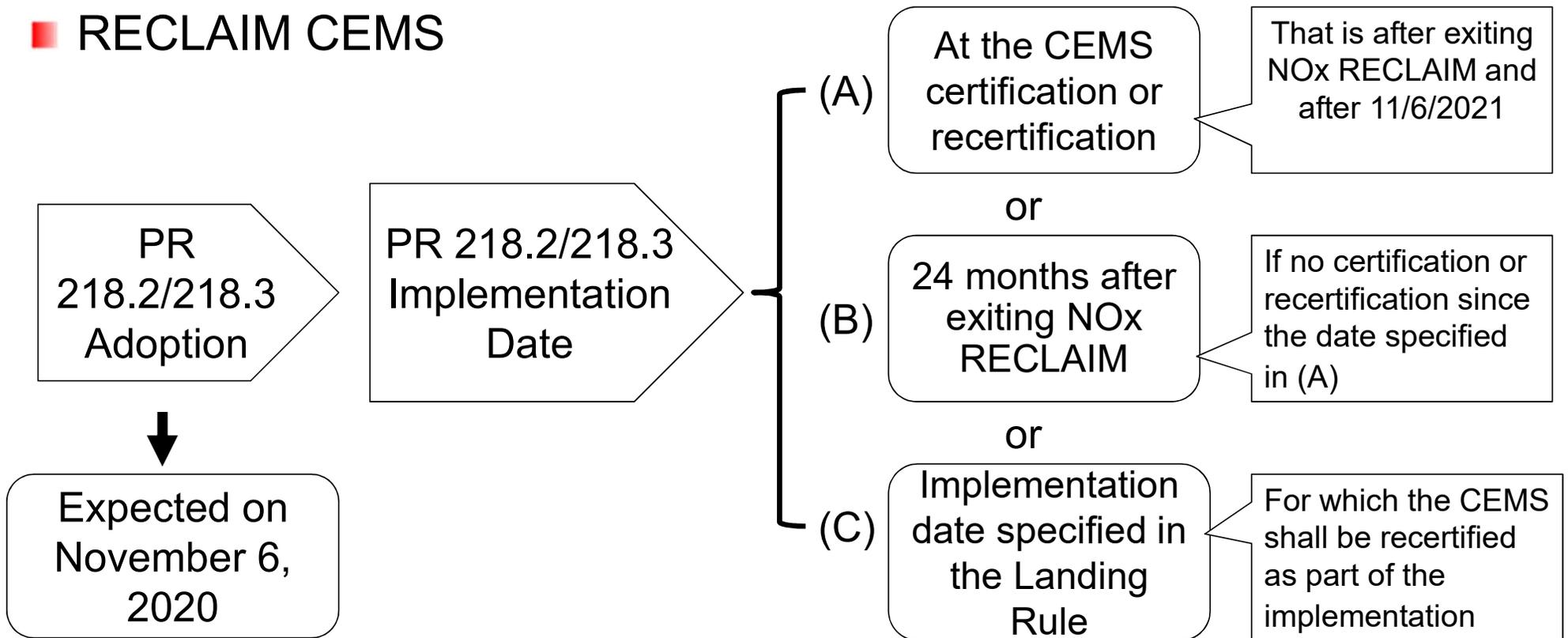
■ Non-RECLAIM CEMS



Proposed Implementation Schedule – cont.

Implementation
schedule

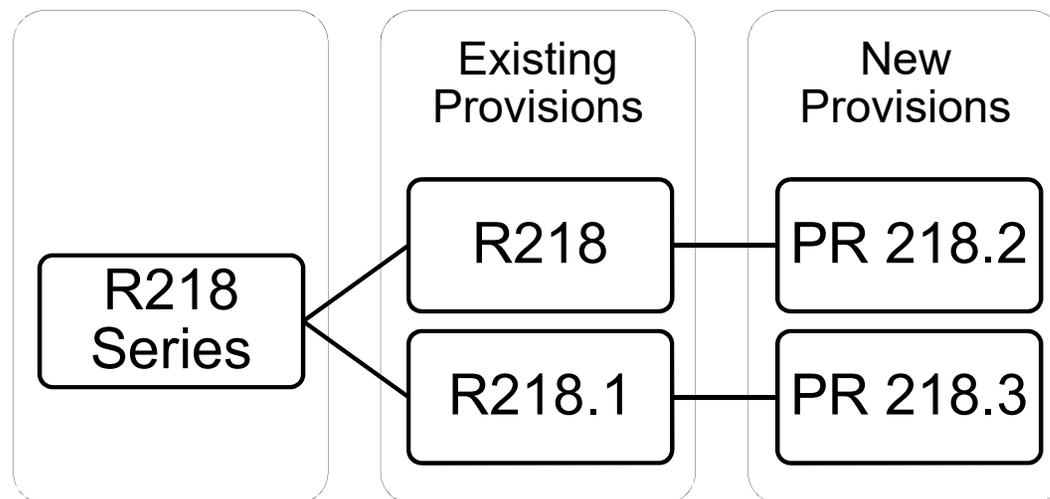
RECLAIM CEMS



Rule Structure

Regulatory Structure for the Rule 218 Series

- The new provisions of PR 218.2 and 218.3 will be
 - Based on existing provisions of Rules 218 and 218.1
 - Including new provisions based on Working Group meeting discussions
 - Incorporating implementation schedule



Rule Structure - PR 218.2

(a) Purpose

(b) Applicability

(c) Implementation Schedule

(d) Definition

(e) Monitoring Requirements

(f) Certification and Quality Assurance

(g) Recordkeeping Requirements

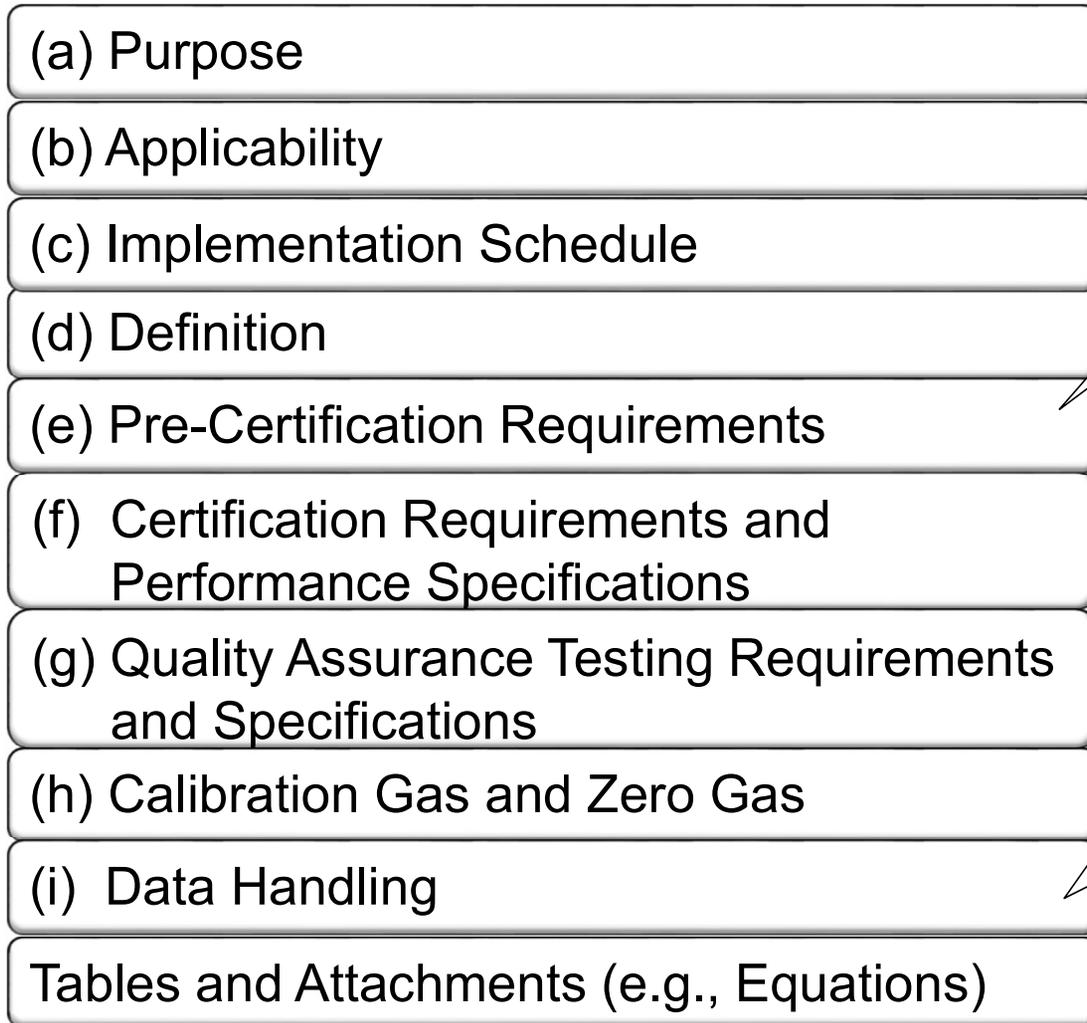
(h) Reporting Requirements

(i) Certification Posting

- Continuous monitoring
- CEMS failure or shutdown
- CEMS shutdown at emitting source long term non-operation

- Certification application and approval requirements
- Certification tests
- QAQC plan
- Ongoing QA requirements (Largely referring to PR 218.3 for technical details)

Rule Structure - PR 218.3



- CEMS location
- Sampling location
- Full Span Range
- Data Acquisition and Handling System (DAHS)

- Data points below 10% of span
- Data points above 95% of span
- Emission data averaging
- Data availability
- Out-of-control period and alternative data acquisition
- Semi Continuous Emission Monitoring System (SCEMS) (Time-shared CEMS included)

Next Steps – Future Discussion

- Any remaining issues
- Draft rule language

Next Steps – Rulemaking Process

- Next Working Group Meeting – April, 2020
- Public Workshop – June, 2020
- Public Consultation – August, 2020
- Set Hearing – October, 2020
- Public Hearing – November, 2020

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