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September 17, 2021

VIA Certified Mail and eMail (*wnastri@aqmd.gov*)
Return Receipt Requested

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Comments on SCAQMD Preliminary Draft Proposed Rule 1109.1 – Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Industries – And Related Proposed Rule 429.1 and Proposed Amended Rules 1304 and 2005 (Revision Date: August 20, 2021)

Dear Mr. Nastri:

On behalf of Tesoro Refining & Marketing Company LLC, a wholly owned subsidiary of Marathon Petroleum Corporation (collectively, "MPC"), MPC appreciates this opportunity to provide South Coast Air Quality Management District (SCAQMD) with comments on the Preliminary Draft Proposed Rule 1109.1 Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Industries (PR 1109.1) and the related proposed amended rules that were issued by the SCAQMD on August 20, 2021 (i.e., Proposed Rule 429.1 and Proposed Amended Rules 1304 and 2005).[1] Throughout the rulemaking process, MPC staff continues to be active participants in PR 1109.1 working group meetings and discussions with SCAQMD staff.

This set of comments, which supplements MPC's four previous comment letters submitted to SCAQMD on December 22, 2020, February 1, 2021, April 7, 2021, and May 12, 2021, focuses on several concerns that we outline below. Attachment 1 of this letter is a proposed mark-up of PR 1109.1 in red-line format that corresponds to MPC's comments.

1. **If U.S. EPA's Environmental Incentive Programs (EIP) Guidance[2] is applicable to the Best Available Retrofit Control Technology (BARCT) Equivalent Mass Cap Plan (B-Cap), environmental benefit can be demonstrated by other options and not only by the currently**

[1] SCAQMD, "Preliminary Draft Proposed Rule 1109.1" http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/pd_pr1109-1_75_day.pdf?sfvrsn=6

[2] EIP Guidance https://www.epa.gov/sites/default/files/2015-07/documents/eipfin.pdf

proposed additional 10% reduction in the mass oxides of nitrogen (NOx) Emission Targets in PR 1109.1.

A. U.S. EPA's EIP Guidance does not apply to the B-Cap

As currently drafted, PR 1109.1 at subparagraph (g)(2)(C) includes a 10% reduction (environmental benefit) in Phase I, Phase II, and Phase III Facility BARCT Emission Targets for a Facility that decides to comply with the B-Cap option. MPC understands that the U.S. EPA has not affirmed that the B-Cap is subject to the requirements of U.S. EPA's January 2001 guidance document entitled "Improving Air Quality With Economic Incentive Programs" (EIP Guidance) and is currently evaluating the applicability of the EIP Guidance to the B-Cap.[3] U.S. EPA's EIP Guidance indicates that the B-Cap is not an Economic Incentive Program (EIP). For example, when describing the types of discretionary EIPs, the EIP Guidance includes statements such as the following:

- An EIP may be an emission trading program, a financial mechanism program, a program such as a clean air investment fund (CAIF) that has features of both trading and financial mechanism programs, or a public information program.[4]

- The four general types of EIPs are emission trading programs, financial mechanisms, CAIFs, and public information programs.[5]

- Unlike traditional CAA regulatory mechanisms, emission trading involves more than one party.[6]

Since the B-Cap does not involve trading, and clearly does not qualify as any of the other types of EIPs covered by the EIP Guidance, the B-Cap should not be subject to review under the EIP Guidance.

B. U.S. EPA's EIP Guidance allows flexibility for demonstrating environmental benefit

If U.S. EPA, however, ultimately determines that EIP Guidance applies to the B-Cap, the guidance allows flexibility to demonstrate the environmental benefit which can be something other than reducing surplus mass NOx emissions by at least 10%. Indeed, there are already multiple environmental benefits inserted into the B-Cap and I-Plan requirements as we explain below. "Environmental benefit" is defined as follows:

> *Environmental benefit–generally means ... increased or more rapid emission reductions. ... environmental benefit means reducing the amount of surplus emission reductions generated for use in the EIP by at least 10 percent. In addition, environmental benefit can also mean improved administrative mechanisms (e.g., that achieve emissions reductions from sources not readily controllable through traditional regulation), reduced administrative burdens on regulatory agencies that result in increased environmental benefits through other regulatory programs, improved emissions inventories that enhance and lend increased certainty to State planning efforts, and the adoption of emission caps which over time constrain or reduce growth-related emissions beyond traditional regulatory approaches.*

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[3] SCAQMD states in its Draft Staff Report that "*U.S. EPA has initially commented that pursuant to U.S. EPA's January 2001 Improving Air Quality with Economic Incentive Programs, a 10 percent environment benefit will likely be required. Staff is continuing to discuss the elements of the B-Cap with U.S. EPA.*" (Draft Staff Report at p. 3-15)

[4] *Id.* at p. 15

[5] *Id.* at p. 18

[6] *Id.* at p. 78

While the EIP Guidance requires demonstration of environmental benefit, the guidance "recognizes that the type of demonstration appropriate will depend on the goals and characteristics of the EIP [being] implemented."[7]

Furthermore, should the B-Cap be considered as a compliance flexibility trading EIP covered by the EIP Guidance, there are other sections of the EIP Guidance which indicate that the environmental benefit associated with a compliance flexibility trading EIP is not required to be a surplus 10% emission reduction, but may be an alternative demonstration as long as the EIP does not cover a nonattainment area that is needing and lacking an attainment demonstration, known as a "NALD area". As discussed below, South Coast AQMD is not an "NALD area" and therefore has flexibility to allow alternatives.

"NALD areas" are defined as follows:

> *Needing and lacking demonstration (NALD)--means a non-attainment area for which a State is currently required under the CAA to submit an SIP for attainment demonstration, but has not done so.*[8]

The SCAQMD has submitted, and EPA has approved, multiple ozone attainment demonstrations for the South Coast Air Basin, including most recently the 2016 Air Quality Management Plan ("2016 AQMP"), which states as follows:

> *The 2016 AQMP demonstrates how and when the South Coast Air Basin, as well as the Coachella Valley, will attain the ozone and PM2.5 standards as "expeditiously as practicable," but no later than the latest statutory attainment date.*[9]

Therefore, the South Coast Air Basin is not a "NALD area" in which an alternative environmental benefit would be prohibited under the EIP Guidance.

Other options for meeting the environmental benefit requirement in the EIP Guidance include the following, some of which are already embedded within the rule framework of the B-Cap and I-Plan as noted in brackets:

- *showing greater or more rapid emission reductions due to trading (e.g., early reductions)* – [The I-Plan for B-Cap Facilities includes a provision for earlier reductions by January 1, 2024 of at least 50% of the total required emission reduction under PR 1109.1 as compared to the schedule for meeting the limits in Tables 1 and 2.]

- *showing other environmental management improvements* – [A Facility that permanently decommissions a Unit and not replacing it with a functionally similar Unit or that reduces its annual throughput or NOx concentration to meet the B-Cap will deliver other important emissions reductions to the South Coast Air Basin beyond NOx, including other criteria pollutants such as VOC, SO_2, and fine particulate matter, as well as benefiting AB-617 communities.]

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[7] *Id.* at p. 56.
[8] *Id.* At p. 168.
[9] 2016 AQMP at p. ES-10.

- *improved administrative mechanisms (for example, your EIP achieves emissions reductions from sources not readily controllable through traditional regulation)*

- *reduced administrative burdens on regulatory agencies that lead to increased environmental benefits through other regulatory programs*

- *improved emissions inventories that enhance and lend increased certainty to State planning efforts*

- *the adoption of emission caps which over time constrain or reduce growth-related emissions beyond traditional regulatory approaches* – [The B-Cap contains restrictions on how new Units are to be added such that a Facility's NOx emissions are less than the Facility's Emission Targets.]

- *for multi-source cap and trade program or a single source cap and trade program, includes a declining cap.*

These provisions make clear that alternative environmental benefits are permissible under the EIP Guidance under certain circumstances. Moreover, some of these alternative environmental benefits allowed for under the EIP guidance are already included in the B-Cap and I-Plan as currently drafted, including an accelerated schedule for achieving the majority of the NOx emissions reductions well in advance of what is otherwise required without a B-Cap. Additionally, collateral emissions reductions in other criteria and toxic air pollutants will result from decommissioning and/or reducing the annual utilization or throughput of equipment to meet the B-Cap that improve emissions inventories, represent an emissions cap that constrains or reduces growth-related emissions, and includes a declining cap.

Therefore, if it is ultimately determined by U.S. EPA that the EIP Guidance does indeed apply to the B-Cap, the B-Cap and I-Plan framework for both early emissions reductions as well as collateral pollutant emissions reductions satisfies this environmental benefit obligation as described above. To ensure the rule credits a Facility for these environmental benefits, MPC proposes a new subparagraph (i)(3)(H) and other rule revisions in Attachment 1 of this letter that require a Facility electing to comply with a B-Cap to demonstrate environmental benefit using allowable options in the EIP Guidance.

2. Regulatory certainty is necessary to demonstrate that emission reduction projects will not trigger Federal New Source Review for PM_{10} or $PM_{2.5}$.

As SCAQMD understands, many of the proposed low NOx BARCT limits under PR 1109.1 cannot be achieved without selective catalytic reduction (SCR). MPC and other stakeholders have previously pointed out that installation of SCR may result in increases in emissions of particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) (PM_{10} and $PM_{2.5}$ collectively referred to as "fine particulate matter") such that the retrofit project could trigger a "major modification" under U.S. EPA's New Source Review (federal NSR) program, and thus require Best Available Control Technology (BACT).[10]

[10] See MPC's Fourth Set of Comments on SCAQMD Revised Draft of Proposed Rule 1109.1-Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Industries (Revision Date December 24, 2020) (dated May 12, 2021). MPC previously provided data from emissions testing using reference test methods at a heater with SCR technology to reduce NOx emissions. The resulting emissions factor for fine particulate matter, when combined with the heater input duty and a lower fine particulate matter emissions factor to represent pre-SCR baseline operations, may result in a significant emissions increase subject to the 40 CFR §52.21 and/or SCAQMD 1325 as a major modification.

In SCAQMD's Preliminary Draft Staff Report for Proposed Amended Rules 1304 and 2005, SCAQMD states:

> *For the purpose of determining federal major NSR applicability, PM and SOx emission increases may be estimated according to the calculations below. The following approach to calcualte [sic] PM and SOx emissions for the purpose of determining NSR applicability has been discussed without opposition with U.S. EPA.*
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> * * *
>
> *The calculation method will be used in lieu of conducting a source test for PM_{10} emissions when a facility submits a permit application for SCR installation or modification.*

SCAQMD also provides an example calculation for determining the ammonium sulfate as fine particulate matter that may form as a result of installing SCR.[11]

For reference, the South Coast Basin is designated in attainment with the PM_{10} NAAQS and is subject to 40 CFR § 52.21 for the Prevention of Significant Deterioration (PSD) permit program. SCAQMD Rule 1325 - Federal $PM_{2.5}$ New Source Review Program – applies to new and modified major sources that trigger the federal NSR threshold for $PM_{2.5}$. Rule 1325 incorporates and adopts U.S. EPA requirements for $PM_{2.5}$, which is designated nonattainment with the $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). Nowhere in Rule 1325 has this alternative calculation method been incorporated, referenced, or proposed to be added as part of PR 1109.1. If PR 1109.1 is approved in its current form and the alternative calculation method for determining fine particulate matter is only referenced in SCAQMD's Draft and Final Staff Report and not incorporated into Rule 1325, MPC is concerned that U.S. EPA cannot accept this alternative calculation method and shall require the use of U.S. EPA test methods that are referenced in Rule 1325 to demonstrate that an SCR project has not exceeded the federal major NSR threshold prior to issuance of the permit to construct.

The significance of having a federal major NSR determination for fine particulate matter is the additional amount of time (multiple years) a Facility would need to complete the permitting process as well as potentially requiring BACT for PM_{10} emissions or lowest achievable emission rate (LAER) for $PM_{2.5}$ emissions. In the case of MPC's Los Angeles Refinery, LAER technology for $PM_{2.5}$ could be a fuel gas sulfur treatment project that would add over $100 million in costs. Moreover, this additional cost to comply with PR 1109.1 has not been considered by SCAQMD in the cost-effectiveness of NOx BARCT.

3. Compliance schedules should be dependent on the issuance date of a Permit to Construct, and not on the date of permit application submittal.

Some of the key compliance deadlines in PR 1109.1 for meeting emissions limits and to complete emissions reduction projects are based on a specified duration of time after the Facility submits its Permit to Construct application instead of being based on a time frame after issuance of a Permit to Construct by the SCAQMD. A Facility cannot commence and complete emissions reduction projects for PR 1109.1 without having a Permit to Construct issued by SCAQMD. There are no deadlines or time frames in PR 1109.1 that SCAQMD must meet for issuing a permit after an application has been submitted. As a result, a Facility may not be able to meet a compliance deadline if SCAQMD does not issue an air permit in a timely manner. Based on historical projects, SCAQMD can take several years to issue a Permit to

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[11] SCAQMD, "Preliminary Draft Staff Report, Proposed Amended 1304 – Exemptions, Proposed Amended Rule 2005 – New Source Review for RECLAIM", http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/regxx/par-1304-and-par-2005/pdsr-par-1304_2005-aug-2021.pdf?sfvrsn=16, pages 2-6 and 2-7

Construct, and the facility has no certainty when the permit will be ultimately issued. Therefore, any deadlines in PR 1109.1 that are currently in the rule language based on permit application submittal dates should be changed to a time frame after issuance of the permit(s). MPC requests the following deadlines and corresponding language be changed or removed in PR 1109.1:

- Subparagraph (g)(2)(I) contains a compliance date for an approved B-Cap that is *"... no later [than] 54 months from South Coast AQMD Permit Application Submittal Date for all other phases of the selected I- Plan option in Table 6 to meet the Phase I, Phase II, or Phase III Facility BARCT Emission Targets."* Since Table 6 already lists compliance dates that are either a specific date or based on permit issuance, this requirement is unnecessary.

- Paragraph (g)(5) requires a Unit complying with certain emission limits in subdivision (d) and that fails to submit a complete permit application by the specified date in PR 1109.1 to *"... meet the applicable Rule 1109.1 Emission Limits no later than 36 months after the South Coast AQMD permit application submittal date."* This provision is effectively requiring a facility to commence construction on projects necessary to meet PR 1109.1 without a Permit to Construct being issued by SCAQMD if the permit is not issued within a certain time frame, thus potentially forcing non-compliance that is outside the facility's control. Other requirements in PR 1109.1 establish when these limits shall be met following issuance of a Permit to Construct. Those should remain in the case that a complete permit application is not submitted by the specified date in PR 1109.1. Paragraph (g)(5) should be removed in its entirety.

Related to the compliance schedule language in subdivision (g), subparagraphs (g)(2)(B) through (G) do not provide a compliance date and are duplicating the required elements in subdivision (i) for Plan submittals. Since subparagraph (g)(2)(A) already references provisions in subdivision (i) and the corresponding compliance date, MPC requests removal of subparagraphs (g)(2)(B) through (G) because they are duplicative and confusing.

4. The compliance date in PR 1109.1 for emission limits with multi-day rolling average periods should be clarified to represent the first day of the rolling average period.

PR 1109.1 contains some emission limits that have multi-day rolling average periods, such as concentration limits on a 7-day rolling average or 365-day rolling average as well as mass emission limits on a 365-day rolling total (i.e., Facility BARCT Emission Target). The compliance date in PR 1109.1 for these longer averaging periods represents the first day of measuring or calculating emissions such that after the last day of the limit's averaging period, the first compliance demonstration is made. For example, Table 6 for I-Plan Option 4 lists a date of January 1, 2024 as the compliance date for meeting the Phase I BARCT Emission Target. The first demonstration of compliance with the tons-per-year BARCT Emission Target will be after December 30, 2024, which is 365 days from January 1, 2024, noting that 2024 is a leap year with 366 days.

This clarification should be made for all multi-day rolling average periods, and MPC recommends adding a definition in subdivision (c) for "Compliance Date" that reflects this. See Attachment 1 for proposed language to define this term.

5. The CO limit overlap provision in paragraph (d)(7) should extend to other CO limits PR 1109.1 in addition to those in Tables 1 and 2

Paragraph (d)(7) requires that a carbon monoxide (CO) emission limit established in a SCAQMD Permit to Operate (PTO) for a Unit continue to meet that PTO limit instead of the CO emission limit *"... specified in Table 1 or Table 2."* SCAQMD has established CO limits in other provisions of PR 1109.1 besides those listed in Table 1 and Table 2 that should also be subject to the overlap provision in paragraph (d)(7). Where these CO limits are generally drawn from Table 1 or Table 2 but are not directly referenced, this may lead to confusion on applicability of the CO limit if paragraph (d)(7) does not specify whether the CO limit in a PTO or PR 1109.1 applies. See subparagraphs (d)(3)(A) through (C) and (d)(4)(A) through (C) for CO limits that do not refer directly to Table 1 or Table 2 and thus are not currently covered by the (d)(7) overlap. Also, the interim CO limits in paragraph (f)(1) in Table 4 should be subject to paragraph (d)(7).

MPC recommends broadening the language in paragraph (d)(7) to clarify that CO emission limits in an applicable PTO limit shall continue to be met in lieu of those in PR 1109.1. See Attachment 1 for proposed revisions to paragraph (d)(7).

Additionally, in regard to CO limits in PR 1109.1, MPC notes the following proposed corrections:

- Paragraph (e)(2) for a B-Cap includes the phrase *"... that elects to meet the NOx and CO emission limits in an approved B-Cap in lieu of meeting Table 1 and Table 2 NOx concentration limits..."*. Under PR 1109.1, a B-Cap is for NOx only and is not also for CO. The term "and CO" must be removed from paragraph (e)(2). This change would make the language consistent with that in paragraph (e)(1) for a B-Plan that does not contain the "and CO" term.

- Paragraph (j)(3) refers to CO emission limits in Table 3. Table 3 does not have CO limits but Table 4 does, so paragraph (j)(3) should instead reference Table 4.

6. Compliance schedule requirements in paragraphs (d)(8) and (d)(9) for Table 1 or Table 2 limits should be incorporated into subdivision (g) (Compliance Schedule) and remove potential conflicts.

Paragraph (d)(8) establishes a schedule to demonstrate compliance with applicable limits in Table 1 or Table 2 that are less than a 365-day averaging period. The schedule is to demonstrate compliance with these limits *"... six months after, either the date the South Coast AQMD Permit to Operate is issued, 36 months after the Permit to Construct is issued or completion of a compliance demonstration source test, whichever is sooner."* However, clauses (g)(1)(B)(i) and (ii) specify different compliance schedules for Table 1 limits, as follows: *"(i) No later than 36 months after a South Coast AQMD Permit to Construct is issued; or (ii) No later than July 1, 2023 if a permit application was not required as specified in subparagraph (g)(1)(A)."* These two schedules conflict and will lead to confusion as to when compliance needs to be demonstrated for Table 1 limits. MPC recommends incorporating paragraphs (d)(8) and (d)(9) as well as other compliance schedule requirements in subdivisions (d) and (e), as applicable, into subdivision (g) titled "Compliance Schedule," such that all compliance schedule requirements are located in one rule subdivision.

Relatedly, it is unclear when a permit application is required or is not required under subparagraph (g)(1)(B)(ii). Generally, a permit application will be needed to incorporate the Table 1 limit, but it is unclear when a permit application is not required. MPC requests regulatory clarification on this issue.

Paragraph (d)(9) establishes a compliance schedule for limits with a 365-day rolling average, but this paragraph does not state which limits this schedule applies to. Although MPC presumes this paragraph is intended to address limits in Table 1 or Table 2, as with paragraph (d)(8), SCAQMD needs to clearly state this. Otherwise, this paragraph could be misconstrued as establishing a compliance schedule for a B-Plan or B-Cap, which have 365-day rolling average limits, instead of the schedule specified in paragraph (g)(2) that explicitly addresses the compliance schedule requirements for a B-Plan or B-Cap. See Attachment 1 for proposed revisions to paragraph (d)(9).

7. PR 1109.1 sets an inappropriate early shutdown deadline for permanently decommissioned units under the B-Cap.

Clause (e)(2)(D)(i), excerpted below, requires that a Unit scheduled to be permanently decommissioned as part of an approved B-Cap surrender the SCAQMD PTO by specified dates.

> *(i) Surrender the South Coast AQMD Permit to Operate no later than the compliance date for Phase I in I-Plan Option 4 and no later than the permit submittal date for all other phases in an approved I-Plan; ...*

This clause specifies that the "compliance date" for Phase I in I-Plan Option 4 is the permit surrender deadline, but SCAQMD uses a term "permit submittal date" as the deadline for the other I-Plan phases. It is unclear whether "permit submittal date" is referring to a permit application by the Facility, a permit issued by SCAQMD, or some other permit-related action. MPC believes that the permit surrender deadline should not be at any time before the compliance date in Table 6 for all of the I-Plan options in order to provide sufficient time to complete projects that may be important to allow for decommissioning of a Unit prior to the compliance date for an I-Plan phase. MPC recommends simply referring to the listed compliance dates in Table 6. See Attachment 1 for proposed revisions to clause (e)(2)(D)(i).

Related to this issue, no description exists in PR 1109.1 or the Draft Staff Report for the process to "surrender" a permit. MPC requests additional clarification on the process to surrender or inactivate a PTO for a permanently decommissioned unit.

Finally, clause (e)(2)(D)(iii) reads as if a Unit cannot be sold to a company that is located within the South Coast Air Basin instead of reflecting the intent that the Unit cannot be operated in the South Coast Air Basin. See Attachment 1 for proposed revisions to clause (e)(2)(D)(iii) to reflect this intent.

8. A BARCT B-Cap fully realizes the emission reduction objectives of PR 1109.1, and demonstration with a B-Cap's BARCT Emission Targets is met by monitoring and reporting of the Facility's actual emissions.

The B-Cap is an alternative compliance option provided for under PR 1109.1 that can also achieve the NOx emission reductions. As SCAQMD notes in its August 2021 Preliminary Draft Report for PR 1109.1 and Proposed Rescinded Rule 1109 (Draft Staff Report), *"The B-Cap achieves the same emission reductions as if the facility complied directly with the proposed NOx limits."*[12] MPC supports the

[12] SCAQMD, "Preliminary Draft Staff Report, Preliminary Draft Proposed Rule 1109.1", http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/pdsr_pr-1109-1_75_day.pdf?sfvrsn=6, page Ex-1.

SCAQMD inclusion of the B-Cap option in paragraph (e)(2) of PR 1109.1 to provide an alternative means of demonstrating equivalent cumulative NOx emissions reductions such that the facility may achieve these emissions reductions in a safer and more cost-effective way. However, SCAQMD includes an additional demonstration in the Implementation Compliance Plan (I-Plan) that requires the facility to show that the planned NOx emissions reduction projects in concert with any other strategies to reduce mass emissions will, prospectively, meet the applicable Emission Target. This additional prospective demonstration is summarized as follows:

1. Select an Alternative BARCT NOx Limit on a concentration basis for every unit, which for heaters and boilers must be on a 24-hour rolling average, per subparagraph (e)(2)(B) of the rule. This value cannot exceed the Maximum Alternative BARCT NOx Limits for a B-Cap in Table 3.

2. Accept a permit limit for the Alternative BARCT NOx Limit for every unit, per subparagraph (e)(2)(C) of the rule.

3. Calculate the Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions (B-Cap Annual Emissions) by requiring, in part, the use of the Alternative BARCT NOx Limit per subparagraph (g)(2)(F) and following the calculation method in Attachment B of the rule at Subsection B-6.1.

4. Demonstrate in an Implementation Compliance Plan (I-Plan) and B-Cap submittal that the prospective B-Cap Annual Emissions, which incorporates and uses the Alternative BARCT NOx Limit for each unit and other strategies to reduce mass emissions, will not exceed the Emission Targets per subparagraph (g)(2)(G) and by the phased schedule for the chosen I-Plan option. The I-Plan is an additional requirement of the facility that elects to meet a B-Cap. The I-Plan is *"designed to maximize early emissions reductions, where feasible"* to meet each phase of the mass emission targets by deadlines established in Table 6 of PR 1109.1.[13]

The requirement to institute a unit-specific concentration limit such as an Alternative BARCT NOx Limit may be appropriate for the BARCT Equivalent Compliance Plan (B-Plan), which is a separate compliance option from the B-Cap that is based on establishing alternative NOx concentration limits. Conversely, a B-Cap is based on annual mass emissions from the units, which is a function of both the annual average NOx concentration and firing rates of each unit. Instituting a 24-hour average maximum NOx concentration for heaters and other units has no direct coupling to actual sustained emissions, since the 24-hour restricted maximum concentration is based on established worst-case conditions (highest design NOx concentration) that may occur over the course of the normal operating envelope of the emissions unit and control device. MPC's February 1, 2021 comment letter provides details on the inherent variability in NOx concentrations at a heater as well as variable firing rates that materially affect sustained actual emissions. Using a 24-hour maximum concentration to calculate an annual emissions rate for every unit will, by itself, result in a vastly unrealistic overestimate of the facility's future emissions.

For this reason, the Alternative BARCT NOx Limit should not be used solely to calculate the B-Cap Annual Emissions as other variables are important to calculate emissions. The calculation method for the facility's B-Cap Annual Emissions in Attachment B at Subsection B-6.1, excerpted below, allows the incorporation of "emissions reductions from reduced throughput, efficiency, reduced capacity, and any

[13] SCAQMD, "Preliminary Draft Staff Report, Preliminary Draft Proposed Rule 1109.1" http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/pdsr_pr-1109-1_75_day.pdf?sfvrsn=6, page Ex-1

other strategy to reduce mass emissions." A facility should not be penalized for operating at NOx concentration levels that are lower than the 24-hour Alternative BARCT NOx Limit at its heaters and other units when it is able to practically do so and when operating conditions allow. This and other related strategies to reduce annual NOx emissions is an important and necessary element of the B-Cap Annual Emissions calculation that would be considered in the "(Throughput or Other Reductions)" aspect of the equation.

$$\text{Phase I BARCT B} - \text{Cap Annual Emissions}_{B-Cap} = \sum_{i=1}^{N} \left(\frac{C_{\text{Phase I Alternative BARCT Emission Limit}}}{C_{\text{Baseline}}} \times \text{Baseline Unit Emissions} \right)_i + (0_{\text{Decommissioned Units}})_i - (\text{Throughput or Other Reductions})$$

Where:

N = Number of included units in B-Cap under Phase I

$C_{\text{Phase I Alternative BARCT Emission Limit}}$ = The applicable Alternative BARCT NOx Limit in an approved B-Cap for unit i included in the B-Cap

C_{Baseline} = Representative NOx Concentration as defined in subdivision (c) for unit i included in the B-Cap

Baseline Unit Emissions = Baseline Unit Emissions as defined in subdivision (c) and for unit i included in the B-Cap

Throughput or Other Reductions = Emission reductions occurred from other than reducing the concentration limit.

For planning purposes in the B-Cap submittal, an appropriate and representative calculation of B-Cap Annual Emissions is based on the firing rate and concentration of each unit that incorporates emissions reductions projects and other strategies to reduce mass emissions. This basic demonstration of future emissions scenario(s) is not the means for which compliance with the Emission Targets is ultimately met, but rather it serves as a means of SCAQMD reviewing and approving the B-Cap and I-Plan for implementation. Compliance with the B-Cap as a practical matter is a matter of the facility showing that its actual NOx emissions are less than the applicable Emission Targets. MPC requests that the SCAQMD document their agreement that the "(Throughput or Other Reductions)" aspect of the equation above can include a variety of different means to achieve the Emission Targets, including operating at lower annual-average emissions levels.

9. The 24-hour rolling average associated with PR 1109.1 NOx concentration limits for boilers and process heaters is not reasonable as it is not representative of inherent operational variability associated these units.

Maximum NOx concentration limits are established in PR 1109.1 for boilers and process heaters on a 24-hour rolling average. These limits and the associated short-term averaging period are not proven and/or are infeasible for some refinery heaters. Burner manufacturers generally base their NOx emissions specifications and guarantees on set operating conditions, including combustion air temperature, fuel gas composition, and excess air going to the burner(s). Refineries have dynamic operating conditions and it is

common for process heaters to run at a wide operating envelope that deviate from the ideal set of conditions that are used for burner NOx concentration specifications.

Over a longer averaging period like a 365-day rolling average, the heater's operating conditions may more closely align with those presumed by the burner manufacturer in establishing the NOx emissions guarantee, but a 24-hour rolling average limit may not always be met when there are hydrogen and other compositional and heating value fluctuations in refinery fuel gas, changes in oxygen content within the heater, or other real-world variabilities in operating conditions that can cause the NOx concentration to increase above the limit in the short-term. MPC proposes that the averaging period for NOx concentration limits at boilers and process heaters be changed from 24-hour rolling average to 365-day rolling average.

10. SCAQMD's approval process for an I-Plan, B-Plan, and B-Cap should be granted to the Facility if the information described in paragraph (i)(4) is provided.

Paragraph (i)(4) and its references to paragraphs (i)(1) through (3) contain the prescriptive informational elements for the Facility to provide in an I-Plan, B-Plan, or B-Cap to be approved by SCAQMD. Paragraph (i)(4) provides for SCAQMD to approve or disapprove the I-Plan, B-Plan, or B-Cap based on whether the owner or operator demonstrates that certain requirements have been met. In general, the information required in these plans are prescriptive in nature, consisting of data and calculations, such that SCAQMD should not disapprove a Plan submittal if it contains this information. However, per subparagraph (i)(4)(C), the Facility gets only one opportunity to correct any deficiencies and re-submit a Plan, and then if SCAQMD disapproves the Plan, the Facility must comply with the schedule in paragraph (g)(1) which excludes the alternative compliance demonstration of a B-Plan or B-Cap. This mandatory and stringent off-ramp from a B-Plan or B-Cap to instead meet the Table 1 limits is unworkable to a Facility that has made long-term plans to meet one of these alternative compliance methods. MPC proposes changes to paragraph (i)(4) in Attachment 1 of this letter that:

- Provides SCAQMD 30 days to conduct an initial administrative completeness review of the Plan(s);
- Clarifies SCAQMD shall not disapprove a Plan if the Facility provides the required information in the rule;
- Removes the mandatory off-ramp for a Facility to meet the compliance schedule in paragraph (g)(1) instead of (g)(2); and
- Subjects an I-Plan, B-Plan, or B-Cap to Rule 221 – Plans.

MPC has also included in Attachment 1 of this letter proposed corrections and updates to subdivision (i) to address other updates, as summarized below:

- New subparagraphs (i)(1)(A), (i)(2)(A), and (i)(3)(A) are introduced to clarify if multiple Facilities are covered in a single I-Plan, B-Plan, and B-Cap due to being under the same ownership.
- Subparagraphs (i)(1) and (i)(3) should reference the BARCT Equivalent Mass Emissions Cap for the B-Cap instead of the Alternative NOx BARCT Limit for a B-Plan as the key approach to address equivalent emissions reductions under PR 1109.1.

- Subparagraph (i)(1)(D) is duplicative of subparagraph (i)(1)(F) and should be removed.

- Subparagraph (i)(1)(F) references the wrong citation for specification of the I-Plan option, so this reference has been updated.

- Subparagraph (i)(3)(D), shown as subparagraph (i)(3)(E) in Attachment 1 of this letter, restricts reductions in mass emissions to those only associated with a reduction in throughput, but Attachment B at Section B-6 allows for other reductions to be incorporated into the BARCT Annual Emissions calculation. The language in this subparagraph is updated to be consistent with Section B-6.

- Subparagraph (i)(3)(E), shown as subparagraph (i)(3)(F) in Attachment 1 of this letter, incorrectly references the term "BARCT Equivalent Mass Emissions" for a B-Plan instead of the term "BARCT B-Cap Annual Emissions" for a B-Cap.

- Subparagraph (i)(4)(B), shown as subparagraph (i)(4)(D) in Attachment 1 of this letter, allows only 30 days for a Facility to correct deficiencies and resubmit a Plan. MPC requests the more reasonable 60 days instead of 30 days in the event that the deficiencies noted by SCAQMD require additional time to develop new information and prepare a resubmittal.

- Clause (i)(5)(C)(iv) requires a modification to the Plan if an emission reduction project is moved to a different implementation phase or is removed from a phase. The compulsory information required in subparagraph (i)(1) through (4) does not include the time frame for emission reduction projects, so it should not be a criterion for requiring a modification to the Plan. The permitting process is a more appropriate means of addressing changes that involve emission reduction projects.

11. The interim limit for a B-Cap in paragraph (f)(3) requires additional specificity on the compliance time frame.

Paragraph (f)(3), excerpted below, establishes a requirement to maintain emissions in aggregate below the Baseline Facility Emissions.

> *"(3) An owner or operator of a Former RECLAIM Facility that elects to comply with an approved B-Cap shall not operate any unit included in the approved B-Cap unless the NOx emissions for all units in the B-Cap are in aggregate at or below the Baseline Facility Emission."*

MPC requests that SCAQMD clarify the compliance demonstration elements of this rule provision, specifically to: (1) identify the compliance date (also see item 6 regarding compliance dates), (2) stipulate the averaging period (i.e., 365-day rolling average), and (3) clarify when the interim limit is no longer applicable.

12. Certain provisions for time extension requests in subdivision (h) should be adjusted to support timely approvals.

Time extensions for an approved I-Plan may be requested per paragraph (h)(2) under certain listed criteria. MPC requests the following changes that will allow for an improved process to qualify for and be granted time extensions:

- Clause (h)(2)(C)(i) allows an owner or operator to apply for a time extension if it took 24 months for SCAQMD to issue a permit after submittal of a permit application. MPC requests that this time frame be changed from 24 to 18 months to provide a more reasonable permitting time frame for projects needed to meet PR 1109.1.

- Paragraph (h)(4) allows SCAQMD 60 days to act on a time extension request. MPC requests that this time frame be changed to 30 days in order to provide sufficient time for an owner or operator to respond to any deficiencies noted by SCAQMD in a Plan submittal before a compliance deadline.

- Paragraph (h)(7) lists two deadlines for a Facility to meet emission limits if a time extension is disapproved. MPC proposes to add the phrase "whichever is later" at the end to provide certainty on the applicable deadline.

13. Key averaging time and testing schedule requirements in the emissions testing provisions need to be revised.

MPC offers the following proposed changes to address concerns with the testing provisions in subdivision (k).

- MPC proposes a new subparagraph to address the potential conflict between the source test requirements in Tables 7 and 8 of PR 1109.1 and those in a SCAQMD PTO. See Attachment 1 for new paragraph (k)(3).

- The source test protocol for paragraph (k)(7) requires *"an averaging time of at least 2 hours."* The Draft Staff Report at page 3-23 states that the averaging time is *"no less than 15 minutes but no longer than 2 hours."* MPC proposes to change the language in subparagraphs (k)(7)(A) and (B) to that shown as subparagraphs (k)(8)(A) and (B) in Attachment 1 of this letter, which reflects the draft staff report.

- The timing in subparagraph (k)(7)(A) to submit a source test protocol relative to receiving a Permit to Construct may not be possible, because the Facility may not have sufficient detailed information for a complete protocol if the Unit is still being designed. Similarly, the timing in subparagraph (k)(7)(C) to conduct a source test within 90 days upon approval of the source test protocol may not be possible, because the air pollution control equipment may not be installed and fully operational by that time. To address this, MPC proposes that the source test protocol timing is a function of the source test itself in order to ensure that the unit is operational (e.g., that it has resumed stable operations after completion of an emission reduction project) and is ready for testing. See Attachment 1 for revisions to subparagraphs (k)(7)(A) and (B) which are shown as subparagraphs (k)(8)(A) and (B) in Attachment 1 of this letter.

- MPC proposes to change the deadline for submitting a source test report in paragraph (k)(11) from 60 to 90 days of completion of the source test. Due to the increased number of source testing obligations pursuant to PR 1109.1 and the fact that meeting this requirement is primarily a function of the contracted and SCAQMD-approved source testing firm, an additional 30 days is needed to address the increased workload and potential delays in reporting by a source testing firm.

14. The provision to limit the total amount of NOx emission reductions from decommissioned units to 15% under a B-Cap new unit exemption is unreasonably low.

Subparagraph (e)(2)(F) contains restrictions on adding a new unit under the B-Cap. Of particular concern is clause (e)(2)(F)(iv) that restricts the total amount of NOx reductions from decommissioned units to 15 percent of the Final Phase Facility BARCT Emission Target. From the Draft Staff Report, it appears that this clause is attempting to address SCAQMD's concerns with a unit being replaced with a "functionally similar unit outside the B-Cap".[14] To address this concern, MPC proposes to revise the clause to address units that are decommissioned but not replaced with a functionally similar Unit. Accordingly, this will appropriately delineate between projects that are being completed to satisfy environmental rule obligations and unit replacements. With this restriction in place, MPC believes that the 15% threshold should be higher and it should be based on the Total Facility NOx Emissions Reductions, and not the Final Phase BARCT Emission Target, which compares emission reductions for decommissioned units to total reductions. See Attachment 1 for a proposed revision to clause (e)(2)(F)(iv).

Relatedly, MPC notes that clause (e)(2)(F)(i) refers to *"Equivalent Mass Emission"* instead of *"B-Cap Annual Emissions."* The former term is for a B-Plan and is not applicable to a B-Cap. MPC has updated this clause in Attachment 1 of this letter.

15. The future established NOx limits for small refinery boilers and heaters is not based on BARCT.

SCAQMD includes 5 ppmv and 9 ppmv NOx limits for small refinery boilers and heaters, respectively, at subparagraphs (d)(3)(C) and (d)(4)(C), that take effect in the future. These limits are not based on a current technology that is safe, technically feasible, and cost-effective, which are compulsory elements of a control technology to be considered for BARCT. Instead, SCAQMD states that the limits are based on emerging technologies and that staff *"... will monitor the development of emerging technologies and will include in the Resolution a commitment to report on the status of the emerging technologies in 2029 and conduct a technology assessment if these technologies are not being commercialized."*[15] It is practically impossible to know if a technology will be technically feasible, safe to operate, and cost-effective for small refinery boilers and heaters ten years from now or even further into the future. By establishing such limits in this rulemaking, it goes against the Health & Safety Code that requires technical feasibility and cost effectiveness be demonstrated in order for a control technology to be BARCT.

MPC believes these future limits that are not based on BARCT should be removed from the rule. At the least, MPC recommends that SCAQMD make the future effective date of these limits dependent on the results of SCAQMD's status report in 2029 that addresses whether or not these emerging technologies are technically feasible and cost-effective for BARCT as of 2029 or later.

16. Potential confusion between the RECLAIM transition and B-Cap related limits and associated calculation and monitoring methods needs to be addressed in the rule.

MPC requests clarity as to when a Facility is operating after the effective date of PR 1109.1 but before it becomes a Former RECLAIM Petroleum Refinery. Specifically, PR 429.1 addresses startup and shutdown emissions for PR 1109.1 but only applies to a Former RECLAIM Petroleum Refinery. Until a

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[14] SCAQMD, "Preliminary Draft Staff Report, Preliminary Draft Proposed Rule 1109.1" http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/pdsr_pr-1109-1_75_day.pdf?sfvrsn=6, page 3-10

[15] SCAQMD, "Preliminary Draft Staff Report, Preliminary Draft Proposed Rule 1109.1" http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/pdsr_pr-1109-1_75_day.pdf?sfvrsn=6, page 3-6

Final Determination Notification is issued, it is unclear how a Facility is to address applicable limits that may be in effect for PR 1109.1. Relatedly, compliance with Rules 218.2 and 218.3 for CEMS is not required until a Facility becomes a Former RECLAIM Petroleum Refinery. For any limits in effect under PR 1109.1 at the Facility until it receives a Final Determination Notification, it is unclear if the Facility should follow a different set of CEMS requirements. MPC requests regulatory certainty to address the transition between RECLAIM and PR 1109.1 for compliance monitoring.

17. PR 1109.1 contains other clerical and administrative errors that need to be corrected.

Attachment 1 is a mark-up of PR 1109.1 with proposed changes as described in this letter and as follows:

- The rolling average times in Table 3 that are shown as "24-day" should be "24-hour."
- Capitalize words such as "Unit," "Petroleum Refinery," "Facility," etc., consistently throughout the rule to refer to the term defined in subdivision (c).
- Add in missing words for correct syntax.

Note that Attachment 1 of this letter is a conversion of the Adobe PDF version of PR 1109.1 into Microsoft Word, so the formatting of Attachment 1 is not as exact as shown in the August 20, 2021 version on SCAQMD's website.

For additional clarity, MPC recommends that SCAQMD add rule definitions for acronyms and shortened terms used in the rule such as "BARCT," "RECLAIM," and "O_2." MPC has not included proposed definitions for these terms in Attachment 1.

18. PR 1109.1 needs to reference and incorporate the startup and shutdown provisions in PR 429.1 and revise PR 429.1 so as to appropriately address management of startups and shutdowns.

The proposed PR 1109.1 rule does not reference PR 429.1 or otherwise clarify how startup and shutdown emissions are to be included or excluded for accounting against emission limits. Particularly, PR 1109.1 needs to expressly state that emissions from startups and shutdowns are exempt when determining compliance with the Alternative NOx BARCT Limits and the annual mass emissions against the BARCT Emissions Targets. To remove this ambiguity, MPC requests SCAQMD add a reference or statement in PR 1109.1 excluding the emissions from startup and shutdown events in PR 429.1 for purposes of compliance with emission limits in PR 1109.1.

Regarding the proposed PR 429.1 rule itself, MPC offers the following comments to address multiple startup and shutdown activities that are required for compliance with PR 1109.1. Attachment 2 of this letter is a proposed mark-up of PR 429.1 to reflect MPC's comments.

A. Cogeneration unit electrical testing

Cogeneration units are subject to industry and electrical standards to ensure that the equipment is reliable and in good working order. This includes conducting electrical testing following any upgrades or repairs made to the cogeneration unit's safety and control systems (e.g., protection relay and excitation control systems). These tests are to ensure that the systems have been functionally tested to prevent process safety and reliability issues. Some testing must take place at different electrical loads that can only occur during the startup phase. The testing duration ranges from 4 to 12 hours depending on the complexity of the

testing. As this testing is to ensure the safety and reliability of the system, MPC requests that this testing be categorically excluded from the time limitations in paragraph (d)(2) of PR 429.1 by including the following:

- Add the following exemption as a new subparagraph (g)(1)(E) to paragraph (g)(1): *"electrical testing associated with commissioning of cogeneration control systems following upgrades or repairs."*; and

- Copy the definition of gas turbine from subdivision (c) of PR 1109.1, which incorporates the term "cogeneration."

B. Catalyst maintenance and related activities

MPC offers the following proposed changes to address catalyst maintenance and related activities:

- Paragraph (c)(2) requires that catalyst maintenance for a Unit *"... which has a bypass stack or duct ..."* MPC requests removal of this phrase, since some combustion units have only one stack which is used for both normal operations and for catalyst maintenance activities that bypass the control equipment (i.e., the control equipment is not operable during control equipment maintenance). Paragraph (d)(8) is also revised to align with this definition.

- The proposed definition in paragraph (c)(2) is specific only to catalyst maintenance activities and is not inclusive of other maintenance activities inherently needed for NOx post-combustion control equipment. For example, routine maintenance activities associated with a post-combustion control equipment's ammonia injection system and related components is required, which would impact emissions because ammonia is not being introduced into the control equipment during that time. MPC proposes to revise this definition to include maintenance of ancillary components in NOx post-combustion control equipment.

- Paragraph (d)(7) is an operating requirement for post-combustion control equipment if the temperature of the exhaust gas to the inlet of the control equipment *"... is greater than or equal to the minimum operating temperature."* Operating temperature fluctuates during startup, and MPC has observed from its operations that the minimum temperature may be initially reached for a very short duration and then fall below that minimum temperature before again rising to a minimum temperature until the stabilized minimum temperature is reached. For this reason, MPC requests that the aforementioned phrase be changed to *"... is greater than or equal to the minimum operating and stable temperature."*

- Subparagraph (d)(8)(D) requires documentation from a manufacturer of the *"minimum safe operating rate for the unit being bypassed."* The minimum safe operating rate for a Unit is a function of process safety management reviews by operations and safety staff and the application of MPC's operational safety policies and procedures to a Unit. Manufacturers will not know or have documentation of the minimum safe operating rate for a Unit. MPC requests deletion of this subparagraph.

C. Gas turbines with NOx post-combustion control equipment

Gas turbines with NOx post-combustion control equipment have issues that are similar to boilers and process heaters with respect to the necessary time allowance to meet NOx emission limits. MPC requests

that Table 1 of PR 429.1 be changed such that a gas turbine with NOx post-combustion control equipment is subject to the same 48-hour time allowance as boiler and process heaters with NOx post-combustion control equipment.

D. Two-hour duration limit in Table 1 for process heaters

Based upon a review of its procedures and practices, MPC has determined that the startup and shutdown duration limit of two hours in Table 1 is insufficient for process heaters. It is unclear in the corresponding Draft Staff Report how this hourly limit was established. From MPC's experience it is unrealistic for several process heaters that do not have post-combustion NOx control equipment to reach stable conditions in two hours such that the NOx emissions controls (i.e., ultra-low NOx burners) can effectively meet the emission limits in PR 1109.1. For example, some heaters inherently require slower warming to avoid damaging downstream equipment affected by temperature changes and thus need more than 2 hours to start up. Also, heaters with natural draft systems or several dozen burners that need to be lit during startup will make control of excess oxygen difficult at low and fluctuating firing rates, which causes higher NOx concentrations until stable conditions are reached. To ensure MPC is allotted sufficient time to allow for safe and steady startup, MPC requests additional consultation with SCAQMD to support an appropriate increase to the 2-hour duration limit currently proposed in Table 1 for process heaters.

19. PR 1304 should further clarify in the rule language that BACT exemption is allowed for equipment replacements across categories of equipment.

MPC appreciates SCAQMD's consideration for including a limited exemption from BACT requirements for PM_{10} and SO_X emissions from projects that are implemented to comply with the PR 1109.1 requirements. This is important for allowing projects that will be completed for PR 1109.1 compliance to be permitted efficiently and implemented in a cost-effective manner. While the language in PR 1304(f)(1)(B) appears to allow for the exemption to apply to equipment to be replaced with other equipment across different source categories, there are some references in the associated PR 1304 Draft Staff Report indicating that equipment can only be replaced within the same source category (e.g., boilers replacing boilers).[16] For projects that involve replacement of equipment across source categories (e.g., boilers replacing co-generation units) that is functionally similar and does not increase the cumulative total maximum rated capacity, the rule language and staff report should be updated to reflect that the limited BACT exemption in PR 1304(f)(1) can be used. MPC has provided suggested rule language changes in Attachment 1 of this letter.

20. PR 1304 (f)(1)(B) should allow for a longer period for replaced equipment to be operated at the same time consistent with federal requirements

Subparagraph (f)(1)(B) of PR 1304 currently states that *"For the new and/or modified permit unit(s) and the permit unit(s) being replaced, a maximum of 90 days is allowed as a startup period for simultaneous operation."* The length of time allowed for simultaneous operation of replacement units should be adjusted to align with the requirements of 40 CFR § 51.165(a)(1)(vi)(F) which allows a 180-day transition period for replacement units. This is a more appropriate time period when units are being replaced. PR 1304(f)(1)(B) should be adjusted to align with 40 CFR § 51.165(a)(1)(vi)(F).

[16] SCAQMD, "Preliminary Draft Staff Report, Proposed Amended 1304 – Exemptions, Proposed Amended Rule 2005 – New Source Review for RECLAIM" http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/regxx/par-1304-and-par-2005/pdsr-par-1304_2005-aug-2021.pdf?sfvrsn=16, page 2-2

Conclusion

MPC provides these comments to the Preliminary Draft Proposed Rule 1109.1 and related proposed and proposed amended rules issued August 20, 2021 to address critical deficiencies and needed clarifications.

Please note that in submitting this letter, MPC reserves the right to supplement its comments as it deems necessary, especially if additional or different information is made available to the public regarding the Proposed Rule 1109.1 rulemaking process.

Thank you for the opportunity to provide comments. We are glad to discuss further and look forward to continued dialogue.

Sincerely,

Brad Levi
Vice President – Los Angeles Refinery

Attachments

cc: ***SCAQMD***
Sarah Rees – Deputy Executive Officer
Susan Nakamura – Assistant Deputy Executive Officer
Michael Krause – Planning and Rules Manager

cc: ***SCAQMD Governing Board***
Hon. Ben Benoit – Governing Board Chair
Hon. Lisa Bartlett – Governing Board Member
Hon. Joe Buscaino – Governing Board Member
Hon. Michael Cacciotti – Governing Board Member
Hon. Vanessa Delgado – Governing Board Vice-Chair
Hon. Gideon Kracov – Governing Board Member
Hon. Sheila Kuehl – Governing Board Member
Hon. Larry McCallon – Governing Board Member
Hon. Veronica Padilla-Campos – Governing Board Member
Hon. V. Manuel Perez – Governing Board Member
Hon. Rex Richardson – Governing Board Member
Hon. Carlos Rodriguez – Governing Board Member
Hon. Janice Rutherford – Governing Board Member

ecc: 2021-09-17 MPC 75 Day Comment Letter on Revised Draft of SCAQMD PR 1109.1
Ruth Cade, MPC RE
Chris Drechsel, MPC RE
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Attachment 1

Proposed changes to PR 1109.1 (August 20, 2021 version)

(Adopted TBD)
Revision Date 8-20-21

PROPOSED RULE 1109.1. EMISSIONS OF OXIDES OF NITROGEN FROM PETROLEUM REFINERIES AND RELATED OPERATIONS

(a) Purpose

The purpose of this rule is to reduce emissions of oxides of nitrogen (NOx), while not increasing carbon monoxide (CO) emissions, from ~~units~~Units at ~~petroleum refineries~~a Petroleum Refineries and ~~facilities~~Facilities with ~~related operations~~Related Operations to ~~petroleum refineries~~Petroleum Refineries.

(b) Applicability

The provisions of this rule shall apply to an owner or operator of ~~units~~Units at ~~petroleum refineries~~Petroleum Refineries and ~~facilities~~Facilities with ~~related operations~~Related Operations to ~~petroleum refineries~~Petroleum Refineries.

(c) Definitions

(1) ALTERNATIVE BARCT NOx LIMIT FOR PHASE I, PHASE II, ~~OR~~AND PHASE III means the ~~unit~~Unit specific NOx concentration limit that is selected by the owner or operator of a Facility to achieve the Phase I, Phase II, or Phase III Facility BARCT Emission Target in the aggregate in the B-Plan or B-Cap, where the NOx concentration limit will include the corresponding percent O_2 correction and determined based on the averaging time in Table 1 or subdivision (k), whichever is applicable. ~~subdivision (k), whichever is applicable.~~

(2) ASPHALT PLANT means a ~~facility~~Facility that processes crude oil into asphalt.

(3) BASELINE FACILITY EMISSIONS means the sum of all the Baseline Unit Emissions at a Facility as calculated according to Attachment B of this rule.

(4) BASELINE UNIT EMISSIONS means a Unit's emissions as reported in the 2017 NOx Annual Emissions Report, or another representative year, as approved by the Executive Officer.

(5) BARCT EQUIVALENT COMPLIANCE PLAN (B-PLAN) means a compliance plan that allows an owner or operator to select NOx concentration limits for all Units subject to this rule that are equivalent, in aggregate, to the NOx concentration limits specified in Table 1 and Table 2.

(6) BARCT EQUIVALENT MASS CAP PLAN (B-CAP) means a compliance

plan that establishes a mass emission cap for all ~~units~~Units subject to this rule

that, in aggregate, are equivalent to or less than the Final Phase Facility BARCT Emission Target.

(7) BIOFUEL PLANT means a Facility that produces fuel by processing feedstocks including vegetable oil, animal fats, and tallow.

(8) BOILER means any Unit that is fired with gaseous fuel and used to produce steam. For the purpose of this rule, boiler does not include CO boilers.

(9) CO BOILER means a boiler with an integral waste heat recovery system used to oxidize CO-rich waste gases generated by the FCCU.

(10) COMPLIANCE DATE means the date at which the Facility shall begin to quantify emissions as required by this rule. The first period for compliance with an applicable emissions limit occurs after the date following the compliance date and the averaging period of the limit.

~~(10)~~(11) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) is as defined by Rule 218 – Continuous Emission Monitoring.

~~(11)~~(12) DUCT BURNER means a device in the heat recovery steam generator of a Gas Turbine that combusts fuel and adds heat energy to the gas turbine exhaust.

~~(12)~~(13) FACILITIES WITH RELATED OPERATIONS TO PETROLEUM REFINERIES includes Asphalt Plants, Biofuel Plants, Hydrogen Production Plants, ~~petroleum coke calcining facilities~~Petroleum Coke Calcining Facilities, Sulfuric Acid Plants, and Sulfur Recovery Plants.

~~(13)~~(14) FACILITIES WITH THE SAME OWNERSHIP means Facilities and their subsidiaries, Facilities that share the same board of directors, or Facilities that share the same parent corporation.

~~(14)~~(15) FACILITY or FACILITIES means, for the purpose of this rule, any ~~unit~~Unit or group of ~~units~~Units which are located on one or more contiguous properties, in actual physical contact or separated solely by a public roadway or other public right-of-way, and operate under one South Coast AQMD Facility ID or Facilities with the Same Ownership.

~~(15)~~(16) FINAL DETERMINATION NOTIFICATION means the notification issued by the Executive Officer to a RECLAIM ~~facility~~Facility designating that the ~~facility~~Facility is no longer in the NOx RECLAIM program.

~~(16)~~(17) FINAL PHASE FACILITY BARCT EMISSION TARGET means the total mass emissions remaining per Facility calculated based on the applicable Table 1 emission limits or Table 2 conditional emission limits and the Baseline Facility Emissions.

~~(17)~~(18) FLARE means, for the purpose of this rule, a combustion device that

oxidizes combustible gases or vapors from tank farms or liquid unloading, where the combustible gases or vapors being destroyed are routed directly

into the burner without energy recovery, and that is not subject to Rule 1118 – Control of Emissions from Refinery Flares.

~~(18)~~(19) FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) means a Unit in which petroleum intermediate feedstock is charged and fractured into smaller molecules in the presence of a catalyst; or reacts with a contact material to improve feedstock quality for additional processing; and the catalyst or contact material is regenerated by burning off coke and other deposits. The FCCU includes, but is not limited to, the riser, reactor, regenerator, air blowers, spent catalyst, and all equipment for controlling air pollutant emissions and recovering heat including a CO boiler.

~~(19)~~(20) FORMER RECLAIM FACILITY means a Facility, ~~or any of~~including its successors, that was in the NOx Regional Clean Air Incentives Market 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.

~~(20)~~(21) FUNCTIONALLY SIMILAR means, for the purpose of this rule, a Unit that will perform the same purpose as a Unit that was permanently decommissioned in an approved B-Cap.

~~(21)~~(22) GAS TURBINE means an internal-combustion engine in which the expanding combustion gases drive a turbine which then drives a generator to produce electricity. Gas Turbines can be equipped with a cogeneration gas turbine that recovers heat from the Gas Turbine exhaust and can include a Duct Burner.

~~(22)~~(23) HEAT INPUT means the heat of combustion released by burning a fuel source, using the Higher Heating Value of the fuel. This does not include the enthalpy of incoming combustion air.

~~(23)~~(24) HIGHER HEATING VALUE (HHV) means the total heat liberated per mass of fuel combusted expressed as British thermal ~~units~~Units (Btu) per pound or cubic feet when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

~~(24)~~(25) HYDROGEN PRODUCTION PLANT means a Facility that produces hydrogen by steam hydrocarbon reforming, partial oxidation of hydrocarbons, or other processes which primarily supplies hydrogen for petroleum refineries and Facilities with Related Operations to Petroleum Refineries.

~~(25)~~(26) IMPLEMENTATION COMPLIANCE PLAN (I-PLAN) means an implementation plan for Facilities with six or more Units that includes an alternative implementation schedule and alternative emission reduction targets.

~~(26)~~(27) I-PLAN PERCENT REDUCTION TARGET means the percent reduction target specified for each phase of an I-Plan as specified in Table 6.

~~(27)~~(28) NATURAL GAS means a mixture of gaseous hydrocarbons, with at least 80 percent methane (by volume), and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the California Public Utilities Commission.

~~(28)~~(29) NEW UNIT means, for the purpose of this rule, any Unit that meets the applicability of subdivision (b) where the South Coast AQMD Permit to Construct is issued on or after [*DATE OF ADOPTION*].

~~(29)~~(30) OXIDES OF NITROGEN (NOx) EMISSIONS means the sum of nitric oxide and nitrogen dioxide emitted in the flue gas, calculated, and expressed as nitrogen dioxide.

~~(30)~~(31) PARTS PER MILLION BY VOLUME (ppmv) means, for the purpose of this rule, milligram of pollutant per liter of dry combustion exhaust gas at standard conditions.

~~(31)~~(32) PETROLEUM COKE CALCINER means a Unit used to drive off contaminants from green petroleum coke by bringing the coke into contact with heated gas for the purpose of thermal processing. The Petroleum Coke Calciner includes, but is not limited to, a kiln, which is a refractory lined cylindrical device that rotates on its own axis, and a pyroscrubber, which combusts large carbon particles in a stream of waste gas.

~~(32)~~(33) PETROLEUM COKE CALCINING FACILITY means a Unit within a Petroleum Refinery, or as a separate Facility, that operates a ~~petroleum coke calciner~~Petroleum Coke Calciner.

~~(33)~~(34) PETROLEUM REFINERY means a Facility identified by the North American Industry Classification System Code 324110, Petroleum Refineries.

~~(34)~~(35) PHASE I, PHASE III, OR PHASE III BARCT B-CAP ANNUAL EMISSIONS means the total NOx mass emissions remaining per Facility that incorporates BARCT Alternative NOx Limits for Phase I, Phase II, and Phase III, permanently decommissioned ~~units~~Units, and other emission reduction strategies to meet the respective Phase I, Phase II, or Phase III Facility BARCT Emission

Targets in an I-Plan and are calculated pursuant to Attachment B of this rule.

~~(35)~~(36) PHASE I, PHASE II, OR PHASE III BARCT EQUIVALENT MASS EMISSIONS means the total NOx mass emissions remaining per Facility that incorporates respective BARCT Alternative NOx Limits for Phase I, Phase II, and Phase III in an approved B-Plan that are designed to meet the respective Phase I, Phase II, or Phase III Facility BARCT Emission Targets in an I-Plan and are calculated pursuant to Attachment B of this rule.

~~(36)~~(37) PHASE I, PHASE II, OR PHASE III FACILITY BARCT EMISSION TARGET means the total NOx mass emissions per Facility that must be achieved in an approved B-Plan or B-Cap that are based on the percent reduction target of Phase I, Phase II, or if applicable, Phase III of an I-Plan option in Table 6 and are calculated pursuant to Attachment B of this rule.

~~(37)~~(38) PROCESS HEATER means any Unit fired with gaseous and/or liquid fuels which transfers heat from combusted gases to water or process streams.

~~(38)~~(39) RATED HEAT INPUT CAPACITY means the maximum heat input capacity, which is the total heat of combustion released by burning a fuel source, as specified by the South Coast AQMD permit.

~~(39)~~(40) REPRESENTATIVE NOx CONCENTRATION means the most representative NOx emissions in the exhaust of the Unit as approved by the Executive Officer and measured by a certified CEMS if the Unit operates with a certified CEMS or the most recent approved source test for ~~units~~Units not operating a certified CEMS. The Representative NOx Concentration for ~~units~~Units that do not have CEMS or source test emission data will be based on the South Coast AQMD Annual Emission Report default emission factor for that Units.

~~(40)~~(41) RULE 1109.1 EMISSION LIMITS mean the NOx and CO emission limits and corresponding percent O_2 correction listed in paragraphs (d)(3),(d)(4), Table 1, Table 2, Table 4, Table 5, an approved B-Plan, or an approved B-Cap.

~~(41)~~(42) STANDARD CONDITIONS for a Former RECLAIM Facility is as defined by Rule 102 – Definition of Terms .

~~(42)~~(43) STEAM METHANE REFORMER (SMR) HEATER means any Unit that is fired with gaseous fuels and transfers heat from the combusted fuel to process tubes that contain catalyst, which converts light hydrocarbons combined with steam to hydrogen.

~~(43)~~(44) SULFURIC ACID FURNACE means a Unit fueled with gaseous fuels and/or hydrogen sulfide gas used to convert elemental sulfur and/or decompose spent sulfuric acid, into sulfur dioxide (SO_2) gas.

~~(44)~~(45) SULFURIC ACID PLANT means a Unit within a Petroleum Refinery, or as a separate Facility, engaged in the production of commercial grades of sulfuric acid, or regeneration of spent sulfuric acid into commercial grades of sulfuric acid.

~~(45)~~(46) SULFUR RECOVERY PLANT means a Unit within a Petroleum Refinery, or as a separate Facility, that recovers elemental sulfur or sulfur compounds from sour or acid gases and/or sour water generated by Petroleum Refineries.

~~(46)~~(47) SULFUR RECOVERY UNITS/TAIL GAS (SRU/TG) INCINERATORS means the thermal or catalytic oxidizer where the residual hydrogen sulfide in the gas exiting the sulfur recovery plant (tail gas) is oxidized to SO_2 before being emitted to the atmosphere.

~~(47)~~(48) UNIT means, for the purpose of this rule, any ~~boilers, flares, FCCUs, gas turbines, petroleum coke calciners, process heaters~~Boiler, Flare, FCCU, Gas Turbine, Petroleum Coke Calciner, Process Heater, SMR ~~heaters, sulfuric acid furnaces~~Heater, Sulfuric Acid Furnace, SRU/TG ~~incinerators~~Incinerator, or ~~vapor incinerators~~Vapor Incinerator requiring a South Coast AQMD ~~permit~~Permit and not required to comply with another NOx emission limit in a South Coast AQMD Regulation XI rule.

~~(48)~~(49) UNIT REDUCTION means the potential NOx emission reduction for a Unit if the Unit's NOx emissions were reduced from the Representative NOx Concentration to the applicable NOx concentration limit in Table 1 based on the Baseline Emissions calculated pursuant to Attachment B of this rule.

~~(49)~~(50) UNITS WITH COMBINED STACKS means two or more Units where the flue gas from these Units are combined in one or more common stack(s).

~~(50)~~(51) VAPOR INCINERATOR means a thermal oxidizer, afterburner, or other device for burning and destroying air toxics, volatile organic compounds, or other combustible vapors in gas or aerosol form in gas streams.

(d) Emission Limits

(1) An owner or operator shall not operate a ~~unit~~Unit that exceeds the applicable NOx and CO emission limits at the percent O_2 correction specified in Table 1 and the averaging time specified in Table 1 or subdivision (k), whichever is applicable pursuant to the compliance

schedule in
subdivision (g).

TABLE 1: NOx AND CO EMISSION LIMITS

Unit	NOx (ppmv)	CO (ppmv)	O2 Correction (%)	Rolling Averaging Time[1]
Boilers <40 MMBtu/hour	Pursuant to paragraph (d)(3)	400	3	24-hour
Boilers ≥40 MMBtu/hour	5	400	3	24-hour
FCCU	2	500	3	365-day
	5			7-day
Flares	20	400	3	2-hour
Gas Turbines fueled with Natural Gas	2	130	15	24-hour
Gas Turbines fueled with Gaseous Fuel other than Natural Gas	3	130	15	24-hour
Petroleum Coke Calciner	5	2,000	3	365-day
	10			7-day
Process Heaters <40 MMBtu/hour	Pursuant to paragraph (d)(4)	400	3	24-hour
Process Heaters ≥40 MMBtu/hour	5	400	3	24-hour
SMR Heaters	5	400	3	24-hour
SMR Heaters with Gas Turbine	5	130	15	24-hour
SRU/TG Incinerators	30	400	3	24-hour
Sulfuric Acid Furnaces	30	400	3	365-day
Vapor Incinerators	30	400	3	24-hour

[1] Averaging times apply to ~~units~~Units operating a certified CEMS and shall be calculated pursuant to Attachment A of this rule. Requirements, including averaging times, for ~~units~~Units without CEMS are specified in subdivision (k).

(2) Conditional NOx and CO Emission Limits

(A) An owner or operator of a ~~unit~~Unit is eligible to meet the NOx and CO emission limits in Table 2, in lieu of the NOx and CO emission limits in Table 1 provided:

(i) The Executive Officer has not issued a Permit to Construct on or after December 4, 2015 for the installation of a post combustion control device for the ~~unit~~Unit;

(ii) For a ~~process heater~~Process Heater with a ~~rated heat input capacity~~Rated Heat Input Capacity greater than or equal to 40 MMBtu/hour and less than 110 MMBtu/hour or less, the Unit Reduction calculated pursuant ~~to~~ Attachment B of this rule is less than 10 tons per year based on the applicable Table 1 NOx emission limit;

(iii) For boilers or process heaters with a Rated Heat Input Capacity greater than 110 MMBtu/hour, the Unit Reduction calculated pursuant to Attachment B of this rule is less than 20 tons per year based on the applicable Table 1 NOx emission limit;

(iv) The South Coast AQMD Permit to Construct or South Coast AQMD Permit to Operate for the ~~unit~~Unit does not have a condition that limits the NOx concentration to a level at or below the applicable Table 1 NOx emission limit;

(v) The Representative NOx Concentration of the ~~unit~~Unit is not below the applicable Table 1 NOx emission limit; and

(vi) The ~~unit~~Unit is not identified as being permanently decommissioned in an approved B-Plan for reductions in an I-Plan or approved B-~~—~~Cap pursuant to subparagraph (e)(1)(D) or (e)(2)(D).

(B) An owner or operator that meets the conditions in subparagraph (d)(2)(A) that elects to meet the NOx and CO emission limits in Table 2 in lieu of the NOx and CO emission limits in Table 1 shall:

(i) Before July 1, 2022, submit a complete South Coast AQMD permit application to apply for a permit condition that limits the NOx emissions to the applicable levels specified in Table 2; and

(ii) No later than 18 months after the South Coast AQMD Permit to Construct is issued, meet the NOx and CO emission limits

at the percent O_2 correction and the averaging time specified in Table 2 or subdivision (k), whichever is applicable.

(C) Notwithstanding subparagraph (d)(2)(A) and (d)(2)(B), an owner or operator shall meet the Conditional NOx and CO Emission Limits in Table 2 in lieu of the NOx and CO Emission Limits in Table 1 if:

(i) The owner or operator is submitting a B-Plan or a B-Cap, and their ~~unit~~Unit is listed in Table D-1;

(ii) The owner or operator is submitting a B-Cap and has selected I-Plan Option 4, and their ~~unit~~Unit is listed in Table D-2.

TABLE 2: CONDITIONAL NOx AND CO EMISSION LIMITS

Unit	NOx (ppmv)	CO (ppmv)	O_2 Correction (%)	Rolling Averaging Time[1]
Boilers >110 MMBtu/hour	7.5	400	3	24-hour
FCCUs	8	500	3	365-day
	16			7-day
Gas Turbines fueled with Natural Gas	2.5	130	15	24-hour
Process Heaters 40 – ~~10~~110 MMBtu/hour	18	400	3	24-hour
Process Heaters >110 MMBtu/hour	22	400	3	24-hour
SMR Heaters	7.5	400	3	24-hour
Vapor Incinerators	40	400	3	24-hour

[1] Averaging times apply to ~~units~~Units operating a certified CEMS and shall be calculated pursuant to Attachment A of this rule. Requirements, including averaging times, for ~~units~~Units without CEMS are specified in subdivision (k).

(3) Boilers with Rated Heat Input Less Than 40 MMBtu/hour

An owner or operator of a boiler with a rated heat input capacity less than 40 MMBtu/hour shall:

(A) Before January 1, 2023, have a South Coast AQMD Permit that includes an enforceable emission limit that does not exceed 40 ppmv NOx and 400 ppmv CO at three percent O_2 correction and limits the

averaging times to Table 1 or subdivision (k), whichever is applicable.

(B) On and after January 1, 2023, not operate a boiler that exceeds 40 ppmv NOx and 400 ppmv CO at three percent O_2 correction as demonstrated pursuant to the averaging times in Table 1 or subdivision (k), whichever is applicable; and

(C) No later than six months after an owner or operator cumulatively replaces either 50 percent or more of the burners in a boiler or replaces burners that represent 50 percent or more of the heat input in a boiler, where the cumulative replacement begins from July 1, 2022, shall:

(i) Submit a complete South Coast AQMD permit application to impose a 5 ppmv NOx emission limit and a 400 ppmv CO emission limit at three percent O_2 correction that limits the averaging times to Table 1 or subdivision (k), whichever is applicable; and

(ii) Meet the emission limits pursuant to clause (d)(3)(C)(i) no later than 36 months after a South Coast AQMD Permit to Construct is issued.

(4) Process Heaters with Rated Heat Input Less Than 40 MMBtu/hour–

~~(4)~~ An owner or operator of a process heater with a rated heat input capacity less than 40 MMBtu/hour shall:

(A) Before January 1, 2023, have a South Coast AQMD Permit that includes an enforceable emission limit that does not exceed 40 ppmv NOx and 400 ppmv CO at three percent O_2 correction and limits the averaging times to Table 1 or subdivision (k), whichever is applicable;

(B) On and after January 1, 2023, not operate a process heater that exceeds 40 ppmv NOx and 400 ppmv CO at three percent O_2 correction as demonstrated pursuant to the averaging times in Table 1 or subdivision (k), whichever is applicable; and

(C) Effective [*TEN YEARS AFTER DATE OF ADOPTION*], no later than six months after an owner or operator cumulatively replaces either 50 percent or more of the burners in a process heater or replaces burners that represent 50 percent or more of the heat input

in a process heater, where the cumulative replacement begins from [*FIVE YEARS AFTER DATE OF ADOPTION*], shall:

~~(i)~~ Submit a complete South Coast AQMD permit application to impose a ~~9ppmv~~9 ppmv NOx emission limit and a 400 ppmv CO

(i) emission limit at three percent O_2 correction and limits the averaging times to Table 1 or subdivision (k), whichever is applicable; and

~~applicable; and~~

(ii) Meet the emission limits pursuant to clause (d)(4)(C)(i) no later than 36 months after a South Coast AQMD Permit to Construct is issued.

(5) Gas Turbines

Notwithstanding the NOx emission limits in Table 1, an owner or operator shall not operate a gas turbine that exceeds 5 ppmv NOx corrected to 15 percent O_2 ~~correction~~ based on a 24-hour rolling average during natural gas curtailment periods, where there is a shortage in the supply of pipeline natural gas due solely to supply limitations or restrictions in distribution pipelines by the utility supplying the gas, and not due to the cost of natural gas, provided:

(A) A daily gas turbine operating record is maintained that includes the actual start and stop time, total hours of operation, and type (liquid or gas) and quantity of fuel used; and

(B) This information is available to South Coast AQMD staff upon request for at least five years from the date of entry.

(6) An owner or operator of ~~units~~Units with ~~combined stacks~~Combined Stacks shall be subject to the most stringent applicable Table 1 or Table 2 NOx and CO emission limit at the percent O2 correction based on the averaging time in Table 1 or subdivision (k), whichever is applicable.

(7) An owner or operator of a ~~unit~~Unit with a CO emission limit in a South Coast AQMD Permit to Operate that was established before [DATE OF ADOPTION], shall meet the CO emission limit in the South Coast AQMD Permit to Operate in lieu of the CO emission limit specified in ~~Table 1 or Table 2.~~subdivisions (d) through (f).

(8) An owner or operator of a ~~unit~~Unit with an averaging time less than 365-day in Table 1 or Table 2 that operates a CEMS shall be required to demonstrate compliance with the applicable NOx emission limits in Table 1, Table 2, an approved B-Plan, or an approved B-Cap six months after~~, either~~ the date the South Coast AQMD Permit to Operate is issued, 36 months after the Permit to Construct is issued, or completion of a compliance demonstration source test, whichever is sooner.

(9) An owner or operator of a ~~unit~~Unit subject to a 365-day rolling average in Table 1 or Table 2 shall demonstrate compliance with the Rule 1109.1 Emission Limits beginning 14 months after either the date the South Coast AQMD Permit to Operate is issued, 36 months after the Permit to Construct is issued, or completion of a compliance demonstration source test, whichever is sooner.

(e) B-Plan and B-Cap Requirements

(1) An owner or operator of a ~~facility~~Facility with six or more ~~units~~Units that elects to meet the NOx emission limits in an approved B-Plan in lieu of meeting Table 1 or Table 2 NOx emission limits shall:

(A) Before July 1, 2022, submit ~~an~~a South Coast AQMPD Permit to Construct application for a B-Plan that includes all ~~units~~Units subject to this rule, with the exception of any boiler or process heater less than 40 MMBtu/hour that will meet the NOx limit specified in subparagraph (d)(3)(C) or (d)(4)(C) after the last Compliance Date in Table 6 for the selected I-Plan option, for review and approval pursuant to subdivision (i);

(B) Select an Alternative BARCT NOx Limit for Phase I, Phase II, and Phase III to meet the respective Phase I, Phase II, and Phase III BARCT Equivalent Mass Emissions where the Alternative BARCT NOx Limit shall not exceed:

(i) The Conditional NOx and CO limit in Table 2, for any ~~unit~~Unit that is meeting a Conditional NOx and CO Emission Limit pursuant to subparagraphs (d)(2)(A) and (d)(2)(B).

(C) Comply with a condition in the South Coast AQMD Permit to Operate that limits the NOx concentration to the Alternative BARCT NOx Limit Phase I, Phase II, and if applicable Phase III for each ~~unit~~Unit in the approved B- Plan based on the schedule

established in the approved I-Plan;

(D) Not include ~~emission reductions~~Emission Reductions for any ~~unit~~Unit that is permanently decommissioned; and

(E) Not operate a ~~unit~~Unit that exceeds the Alternative BARCT NOx Limit, CO emission limit, based on the averaging time in Table 1 or ~~the~~ subdivision (k), whichever is applicable, in an approved B-Plan, based on the implementation schedule in the approved I-Plan.

(2) An owner or operator of a ~~facility~~Facility with six or more ~~units~~Units that elects to meet the NOx ~~and CO~~ emission limits in an approved B-Cap in lieu of meeting Table 1 and Table 2 NOx concentration limits shall:

(A) Before July 1, 2022, submit a B-Cap and an I-Plan to the Executive Officer that ~~includes~~include all ~~units~~Units subject to this rule, with the exception of any ~~boiler~~Boiler or ~~process heater~~Process Heater with a Rated Heat Heat Input Capacity less than 40 MMBtu/hour, that will meet the NOx limit specified in subparagraph (d)(3)(C) or (d)(4)(C) after the last ~~Compliance Date~~compliance date in Table 6 for the selected I-Plan option, for review and approval pursuant to subdivision (i);

(B) Select an Alternative BARCT NOx Limit for Phase I, Phase II, and Phase III to meet the respective Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions where the Alternative BARCT NOx Limit shall not exceed;

(i) The Maximum Alternative BARCT NOx Limit for the applicable ~~unit~~Unit, specified in Table 3; and

(ii) The Conditional NOx ~~and CO~~ limit in Table 2, for any ~~unit~~Unit that is meeting a Conditional NOx ~~and CO Emission Limit~~limit pursuant to subparagraphs (d)(2)(A) or (d)(2)(B).

(C) Comply with a condition in the South Coast AQMD Permit to Operate that limits the NOx concentration to the Alternative BARCT NOx Limit for Phase I, Phase II, and if applicable Phase III for each ~~unit~~Unit in the approved B-Cap based on the schedule established in the approved I-Plan;

(D) For any ~~unit~~Unit that is permanently decommissioned, represent the permanently decommissioned ~~unit~~Unit as Table 1 NOx emissions in the Phase I, Phase II, or Phase III Facility BARCT Emission Target in an approved B-Cap, and for the ~~unit~~Unit that is permanently decommissioned the owner or operator shall:

(i) Surrender the South Coast AQMD Permit to Operate no later than the compliance date ~~for~~ in Table 6 corresponding to

Phase I ~~in I-Plan Option 4 and no later than~~, Phase II, or Phase III as specified in the ~~permit submittal date for all other phases in an~~ approved I-Plan for permanently decommissioning the Unit;

(ii) Disconnect and blind the fuel line(s) on or before the South Coast AQMD Permit to Operate is surrendered pursuant to clause (e)(2)(D)(i); and

(iii) Not sell the ~~unit for operation~~ Unit to another entity for operation within the South Coast Air Basin;

(E) Not operate any ~~unit~~Unit unless the NOx emissions for all ~~units~~Units in the approved B-Cap are in aggregate at or below the applicable Phase I, Phase II, or Phase III Facility BARCT Emission Target, based on the schedule in the approved I-Plan; and

(F) Not add a new ~~unit~~Unit that will be subject to this rule that increases the ~~facility~~Facility emissions above applicable Phase I, Phase II, or Phase III Facility BARCT Emission Target, unless:

(i) All ~~units~~Units in the approved B-Cap meet the ~~Equivalent Mass Emission~~B-Cap Annual Emissions;

(ii) The new ~~unit~~Unit is not functionally similar to any ~~unit~~Unit that was permanently decommissioned in the approved B-Cap;

(iii) The new ~~unit~~Unit will not increase overall ~~facility~~Facility throughput; and

(iv) The total amount of NOx emission reductions from ~~units~~Units that were permanently decommissioned and not replaced with functionally similar Units, represents ~~15~~40 percent or less of ~~Final Phase Facility BARCT Emission Target~~Total Facility NOx Emission Reduction in an approved B-~~-~~Cap.

TABLE 3: MAXIMUM ALTERNATIVE BARCT NOX LIMITS FOR A B-CAP

Unit	Maximum Alternative BARCT NOx Limit	O_2 Correction (%)	Rolling Averaging Time[1]
Boilers and Process Heaters <40 MMBtu/hour	40 ppmv	3	24-~~day~~hour
Boilers and Process Heaters ≥40 MMBtu/hour	50 ppmv	3	24-~~day~~hour
FCCUs	8 ppmv	3	365-day
	16 ppm		7-day
Gas Turbines	5 ppmv	15	24-

			~~day~~hour
Petroleum Coke Calciners	100 tons/year	N/A	365-day
SRU/TG Incinerators	100 ppmv	3	24-~~day~~hour
Vapor Incinerators	40 ppmv	3	24-~~day~~hour

Averaging times apply to ~~units~~Units operating a certified CEMS and shall be calculated pursuant to Attachment A of this rule. Requirements, including averaging times, for ~~units~~Units without CEMS are specified in subdivision (k).

(f) Interim Emission Limits

(1) An owner or operator of a ~~facility~~Facility that elects to comply with the emission limits in Table 1, Table 2, or an approved B-Plan shall not operate a ~~unit~~Unit that exceeds the applicable interim NOx and CO emission limits based on the measured O_2 correction and the averaging time in Table 4 or
subdivision (k), whichever is applicable, until that ~~unit~~Unit is required to meet
another Rule 1109.1 Emission Limit pursuant to the compliance schedule in paragraph (g)(1) or an approved I-Plan.

TABLE 4: INTERIM NOx AND CO EMISSION LIMITS

Unit	NOx (ppmv)	CO (ppmv)	O_2 Correction (%)	Rolling Averaging Time[1]
Boilers and Process Heaters <40 MMBtu/hour	40	400	3	365-day
Boilers and Process Heaters ≥40 MMBtu/hour	Pursuant to paragraph (f)(2)	400	3	365-day
Flares	105	400	3	365-day
FCCUs	40	500	3	365-day
Gas Turbines fueled with Natural Gas or Other Gaseous Fuel	20	130	15	365-day
Petroleum Coke Calciners	85	2,000	3	365-day
SMR Heaters	20[2]	400	3	365-day
	60[3]			365-day
SMR Heaters with Gas Turbine	5	130	15	365-day
SRU/TG Incinerators	100	400	3	365-day
Sulfuric Acid Furnaces	30	400	3	365-day
Vapor Incinerators	105	400	3	365-day

[1] Averaging times are applicable to ~~units~~Units with a CEMS and shall be calculated pursuant to Attachment A of this rule. Requirements, including averaging times, for ~~units~~Units without CEMS are specified in subdivision (k).

[2] SMR Heaters equipped with post-combustion air pollution control equipment that was installed before [*DATE OF ADOPTION*].

[3] SMR Heaters not equipped with post-combustion air pollution control equipment as of [*DATE OF ADOPTION*].

(2) Interim NOx emission limits for Boilers and Process Heaters

An owner or operator of a Former RECLAIM Facility shall:

(A) Not exceed the applicable interim NOx emission rate in Table 5, calculated pursuant to Attachment A Section (A-2) of this rule, for all boilers and process heaters with a rated heat input capacity greater than or equal to 40 MMBtu/hour and boilers and process heaters with a rated heat input capacity less than 40 MMBtu/hour that operate with a NOx CEMS.

TABLE 5: INTERIM NOX EMISSION RATES FOR BOILERS AND PROCESS HEATERS ≥40 MMBTU/HOUR

Units	An Owner or Operator that Elects to Comply with an Approved:	Facility NOx Emission Rate (pounds/million Btu)	Rolling Averaging Time
Boilers and Process Heaters: ≥40 MMBtu/Hour and <40 MMBtu/hour |Operating a Certified CEMS	B-Plan using I-Plan Option 3	0.02	365-day
	B-Plan	0.03	365-day

(B) Demonstrate compliance with the applicable interim NOx emission rate in Table 5 until all boilers and process heaters subject to paragraph (f)(2) meet the NOx concentration limits in Table 1, Table 2, or an approved B-Plan.

(3) An owner or operator of a Former RECLAIM Facility that elects to comply with an approved B-Cap shall not operate any ~~unit~~Unit included in the approved B-Cap unless the NOx emissions for all ~~units~~Units in the B-Cap are in aggregate at or below the Baseline Facility ~~Emission~~Emissions.

(g) Compliance Schedule

(1) An owner or operator of a ~~unit~~Unit that is required to meet the NOx and CO concentration limits specified in Table 1 shall:

(A) Before July 1, 2023, submit a complete South Coast AQMD permit application to establish a permit condition that limits the NOx concentration based on the percent O_2 correction and the averaging time in Table 1 or subdivision (k), whichever is applicable, unless the owner or operator has a South Coast AQMD Permit to Construct or a South Coast AQMD Permit to Operate with the NOx concentration limit at the percent O_2 correction, based on the averaging time specified in Table 1; and

~~(B) Not operate a unit~~Unit, that exceeds the NOx and CO emission limits

(B) based on the percent O_2 correction and the averaging time in Table 1 or subdivision (k), whichever is applicable:

(i) No later than 36 months after a South Coast AQMD Permit to Construct is issued; or

(ii) No later than July 1, 2023 if a permit application was not required as specified in subparagraph (g)(1)(A).

(2) I-Plan Requirements

An owner or operator with six or more ~~units~~Units that elects to meet the NOx and CO emission limits using an alternative compliance schedule to paragraph (g)(1) or that elects to comply with an approved B-Plan or B-Cap shall:

(A) Before July 1, 2022, submit an I-Plan pursuant to paragraph (i)(1) that includes all ~~units~~Units subject to Table 1 NOx emission limits for review and approval pursuant to paragraph (i)(4), with the exception of any boiler or process heater less than 40 MMBtu/hour that will meet the NOx limit specified in subparagraph (d)(3)(C) or (d)(4)(C) after the last Compliance Date in Table 6 for the selected I-Plan option;

~~(B) Calculate the Phase I, Phase II, or Phase III Facility BARCT Emission Targets, pursuant to Attachment B of this rule;~~

~~(C) For a B-Cap, the Phase I, Phase II, and Phase III Facility BARCT Emission Targets shall incorporate a reduction of 10 percent, pursuant to Attachment B of this rule;~~

~~(D) For a B-Plan, calculate the Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions, pursuant to Attachment B of this rule;~~

~~(E) For a B-Plan, demonstrate that Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions, are equal to or less than the respective Phase I, Phase II, or Phase III Facility BARCT Emission Target;~~

~~(F) For a B-Cap, calculate the Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions, pursuant to Attachment B of this rule;~~

~~(G) For a B-Cap, demonstrate that Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions, are equal to or less than the respective Phase I, Phase II, or Phase III Facility BARCT Emission Target;~~

~~(H)~~(B) Based on the schedule in the approved I-Plan, implement emission reduction projects to comply with the emission limits in Table 1 or Table 2 or an approved B-Plan or approved B-Cap, to achieve the Phase I, Phase II, or Phase III Facility BARCT Emission Target; and

~~(I)~~(C) For an owner or operator with an approved B-Cap, demonstrate compliance with the emissions requirements and all other requirements no later than the compliance date for Phase I in I-Plan Option 4 and no later ~~54 months from South Coast AQMD Permit Application Submittal Date~~than the compliance date in Table 6 for all other phases of the selected I--Plan option in Table 6 to meet the Phase I, Phase II, or Phase III Facility BARCT Emission Targets.

TABLE 6: I-PLAN PERCENT REDUCTION TARGETS AND ~~SCHEDULE~~[1]SCHEDULE

		Phase I	Phase II	Phase III
I-Plan Option 1 for B-Plan Only	Percent Reduction Targets	70	100	N/A
	Permit Application Submittal Date	July 1, 2023	January 1, 2027	N/A
	Compliance Date	No later than 36 months after a South Coast AQMD Permit to Construct is issued		N/A
I-Plan Option 2 for B-Plan Only	Percent Reduction Targets	60	80	100
	Permit Application Submittal Date	July 1, 2023	January 1, 2025	January 1, 2028
	Compliance Date	No later than 36 months after a South Coast AQMD Permit to Construct is issued		
I-Plan Option 3 for B-Plan or B-Cap and as allowed pursuant to paragraph (g)(3)	Percent Reduction Targets	50	100	N/A
	Permit Application Submittal Date	January 1, 2025	January 1, 2029	N/A
	Compliance Date	No later than 36 months after a South Coast AQMD Permit to Construct is issued		N/A
I-Plan Option 4 for B-Cap Only	Percent Reduction Targets	50 to 60 (Still in development)	80	100
	Permit Application Submittal Date	N/A	January 1, 2025	January 1, 2028
	Compliance Date	January 1, 2024	No later than 36 months after a South Coast AQMD Permit to Construct is issued	
I-Plan Option 5 for B-Cap Only	Percent Reduction Targets	50	70	100
	Permit Application Submittal Date	July 1, 2022	July 1, 2024	January 1, 2028
	Compliance Date	No later than 36 months after a South Coast AQMD Permit to Construct is issued		

(3) I-Plan Option 3 is only available to an owner or operator of a ~~facility~~Facility achieving a NOx emission rate of less than 0.02 pound per million BTU of heat input, based on annual emissions for the applicable ~~units~~Units as reported in the 2021 Annual Emissions Report and calculated pursuant to Attachment A, for all the boilers and process heaters with a rated heat input capacity greater than or equal to 40 MMBtu/hour based on the maximum rated capacity by [*DATE OF ADOPTION*]; for ~~units~~Units firing at less than the maximum rated capacity, mass emissions shall be less than or equal to the quantity that would occur at maximum rated capacity.

(4) An owner or operator of a ~~unit~~Unit complying with Table 2 conditional emission limits that replaces existing NOx control equipment shall:

(A) Within six months of replacing the existing NOx control equipment, be subject to the applicable Table 1 emission limit;

(B) Apply for a South Coast AQMD permit condition to limit the NOx and CO concentration to the applicable Table 1 emission limit at the corresponding percent O_2 correction and averaging times in Table 1 or subdivision (k), whichever is applicable. Replacement of existing NOx control equipment will be determined as:

(i) Existing post-combustion air pollution control equipment for an FCCU, gas turbine fueled with natural gas, process heater with a rated heat input capacity greater than or equal to 40 MMBtu/hour, or SMR Heater is replaced such that the fixed capital cost of the new components for the post-combustion air pollution control equipment exceeds 50 percent of the fixed capital cost that would be required to construct and install a comparable new ~~unit~~Unit; or

(ii) 50 percent or more of the burners in a vapor incinerator, or 50 percent or more of the rated heat input capacity of the burners in a vapor incinerator, are cumulatively replaced after [*DATE OF ADOPTION*].

~~(5)~~ An owner or operator of ~~unit complying with clauses (d)(2)(B)(i); (d)(3)(C)(i); (d)(4)(C)(i); or subparagraphs (g)(1)(A) or (g)(5)(A) that fails to submit a complete South Coast AQMD permit application by the date specified in causes (d)(2)(B)(i); (d)(3)(C)(i); (d)(4)(C)(i); or subparagraphs (g)(1)(A) or (g)(5)(A), shall meet the applicable Rule 1109.1 Emission Limits no later than 36 months after the South Coast AQMD permit application submittal date pursuant to causes (d)(2)(B)(i), (d)(3)(C)(i), or (d)(4)(C)(i), or subparagraphs (g)(1)(A) or (g)(5)(A).~~

~~(6)~~(5) ~~An owner or operator of a unit~~a Unit exempt from the Table 1 NOx and CO emission limits pursuant to paragraphs (n)(2), (n)(3), (n)(6), (n)(7), (n)(8) or (n)(9) that exceeds the applicable exemptions limitations shall:

(A) Within six months of the exceedance, submit a complete South Coast AQMD permit application to comply with the corresponding Table 1 emission limit; and

(B) Meet the emission limits specified on Table 1 no later than 36 months after a South Coast AQMD Permit to Construct is issued.

(h) Time Extensions

(1) An owner or operator of a ~~unit~~Unit may request one 12-month extension for each ~~unit~~Unit from the compliance date in paragraph (g)(1) or the Compliance Date in Table 6 provided:

(A) The South Coast AQMD permit application for the ~~unit~~Unit was submitted on or before the date specified in paragraph (g)(1) or the approved I-Plan; and

(B) There are specific circumstances outside of the control of the owner or operator that necessitate an extension of time.

(2) An owner or operator of a ~~unit~~Unit with an approved I-Plan may request a time extension from the Compliance Date in Table 6 for a ~~unit~~Unit provided:

(A) The South Coast AQMD permit application for the ~~unit~~Unit was submitted on or before the date specified in the approved I-Plan;

(B) The month and year for the ~~unit's~~Unit's scheduled turnaround and the month and year for the ~~unit's~~Unit's subsequent turnaround is submitted in writing at the time of South Coast AQMD permit application submittal; and

(C) One or more of the following occurred:

(i) The South Coast AQMD Permit to Construct for the ~~unit~~Unit was issued after the scheduled turnaround date or the South Coast AQMD Permit to Construct for the ~~unit~~Unit was issued more than ~~24~~18 months after the South Coast AQMD permit application was submitted, and either:

(ii) The subsequent scheduled turnaround for the ~~unit~~Unit will not occur until 12 months after the Compliance Date in the approved I-Plan; or

(iii) The subsequent scheduled turnaround for the ~~unit~~Unit will occur more than 48 months after the South Coast AQMD Permit to Construct was issued.

(3) An owner or operator that requests a time extension pursuant to paragraphs (h)(1) or (h)(2) shall submit the request in writing to the Executive Officer no later than 90 days prior to the Compliance Date in paragraph (g)(1) or the approved I-Plan for the ~~unit~~Unit. The time extension request shall include:

(A) The phase and ~~unit~~Unit needing a time extension;

(B) The date the South Coast AQMD permit application was submitted;

(C) The additional time needed to complete the emission reduction project;

(D) Specify if the time extension request is for paragraph (h)(1) or (h)(2);

(E) For time extension requests for paragraph (h)(2), provide the month and year of the scheduled turnaround, and the subsequent turnaround, if applicable, for the ~~unit~~Unit; and

(F) The reason(s) a time extension is requested.

(4) The Executive Officer will review the request for the time extension and act on the request within ~~60~~30 days of receipt provided an owner or operator:

(A) Meets the requirements of paragraph (h)(1) or (h)(2), as applicable;

(B) Submitted the written request within the timeframe and includes the applicable information specified in paragraphs (h)(1) and (h)(2); and

(C) For a time extension request pursuant to paragraphs (h)(1) and (h)(2), the owner or operator shall at a minimum:

(i) For delays due to missed milestones, provide information on schedules and/or construction plans documenting the key milestones and which key milestone(s) were delayed with an

explanation actions the operator took to ensure milestones were met and why the delay necessitates additional time;

(ii) For delays related to other agency approvals, provide information to substantiate that the submittal of information to the agency was timely, the date when application was the approval was requested, and documentation from the agency of reason for the delay;

(iii) For delays related to the delivery of parts or equipment, provide purchase orders, invoices, and communications from vendors that demonstrate that equipment was ordered in a timely fashion and delays are outside of the control of the operator; and

(iv) For delays related to contract workers, source testers, installers, or other services, provide an explanation of the service, when the service was requested, the response time, and information to substantiate why the delay necessitates additional time.

(D) For a time extension request allowed under paragraphs (h)(2), the owner or operator shall provide documentation to substantiate that one of the provisions under subparagraph (h)(2)(C) have been met.

(5) If the Executive Officer requests additional information to substantiate the time extension request, the owner or operator shall provide that information within the timeframe specified by the Executive Officer.

(6) If the Executive Officer notifies the owner or operator of approval of a time extension request, the owner or operator shall meet the emission limits in Table 1, an approved B-Plan, or an approved B-Cap within timeframe in the approval, and the approval represents an amendment to the I-Plan.

(7) If the Executive Officer notifies the owner or operator of a disapproval of a time extension request, the owner or operator shall meet the emission limits in Table 1, an approved B-Plan, or an approved B-Cap within 60 calendar days after receiving notification of disapproval of the time extension request or pursuant to the compliance schedule in paragraph (g)(1) or the schedule in an approved I-Plan, whichever is later.

(i) I-Plan, B-Plan, and B-Cap Submittal and Approval Requirements

(1) I-Plan Submittal Requirements

An owner or operator that elects to implement an I-Plan pursuant to paragraph (g)(2) to meet the Alternative BARCT NOx Limits in an approved B-Plan ~~or~~, or the BARCT Equivalent Mass Emission Cap in an approved B-Cap shall submit an I-Plan to the Executive Officer for review and approval that:

(A) Identifies all Facilities by Facility identification number under same ownership subject to the rule that are included in the I-Plan;

~~(A)~~(B) Identifies each ~~unit~~Unit subject to the rule by device identification number with a description of each ~~unit~~Unit, with the exception of any boiler or process heater less than 40 MMBtu/hour that will meetthe NOx limit specified in subparagraph (d)(3)(C) or (d)(4)(C) after the last Compliance Date in Table 6 for the selected I-Plan option;

~~(B)~~(C) For ~~facilities~~Facilities to use the time extension pursuant to paragraph (h)(2), identifies the anticipated start and end date (month and year) of the turnaround schedule for each ~~unit~~Unit;

~~(C)~~(D) Specifies either I-Plan Option 1 (for a B-Plan only), I-Plan Option (for a B-Plan only) 2, I-Plan Option 3 (for a B-Plan or B-Cap), I--Plan Option 4 (for a B-Cap only), or I-Plan Option 5 (for a B-Cap only) in Table 6;

~~(D) Calculates the Phase I, Phase II, or Phase III Facility BARCT Emission Target, pursuant to Attachment B of this rule;~~

(E) For a B-Plan, identifies each ~~unit~~Unit that meets the requirements under subparagraph (d)(2)(A) for use of a conditional NOx emission limit in Table 2 and the owner or operator submitted a complete South Coast AQMD permit application pursuant to clause (d)(2)(B)(i);

(F) For the selected I-Plan option specified pursuant to subparagraph

(i)(1)(~~B~~D), calculates the Phase I, Phase II, or Phase III Facility BARCT Emission Target, pursuant to Attachment B of this rule; and

(G) Identifies each ~~unit~~Unit by device identification number with a description of each ~~unit~~Unit, that cumulatively meets Phase I, Phase II, or Phase III Facility BARCT Emission Target.

(2) B-Plan Submittal Requirements

An owner or operator that elects to meet Alternative BARCT NOx Limits in an approved B-Plan pursuant to paragraph (e)(1), shall submit a B-Plan to the Executive Officer for review that:

(A) Identifies all Facilities by Facility identification number under same ownership subject to the rule that are included in the B-Plan;

~~(A)~~(B) Identifies for each ~~unit~~Unit subject to the rule by device identification number with a description of each ~~unit~~Unit, with the exception of any boiler or process heater less than 40 MMBtu/hour that will meet the NOx limit specified in subparagraph (d)(3)(C) or (d)(4)(C) after the last Compliance Date in Table 6 for the selected I-Plan option;

~~(B)~~(C) Specifies the Alternative BARCT NOx Limit for Phase I, Phase II, and if applicable Phase III of the approved I-Plan;

~~(C)~~(D) Calculates the Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions using the Alternative BARCT NOx Limits ~~identified in subparagraph (g)(2)(B)~~, as calculated pursuant to Attachment B of this rule; and

~~(D)~~(E) Demonstrates that Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions are less than the respective Phase I, Phase II, or Phase III Facility BARCT Emission Target.

(3) B-Cap Submittal Requirements

An owner or operator that elects to meet the ~~Alternative~~ BARCT ~~NOx Limits~~Equivalent Mass Emission Cap in an approved B-Cap pursuant to paragraph (e)(2), shall submit a B-Cap to the Executive Officer for review that:

(A) Identifies all Facilities by Facility identification number under same ownership subject to the rule that are included in the B-Cap;

~~(A)~~(B) Identifies each ~~unit~~Unit subject to the rule by the device identification number with a description of the ~~unit~~Unit, with the exception of any boiler or process heater less than 40 MMBtu/hour that will meet the NOx limit specified in subparagraph (d)(3)(C) or (d)(4)(C) after the last Compliance Date in Table 6 for the selected I-Plan option, and:

~~(B)~~(C) Specifies the Alternative BARCT NOx Limit that is at or below Maximum Alternative BARCT NOx Limit in Table 3;

~~(C)~~(D) Identifies any ~~unit~~Unit that will be permanently decommissioned for each phase of the approved I-Plan;

~~(D)~~(E) Identifies any ~~unit~~Unit that will have ~~a reduction~~other reductions in ~~throughput~~mass emissions for each phase of the approved I-Plan;

~~(E)~~(F) Calculates the Phase I, Phase II, or Phase III BARCT ~~Equivalent Mass~~B-Cap Annual Emissions using ~~the~~ emission reduction strategies ~~identified in subparagraph (g)(3)(B)~~; as calculated pursuant to Attachment B of this rule; and

(G) Demonstrates that Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions, are less than the respective Phase I, Phase II, or Phase III Facility BARCT Emission Target ~~that incorporates a 10 percent reduction pursuant to subparagraph (g)(2)(C);~~.

~~(F)~~(H) Demonstrates that the B-Cap and I-Plan submittal satisfies the environmental benefit definition in U.S. EPA's January 2001 guidance document entitled "Improving Air Quality With Economic Incentive Programs."

(4) I-Plan, B-Plan, and B-Cap Review and Approval Process

(A) Within 30 days of receipt, the Executive Officer will conduct an initial review of the applicable plan(s) and request any additional information that was not provided in subparagraph (i)(4)(B).

~~(A)~~(B) The Executive Officer will notify the owner or operator in writing whether the I-Plan, B-Plan, or B-Cap is approved or disapproved based on the following criteria:

(i) The I-Plan contains information required in paragraph (i)(1), the B-Plan contains information required in paragraph (i)(2), and the B-Cap contains information required in paragraph (i)(3);

(ii) The owner or operator demonstrates that the requirements of subparagraphs (d)(2)(A) and (d)(2)(B) have been met for any ~~unit~~Unit not listed in Attachment D-2 that is meeting a Table 2 conditional NOx emission limit, in lieu of a Table 1 NOx emission limit;

(iii) For a B-Plan, the Phase I, Phase II, or Phase III Equivalent BARCT Emissions are less than or equal to the respective Phase I, Phase II, or Phase III Facility BARCT Emission Target ~~as required in subparagraph (g)(2)(B)~~;

(iv) For a B-Cap, the Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions are less than or equal to the respective Phase I, Phase II, or Phase III Facility BARCT Emission Target ~~that incorporates a 10 percent reductions pursuant to subparagraph (g)(2)(C)~~;

(v) For a B-Cap, the NOx concentration limit for any ~~unit~~Unit does not exceed the Maximum Alternative BARCT NOx Limits in Table 3.

(C) The Executive Officer shall not disapprove the I-Plan, B-Plan, or B-Cap or a modification to these Plan(s) if the Facility provides the information required in (i)(4)(B).

~~(B)~~(D) Within ~~30~~60 days of receiving written notification from Executive Officer that the I-Plan, B-Plan, or B-Cap is ~~disapproved~~deficient, the owner or operator shall correct any deficiencies and re-submit the I-Plan, B-Plan, or B-Cap.

~~(C) Upon receiving written notification from the Executive Officer that the I-Plan, B-Plan, or B-Cap re-submitted pursuant to subparagraph (i)(4)(B) is disapproved, the owner or operator shall comply with the compliance schedule pursuant to paragraph (g)(1).~~

(E) An I-Plan, B-Plan or B-Cap shall be subject to Rule 221 – Plans.

(5) Modifications to an Approved I-Plan, an Approved B-Plan, and an Approved B-Cap

(A) An owner or operator that seeks approval to modify an approved I-Plan, an approved B-Plan, or an approved B-Cap shall submit a request in writing to the Executive Officer to modify an Approved I-Plan, an Approved B-Plan, and an Approved B-Cap.

(B) The modification request submitted pursuant to subparagraph (i)(5)(A) shall include all the plan submittal requirements pursuant to paragraph (i)(1) for an approved I-Plan, paragraph (i)(2) for a modification of an approved B-Plan, or paragraph (i)(3) for a modification of an approved B-Plan;

(C) An owner or operator shall modify an approved I-Plan, B-Plan, or B-Cap if:

(i) A ~~unit~~Unit identified as meeting Table 2 no longer meets the requirements of subparagraph (d)(2)(A) or (d)(2)(B);

(ii) A ~~unit~~Unit in an approved B-Cap or B-Plan, identified as meeting Table 2 for establishing the Phase I, Phase II, or Phase III BARCT Facility Emission Target, is permanently decommissioned;

(iii) A higher Alternative BARCT NOx Limit will be proposed in the South Coast AQMD permit application than the Alternative BARCT NOx Limit for that ~~unit~~Unit in the currently approved I-Plan, B-Plan, or B-Cap; or

~~(iv) Any emission reduction project is moved to a later implementation phase, any emission reduction project is moved between phases, or any emission reduction project is removed from a phase; or~~

~~(v)~~(iv) The owner or operator receives written notification from the Executive Officer that modifications to the I-Plan, B-Plan, or B-Cap are needed.

(D) Review and approval of any modifications to an I-Plan, B-Plan, or

B-Cap shall conducted in accordance with the review and approval process pursuant to paragraph (i)(4).

(6) Notification of Pending Approval of an I-Plan, B-Plan, or B-Cap

The Executive Officer will make the I-Plan, B-Plan, or B-Cap or modifications to an approved I-Plan, B-Plan, or B-Cap available to the public on the South Coast AQMD website 30 days prior to approval.

(7) Plan Fees

The review and approval of an I-Plan, B-Plan, and B-Cap, or review and approval of a modification of an approved I-Plan, B-Plan, and B-Cap shall be subject to applicable plan fees as specified in Rule 306 – Plan Fees.

(j) CEMS Requirements

(1) An owner or operator of a Former RECLAIM Facility with a ~~unit~~Unit with a rated heat input capacity of greater than or equal to 40 MMBtu/hour shall install, certify, operate, and maintain a CEMS to measure NOx and O_2 pursuant to the applicable Rule 218.2 and Rule 218.3 requirements to demonstrate compliance with NOx emission limits at the corresponding percent O_2 correction and averaging times.

(2) An owner or operator of a Former RECLAIM Facility with a sulfuric acid furnace subject to the emission limits in Table 1, Table 4, an approved B-Plan or an approved B-Cap shall:

(i) Install, certify, operate, and maintain a CEMS to measure NOx pursuant to the applicable Rules 218.2 and 218.3 requirements to demonstrate compliance with the Rule 1109.1 Emissions Limits; and

(ii) Within 12 months from [*DATE OF ADOPTION*] shall install, certify, operate, and maintain a CEMS that complies with the Rules 218.2 and 218.3 requirements to measure O_2 and demonstrate compliance with the Rule 1109.1 Emission Limits at the corresponding percent O_2 correction.

(3) An owner or operator of a ~~unit~~Unit with a CEMS that measures CO at [*DATE*

OF ADOPTION] must operate and maintain the CO CEMS pursuant to the applicable Rules 218.2 and 218.3 requirements to demonstrate compliance with the Table 1, Table 2, or Table ~~3~~4 CO emissions limits and certify the CEMS within 12 months of [*DATE OF ADOPTION*] pursuant to the applicable Rules 218.2 and 218.3 requirements.

(4) An owner or operator of a Former RECLAIM Facility for a ~~unit~~Unit with a CEMS shall exclude invalid CEMS data pursuant to Rule 218.2 –

Continuous Emission Monitoring System: General Provisions and Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications.

(5) Missing Data Procedures for a Facility Complying with a B-Cap

An owner or operator of a ~~unit~~Unit with an approved B-Cap with a non-operational CEMS that is not collecting data, shall:

(A) Calculate missing data using the average of the recorded emissions for the hour immediately before the missing data period and the hour immediately after the missing data period, if the missing data period is less than or equal to 8 continuous hours; or

(B) Calculate missing data using the maximum hourly emissions recorded for the previous 30 days, commencing on the day immediately prior to the day the missing data occurred, if the missing data period is more than 8 continuous hours.

(k) Source Test Requirements

(1) An owner or operator of a ~~unit~~Unit that is not required to install and operate a CEMS pursuant to subdivision (i) shall be required to conduct a source test, with a duration of at least 15 minutes but no longer than two hours, to demonstrate compliance with Rule 1109.1 Emission Limits pursuant to the source test schedule in either Table 7 or Table 8.

(2) Source Test Schedule for Units without Ammonia Emissions in the Exhaust

An owner or operator of a ~~unit~~Unit that is not required to install and operate a CEMS pursuant to subdivision (i) and does not vent to post-combustion air pollution control equipment with ammonia injection, shall demonstrate compliance with the applicable Rule 1109.1 Emission Limits by conducting source tests according to the schedule in Table 7.

(3) An owner or operator of a Unit with source testing requirements in a South Coast AQMD Permit to Operate for NOx or CO shall follow the applicable source test requirements in the South Coast AQMD Permit to Operate in lieu of the source test requirements in Table 7 and Table 8.

TABLE 7: SOURCE TESTING SCHEDULE
FOR UNITS WITHOUT AMMONIA EMISSIONS IN THE EXHAUST

Combustion Equipment	Source Test Schedule
Vapor Incinerators less than 40MMBtu/hr, Flares	• Conduct source test simultaneously for NOx and CO within 36 months from previous source test and every 36 months thereafter
All Other Units	
Units Operating without NOx or CO CEMS	• Conduct source test simultaneously for NOx and CO within 12 months of being subject to Rule 1109.1 Emission Limit and quarterly thereafter • Source tests may be conducted annually after the first 12 months of being subject to Rule 1109.1 Emission Limit if four consecutive quarterly source tests demonstrate compliance with the NOx and CO emission limits • If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the NOx and CO emission limits prior to resuming annual source tests
Units operating with NOx CEMS and without CO CEMS	• Conduct source test for CO within 12 months from previous source test and every 12 months thereafter
Units operating without NOx CEMS and with CO CEMS	• Conduct source test for NOx during the first 12 months of being subject to Rule 1109.1 Emission Limit and quarterly thereafter • Source tests may be conducted annually after the first 12 months of being subject to Rule 1109.1 Emission Limit if four consecutive quarterly source tests demonstrate compliance with the NOx and CO emission limits • If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the NOx emissions limits prior to resuming annual source tests

~~(3)~~(4) Source Test Schedule for Units with Ammonia Emissions in the Exhaust

An owner or operator of a ~~unit~~Unit with post-combustion air pollution control equipment that requires ammonia injection shall demonstrate compliance with the applicable Rule 1109.1 Emission Limit and ammonia South Coast AQMD permit limit by conducting a source test according to the schedule in Table 8.

TABLE 8: SOURCE TESTING SCHEDULE
FOR UNITS WITH AMMONIA EMISSIONS IN THE EXHAUST

Combustion Equipment	Source Test Schedule
Units operating without NOx, CO, or ammonia CEMS	• Conduct source test simultaneously for NOx, CO, and ammonia quarterly during the first 12 months of being subject to Rule 1109.1 Emission Limit or ammonia South Coast AQMD permit limit and quarterly thereafter • Source tests may be conducted annually after the first 12 months of being subject to Rule 1109.1 Emission Limit or ammonia South Coast AQMD permit limit if four consecutive quarterly source tests demonstrate compliance with the CO, NOx, and ammonia emission limit • If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the NOx, CO, and ammonia emissions limits prior to resuming annual source tests

Combustion Equipment	Source Test Schedule
Units operating with NOx CEMS and without CO and ammonia CEMS	• Conduct source test for CO and ammonia quarterly during the first 12 months of being subject to Rule 1109.1 Emission Limit or ammonia South Coast AQMD permit limit and quarterly thereafter • Source tests may be conducted annually after the first 12 months of being subject to Rule 1109.1 Emission Limit or ammonia South Coast AQMD permit limit if four consecutive quarterly source tests demonstrate compliance with the CO and ammonia emission limit • If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the CO and ammonia emissions limits prior to resuming annual source tests
Units operating with NOx and CO CEMS and without ammonia CEMS	• Conduct source test for ammonia quarterly during the first 12 months of being subject to an ammonia South Coast AQMD permit limit and quarterly thereafter • Source tests may be conducted annually after the first 12 months of being subject to an ammonia South Coast AQMD permit limit if four consecutive quarterly source tests demonstrate compliance with the ammonia emission limit • If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the ammonia emissions limits prior to resuming annual source tests
Units operating with NOx and ammonia CEMS and without CO CEMS	• Conduct source test for CO within 12 months from previous source test and every 12 months thereafter
Units operating with ammonia CEMS and without NOx or CO CEMS	• Conduct source tests to determine compliance with NOx and CO emission limits pursuant to Table 7

~~(4)~~(5) An owner or operator that elects to install and operate a CEMS to demonstrate compliance with the applicable Rule 1109.1 Emission Limits or ammonia South Coast AQMD permit limit at the corresponding percent O_2 correction shall meet the CEMS requirements under subdivision (j).

~~(5)~~(6) An owner or operator of with a ~~unit~~Unit subject to a Rule 1109.1 Emission Limit or ammonia South Coast AQMD permit limit, that is not required to install and operate a CEMS pursuant to subdivision (i) and has not conducted a source test within the schedule in Table 7 or Table 8, shall conduct a source test within:

(A) Six months from being subject to the Rule 1109.1 Emission Limit for ~~units~~Units with a rated heat input capacity greater than or equal to 20 MMBtu/hour.

(B) 12 months from being subject to the Rule 1109.1 Emission Limit for ~~units~~Units with a rated heat input capacity less than 20 MMBtu/hour.

~~(6)~~(7) An owner or operator of a new or modified ~~unit~~Unit shall conduct the initial source tests within six months from commencing operation.

~~(7)~~(8) An owner or operator of a ~~unit~~Unit required to conduct a source test pursuant to subdivision (k) shall:

(A) For ~~units~~Units that receive a South Coast AQMD Permit to Construct to comply with Rule 1109.1 Emission Limit, submit a source test protocol, that includes an averaging time of ~~at least~~no less than 15 minutes but no longer than 2 hours, for approval ~~within 60 days after the Permit to Construct was issued~~ at least 90 days prior to conducting the source test unless otherwise approved by the Executive Officer;

(B) For ~~units~~Units that receive a South Coast AQMD permit condition that limits NOx or CO to a Rule 1109.1 Emission Limit, submit a source test protocol, that includes an averaging time of ~~at least~~no less than 15 minutes but no longer than 2 hours, for approval within 60 days after being subject to a Rule 1109.1 Emission limit, unless otherwise approved by the Executive Officer, and

(C) Conduct the source test within 90 days after a written approval of the source test protocol by the Executive Officer is distributed unless otherwise approved by the Executive Officer.

~~(8)~~(9) At least one week prior to conducting a source test, an owner or operator of

a ~~unit~~Unit shall notify the Executive Officer by calling 1-800-CUT-SMOG of the intent to conduct source testing and shall provide:

(A) Facility name and identification number;

(B) Device identification number; and

(C) Date when source test will be conducted.

~~(9)~~(10) Unless requested by the Executive Officer, after the approval of the initial source test protocol pursuant to paragraph (k)(7), an owner or operator is not required to resubmit a source test protocol for approval pursuant to paragraph (k)(7) if:

(A) The method of operation of the ~~unit~~Unit has not been altered in a manner that requires a South Coast AQMD permit application submittal;

(B) Rule or South Coast AQMD permit emission limits have not become more stringent since the previous source test;

(C) There have been no changes in the source test method that is referenced in the approved source test protocol; and

(D) The approved source test protocol is representative of the operation and configuration of the ~~unit~~Unit.

~~(10)~~(11) An owner or operator of a ~~unit~~Unit shall conduct the source test using a South Coast AQMD approved contractor under the Laboratory Approval Program:

(A) Using a South Coast AQMD approved source test protocol;

(B) Using at least one of the following test methods:

(i) South Coast AQMD Source Test Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling; or

(ii) South Coast AQMD Source Test Method 7.1 – Determination of Nitrogen Oxide Emissions from Stationary Sources and South Coast AQMD Source Test Method 10.1 – Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector – Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD);

(iii) South Coast AQMD Source Test Method 207.1 for Determination of Ammonia Emissions from Stationary Sources; or

(iv) Any other test method determined to be equivalent and approved by the Executive Officer, and either the California Air Resources Board or the U. S. Environmental Protection Agency, as applicable.

(C) During operation other than startup and shutdown; and

(D) In as-found operating condition.

~~(11)~~(12) An owner or operator of a ~~unit~~Unit shall submit all source test reports, including the source test results and a description of the ~~unit~~Unit tested, to the Executive Officer within 60 days of completion of the source test.

~~(12)~~(13) Emissions determined to exceed any limits established by this rule by any of the reference test methods in subparagraph (k)(9)(B) shall constitute a violation of the rule.

~~(13)~~(14) An owner or operator of a ~~unit~~Unit that exceeds any limits established by this rule by any of the reference test methods in subparagraph (k)(9)(B) shall inform the Executive Officer within 72 hours from the time an owner or operator knew of excess emissions, or reasonably should have known.

(l) Diagnostic Emission Checks

(1) An owner or operator of a ~~unit~~Unit required to perform a source test every 36 months pursuant to subdivision (k) shall:

(A) Perform diagnostic emissions checks of NOx, CO, and O_2 emissions, with a portable NOx, CO, and O_2 analyzer that is calibrated, maintained and operated in accordance with manufacturers specifications and recommendations of the South Coast AQMD Combustion Gas Periodic Monitoring Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Combustion Sources Subject to Rules 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, 1146 – Emissions of Oxides of Nitrogen From Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, and 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters.

(B) Conduct the diagnostic emission checks by a person who has completed an appropriate training program approved by South Coast AQMD in the operation of portable analyzers and has received a certification issued by the South Coast AQMD.

(C) Conduct the diagnostic test every 365 days or every 8760 operating hours, whichever occurs earlier.

(2) A diagnostic emissions check that finds the emissions in excess of those allowed by this rule or a South Coast AQMD permit condition shall not constitute a violation of this rule if an owner or operator corrects the problem and demonstrates compliance with another diagnostic emissions check within 72 hours from the time an owner or operator knew of excess emissions, or reasonably should have known, or shut down the ~~unit~~Unit by the end of an operating cycle, whichever is sooner. Any diagnostic emission check conducted by South Coast AQMD staff that finds emissions in excess of those allowed by this rule or a South Coast AQMD permit condition shall be a violation.

(m) Monitoring, Recordkeeping, and Reporting Requirements

(1) Operating Log

An owner or operator of a ~~unit~~Unit shall maintain the following daily records for each ~~unit~~Unit, in a manner approved by the Executive Officer:

(A) Time and duration of startup and shutdown events;

(B) Total hours of operation;

(C) Quantity of fuel; and

(D) Cumulative hours of operation to date for the calendar year.

(2) An owner or operator of a ~~facility~~Facility that elects to meet the NOx emission limits in an approved B-Cap pursuant to paragraph (e)(2) shall:

(A) Maintain CEMS for all applicable equipment or an enforceable method approved by the Executive Officer to determine daily mass emissions for those ~~units~~Units without CEMS;

(B) Maintain daily records of mass emissions, in pounds (lbs) per day, from all ~~units~~Units included in an approved B-Cap including:

(i) Emissions during start-ups, shutdowns, and maintenance;

(ii) CEMS data identified as invalid and justification;

(iii) Data substituted for missing data pursuant to paragraph (j)(5);

(C) Demonstrate compliance with the Facility BARCT Emission Target in the B-Cap on a daily basis from 365-day rolling average;

(3) An owner or operator subject to the interim emission rate pursuant to paragraph (f)(2) shall maintain the following daily records for each ~~unit~~Unit, in a manner approved by the Executive Officer:

(A) Actual daily mass emissions, in lbs., for all boilers and process heaters with a rated heat input capacity greater than or equal to 40 MMBtu/hour;

(B) Combined maximum rated heat input for all boilers and process heaters with a rated heat input capacity greater than or equal to 40 MMBtu/hour; and

(C) Calculated interim NOx emission rate pursuant to Attachment A Section (A-2) of this rule.

(4) An owner or operator of a ~~unit~~Unit shall keep and maintain the following records on-site for five years, except that all data gathered or computed for intervals of less than 15 minutes shall be maintained for a minimum of 48 hours, and shall make them available to the Executive Officer upon request:

(A) CEMS data;

(B) Source tests reports;

(C) Diagnostic emission checks; and

(D) Written logs of startups, shutdowns, and breakdowns, all maintenance, service and tuning records, and any other information required by this rule.

(5) An owner or operator of a boiler or process heater that is exempt from the applicable Table 1 emission limits pursuant to paragraphs (n)(5) and (n)(6), or an owner or operator of a flare that is exempt from the applicable Table 1 emission limits pursuant to subparagraph (n)(8)(A) shall:

(A) Within 90 days of [*DATE OF ADOPTION*], install and operate a non-resettable totalizing time meter or a fuel meter unless a metering system is currently installed and the fuel meter is approved in writing by the Executive Officer.

(B) Within 90 days of [*DATE OF ADOPTION*], each non-resettable totalizing time meter or a fuel meter required under subparagraph (m)(4)(A) that requires dependable electric power to operate shall be equipped with a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply circuit for the building and associated equipment or the safety shut-off switch.

(C) Ensure that the continuous electric power to the non-resettable totalizing time meter or fuel meter required under subparagraph (m)(4)(A) may only be shut off for maintenance or safety.

(D) Within 90 days of [*DATE OF ADOPTION*], ensure that each non-resettable totalizing time meter or fuel meter is calibrated and recalibrate the meter annually, thereafter, based on the manufacturer's recommended procedures. If the non-resettable totalizing time or fuel meter was calibrated within one year prior to [*DATE OF ADOPTION*], the next calibration shall be conducted within one year of anniversary date of the prior calibration.

(E) Monitor and maintain hours of operation records as follows:

(i) For the hours per year validation, using a calibrated non-resettable totalizing time meter or equivalent method approved in writing by the Executive Officer; or

(ii) For the annual throughput limit equivalent to hours per year validation, using a calibrated fuel meter or equivalent method approved in writing by the Executive Officer.

(6) An owner or operator of a vapor incinerator that is exempt from the applicable Table 1 NOx emission limits pursuant to paragraph (n)(9) shall record:

(A) The annual throughput using a calibrated fuel meter or equivalent method approved in writing by the Executive Officer; and

(B) Emissions using a source test pursuant to subdivision (k) or by using a default emission factor approved in writing by the Executive Officer.

(7) An owner or operator of a ~~unit~~Unit subject to the compliance schedule in subparagraphs (d)(3)(B), (d)(4)(B), and (g)(3)(B) shall maintain records of burner replacement, including number of burners and date of installation.

(8) An owner or operator of a ~~unit~~Unit subject to the compliance schedule in subparagraph (g)(3)(A) shall maintain records of the date the existing post-combustion control equipment was installed or replaced.

(n) Exemptions

(1) Boilers or Process Heater with a Rated Heat Input Capacity 2 MMBtu/hour or less

The provisions of this rule shall not apply to an owner or operator of a boiler or process heater with a rated heat input capacity 2 MMBtu/hour or less that are fired with liquid and/or gaseous fuel and used exclusively for space or water heating and are subject to Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters.

(2) Low-Use Boilers with a Rated Heat Capacity of less than 40 MMBtu/hour

An owner or operator of a boiler with a rated heat capacity of less than 40 MMBtu/hour that operates 200 hours or less per calendar year, or with an annual throughput limit equivalent to 200 hours per calendar year, shall be exempt from the requirements in:

(A) Subdivisions (d) provided:

(i) The boiler has an enforceable South Coast AQMD permit conditions that limits the operating hours to 200 hours or the annual throughput equivalent to 200 hours; and

(ii) The boiler operates in compliance with the permit conditions pursuant to clause (n)(2)(A)(ii).

(B) Subdivisions (k) and (l) provided the ~~unit~~Unit is not included in an approved B-Cap.

(3) Low-Use Process Heater with a rated heat input capacity greater than or equal to 40 MMBtu/hour

An owner or operator of a process heater with a rated heat input capacity greater than or equal to 40 MMBtu/hour that is fired at less than 15 percent of the rated heat input capacity on an annual basis, shall be exempt from the applicable emission limits in Table 1, Table 2, and an approved B-Plan.

(4) An owner or operator of a FCCU that must bypass the post-combustion air pollution control equipment to conduct boiler inspections required under California Code of Regulations, Title 8, Section 770(b) shall be exempt from the applicable Rule 1109.1 Emission Limits during the required boiler inspections.

(5) FCCU Startup Heater

An owner or operator of a process heater which is used only for startup of a FCCU and that process heater is operated for 200 hours or less per calendar year shall be exempt from the requirements in:

(A) Subdivisions (d) provided:

(i) The process heater or boiler has a South Coast AQMD permit that specifies conditions that limits the operating hours to 200 hours or less; and

(ii) The process heater or boiler operates in compliance with the permit condition pursuant to clause (n)(5)(A)(i).

(B) Subdivisions (k) and (l) provided the ~~unit~~Unit is not included in an approved B-Cap.

(6) Startup or Shutdown Boilers at Sulfuric Acid Plants

An owner or operator of a process heater used for startup or a boiler used during startup or shutdown at a sulfuric acid plant that does not exceed 90,000 MMBtu of annual heat input per calendar year shall be exempt from the requirements in subdivisions (d), (i), (j), and (k) provided:

(A) The process heater or boiler has a South Coast AQMD permit that specifies conditions that limits the heat input to 90,000 MMBtu or lower per calendar year; and

(B) The process heater or boiler operates in compliance with the South Coast AQMD permit condition specified in subparagraph (n)(6)(A).

(7) Boiler or Process Heater Operating Only the Pilot

An owner or operator of a boiler or process heater operating only the pilot prior to startup or after shutdown shall be exempt from the emission limits in paragraphs (d)(3), (d)(4), Table 1, Table 2, Table 3, an approved B-Plan, or an approved B-Cap and may exclude those emission from the rolling average calculation pursuant to Attachment A of this rule.

(8) Flares

(A) An owner or operator of a flare that emits less than or equal to 550 pounds of NOx or less per year shall be exempt from the requirements in subdivisions (d), (g) and (k), provided:

(i) The flare has enforceable South Coast AQMD permit conditions that limits the emissions to not exceed 550 pounds of NOx per year; and

(ii) The flare is in compliance with the permit condition pursuant to clause (n)(8)(A)(i).

(B) An owner or operator of an open flare, which is an unshrouded flare, shall not be required to conduct source testing pursuant to subdivision (k).

(9) Vapor Incinerators

An owner or operator of a vapor incinerator that emits less than 100 pounds of NOx per year shall be exempt from the requirements in subdivision (d) provided the vapor incinerator:

(A) Has enforceable South Coast AQMD permit conditions that limit NOx emissions to less than 100 pounds of NOx per year through operating hours or annual throughput; and

(B) Operates in compliance with the permit condition pursuant to subparagraph (n)(9)(A).

ATTACHMENT A

SUPPLEMENTAL CALCULATIONS

(A-1) Rolling Average Calculation for Emission Data Averaging

$$C_{Avg} = \sum_{i=t}^{t+N-1} C_i/N$$

Where:

C_{Avg} = The average emission concentration at time t

t = Time of average concentration (hours)

C_i = The measured or calculated concentration for a ~~unit~~Unit with a CEMS at the i^{th} subset of data; one-hour for a ~~unit~~Unit with an averaging time of 24 hours or less and 24-hour for a ~~unit~~Unit with an averaging time of greater than 24 hours

N = Averaging time (hours).

(A-2) Interim NOx Emission Rate Calculation

An owner of operator shall calculate interim NOx emission rates as follows:

(A-2.1) Hourly Mass Emissions (lbs/hour)

Sum the actual annual mass emissions of all boilers and process heaters with a rated heat input capacity greater than or equal to 40 MMBtu/hour and any boilers and process heaters with a rated heat input capacity less than 40 MMBtu/hour that operate a certified CEMS, and divide by 8760 hours for lbs per hour.

(A-2.2) Combined Maximum Heat Input (MMBtu/hour)

Sum the combined maximum rated heat input for all boilers and process heaters with a rated heat input capacity greater than or equal to 40 MMBtu/hour and any boilers and process heaters with a rated heat input capacity less than 40 MMBtu/hour that operate a certified CEMS.

(A-2.3) Interim Facility Wide NOx Emission Rate (lbs/MMBtu)

Divide the Hourly Mass Emissions in Section (A-2.1) by the combined Maximum Heat Input in Section (A-2.2) to determine the interim NOx emission rate.

ATTACHMENT B

CALCULATION METHODOLOGY FOR THE I-PLAN, B-PLAN, AND B-CAP

The purpose of this attachment is to provide details regarding how key elements of the I-Plan, B-Plan, and B-Cap are calculated. Key calculations provided in this attachment include: Baseline Unit Emissions and Baseline Facility Emissions; Final Phase Facility BARCT Emission Target; Total Facility NOx Emission Reductions; Phase I, Phase II, or Phase III Facility BARCT Emission Target; Phase I, Phase II or Phase III BARCT Equivalent Mass Emissions for a B-Plan; and Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions for a B-Cap.

(B-1) Baseline Unit Emissions and Baseline Facility Emissions

Baseline Unit Emissions shall be determined by the Executive Officer based on the applica~~7~~ble 2017 NOx Annual Emissions Reporting data, or another representative year, as approved by the Executive Officer, expressed in pounds per year. Baseline Facility Emissions are the sum of all the Baseline Unit Emissions subject to this rule and shall not include Baseline Unit Emissions for ~~units~~Units that are operational on and after [*DATE OF ADOPTION*].

(B-2) Final Phase Facility BARCT Emission Target

The Final Phase Facility BARCT Emission Target is the Phase II Facility BARCT Emission Target for an I-Plan option with two phases or the Phase III Facility BARCT Emission Target for an I-Plan option with three phases. The Final Phase Facility BARCT Emission Target is used to establish the Phase II or Phase III BARCT Emission Target for a B-Cap. To establish the Final Phase Facility BARCT Emission Target, the owner or operator must select if the basis of the emission target for each ~~unit~~Unit will be based on Table 1 or Table 2 NOx concentration limits. The owner or operator shall only select Table 2 NOx concentration limits if the requirements of subparagraphs (d)(2)(A) and (d)(2)(B) for the Conditional NOx Limits are met or if the ~~unit~~Unit is identified in Attachment D. For all other ~~units~~Units, the owner or operator shall use NOx limits from Table 1 as the basis of the Facility BARCT Emission Target. To calculate the Final Phase Facility BARCT Emission Target for B-Cap, the owner or operator shall use NOx concentration limit of Table 1 for the ~~units~~Units that will be decommissioned.

(B-2.1) The Final Phase Facility BARCT Emission Target for a ~~facility~~Facility complying with NOx emission limits in Table 1, an approved B-Plan or an approved B-Cap shall be calculated using the following equation:

$$\text{Final Phase Facility BARCT Emission Target} = \sum_{i=1}^{N} \left(\frac{C_{\text{Table 1 or Table 2}}}{C_{\text{Baseline}}} \times \text{Baseline Unit Emissions} \right)_i$$

Where:

N = Number of included ~~units~~Units in B-Plan or B-Cap

$C_{\text{Table 1 or Table 2}}$ = The applicable NOx concentration limit for each ~~unit~~Unit i included in B-Plan or B-Cap

C_{Baseline} = Representative NOx Concentration as defined in subdivision (c) for ~~unit~~Unit i included in B-Plan

Baseline Unit Emissions = Baseline Unit Emissions for ~~unit~~Unit i as defined in subdivision (c) and included in the I-Plan, B-Plan or B-Cap as determined pursuant to section (B-1).

(B-3) Calculating Total Facility NOx Emission Reductions

Total Facility NOx Emission Reductions is the total reduction in NOx mass emissions per ~~facility~~Facility or ~~facilities~~Facilities with the same ownership that would have been achieved if all ~~units~~Units met the NOx concentration limits in Table 1 or Table 2 of this rule based on the Baseline Facility Emissions.

(B-3.1) For a ~~facility~~Facility complying with NOx emission limits in Table 1 or Table 2, an approved B-Plan or an approved B-Cap, the Total NOx Emission Reductions is the difference between Baseline Facility Emissions and the Final Phase Facility BARCT Emission

Target.

Total Facility NOx Emission Reductions
= Baseline Facility Emissions
− Final Phase Facility BARCT Emission Target

(B-4) Calculating Phase I, Phase II, or Phase III Facility BARCT Emission Target
The Phase I, Phase II, or Phase III Facility BARCT Emission Targets are the total NOx mass emissions per ~~facility~~Facility based on the Total Facility NOx Emission Reductions and the Percent Reduction Target of Phase I, Phase II or Phase III of an I-Plan option in Table 6. ~~For a B-Cap, each phase Facility BARCT Emission Targets shall be reduced by 10 percent.~~

(B-4.1) For the B-Plan and the B-Cap, the Phase I Facility BARCT Emission Target represents the level of NOx emissions that must be achieved based on taking the difference between the Baseline Facility Emissions and applying the selected I-Plan Phase I Percent Reduction Target from Table 6 to the Total NOx Emission Reductions.

$$\text{Phase I Facility BARCT Emission Target}_{\text{B-Plan}} = \text{Baseline Emissions} - (\text{Phase I Percent Reduction Target} \times \text{Total Facility NOx Emission Reductions})$$

~~(B-4.2) For the B-Cap, the Phase I Facility BARCT Emission Target represents the level of NOx emissions that must be achieved based on taking the difference between the Baseline Facility Emissions and applying the selected I-Plan Phase I Percent Reduction Target from Table 6 to the Total NOx Emission Reductions, less 10 percent.~~

~~Phase I Facility BARCT Emission Target$_{\text{B-Cap}}$ = [Baseline Emissions − (Phase I Percent Reduction Target × Total Facility NOx Emission Reductions)] × 0.9~~

(B-4.3) For the B-Plan and the B-Cap, if Phase II is not final phase, Phase II Facility BARCT Emission Target represents the level of NOx emissions that must be achieved based on taking the difference between the Baseline Emissions and applying the selected I-Plan Phase II Percent Reduction Target from Table 6 to the Total NOx Emission Reductions.

$$\text{Phase II Facility BARCT Emission Target}_{\text{B-Plan}} = \text{Baseline Emissions} - (\text{Phase II Percent Reduction Target} \times \text{Total NOx Emission Reductions})$$

~~(B-4.4) For a B-Cap, if Phase II is not final phase, Phase II Facility BARCT Emission Target represents the level of NOx emissions that must be achieved based on taking the difference between the Baseline Emissions and applying the selected I-Plan Phase II Percent Reduction Target from Table 6 to the Total NOx Emission Reductions.~~

~~$$\text{Phase II Facility BARCT Emission Target}_{\text{B-Cap}} = [\text{Baseline Emissions} - (\text{Phase II Percent Reduction Target} \times \text{Total Facility NOx Emission Reductions})] \times 0.9$$~~

(B-4.5) For thea B-Plan and the B-Cap, for the final phase, Phase II for the two phase I-Plan or Phase III for the three phase I-Plan, the Phase II or Phase III Final Facility BARCT is the Final Phase Facility BARCT Target as calculated in Section B-2.1.

$$\text{Phase II or Phase III Facility BARCT Emission Target}_{\text{B-Plan}} = \text{Final Phase Facility BARCT Emission Target}$$

~~(B-4.6) For a B-Cap, for the final phase, Phase II for the two phase I-Plan or Phase III for the three phase I-Plan, the Phase II or Phase III Final Facility BARCT is the Final Phase Facility BARCT Target as calculated in Section B-2.1.~~

~~$$\text{Phase II or Phase III Facility BARCT Emission Target}_{\text{B-Cap}} = (\text{Final Phase Facility BARCT Emission Target}) \times 0.9$$~~

(B-5) Calculating Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions for a B-Plan

The Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions are the total remaining NOx mass emissions per ~~facility~~Facility that incorporates emission reduction strategies designed to meet Phase I, Phase II, or Phase III target reductions in an I-Plan. The Phase I, Phase II, or Phase III BARCT Equivalent Mass Emissions incorporate the Alternative BARCT NOx Limit for Phase I, Phase II, or Phase III each of the ~~units~~Units included in different phases of the I-Plan. The Alternative BARCT NOx Limits are the ~~unit~~Unit specific NOx concentration limit that are selected by the owner or operator in the B-Plan to achieve the Facility BARCT Emission Targets in the aggregate, where the NOx and CO

concentration limits will include the corresponding percent O_2 correction based on the averaging time pursuant to Table 1 or subdivision (k), whichever is applicable. For the B-Plan, decommissioned ~~units~~Units shall be removed from the Baseline Facility Emissions and the Facility BARCT Emission Targets.

(B-5.1) For a B-Plan, the Phase I BARCT Equivalent Mass Emissions for all ~~units~~Units included in a B-Plan shall be calculated using the following equation:

$$\text{Phase I BARCT Equivalent Mass Emissions}_{B-Plan} = \sum_{i=1}^{N} \left(\frac{C_{\text{Phase I Alternative BARCT Emission Limit}}}{C_{\text{Baseline}}} \times \text{Baseline Unit Emissions} \right)_i$$

Where:

N = Number of included ~~units~~Units in B-Plan under Phase I

$C_{\text{Phase I Alternative BARCT Emission Limit}}$ = The applicable Alternative BARCT NOx Limit in an approved B-Plan for ~~unit~~Unit i included in the B-Plan

C_{Baseline} = Representative NOx Concentration as defined in subdivision (c) for ~~unit~~Unit i included in the B-Plan

Baseline Unit Emissions = Baseline Unit Emissions for ~~unit~~Unit i as defined in subdivision (c) and included in the B-Plan.

(B-5.2) For a B-Plan, the Phase II and if applicable, Phase III Equivalent Mass Emissions for each ~~unit~~Unit included in a B-Plan shall be calculated using the equation for Section B-5.1, with the use of the Alternative BARCT NOx Limit for Phase II and Phase III, if applicable.

(B-6) Calculating Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions for a B-Cap

The Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions are the total remaining NOx mass emissions per ~~facility~~Facility that incorporates emission reduction strategies. The Phase I, Phase II, and Phase III BARCT B-Cap Annual Emissions must be at or below the respective Phase I, Phase II, or Phase III Facility BARCT Emission Targets in an I-Plan. Under the B-Cap, there are three emission reduction strategies that can be used to meet the Facility BARCT Emission Targets: Establishing an Alternative BARCT NOx Limit, Permanently Decommissioning Units, Replacing Units, and Reducing Throughput for Units. The Phase I, Phase II, or Phase III BARCT B-Cap Annual Emissions calculation for the B-Cap acknowledges the three emission reduction strategies for each phase of the I- Plan. The Alternative BARCT NOx Limits are the ~~unit~~Unit specific NOx concentration limits that are selected by the owner or operator in the B-Cap to achieve the Final Phase Facility BARCT Emission Target in the aggregate,

where the NOx concentration limit will include the corresponding percent O_2 correction, CO emission limit, and averaging time per Table1. The emission reductions from Decommission Units shall be incorporated in B-Cap pursuant to section (B-2.2). Other reductions in mass emission reductions to demonstrate that the BARCT B-Cap Annual Emissions include emission reductions from reduced throughput, efficiency, reduced capacity, and any other strategy to reduce mass emissions.

(B-6.1) The Phase I BARCT B-Cap Annual Emissions for each ~~unit~~Unit included in a B-Cap shall be calculated using the following equation ~~where the Unit Throughput Reductions calculated pursuant to Section B-7~~.

$$\text{Phase I BARCT B} - \text{Cap Annual Emissions}_{B-Cap} = \sum_{i=1}^{N} \left(\frac{C_{\text{Phase I Alternative BARCT Emission Limit}}}{C_{\text{Baseline}}} \times \text{Baseline Unit Emissions} \right)_i + (0_{\text{Decommissioned Units}})_i - (\text{Throughput or Other Reductions})$$

Where:

N = Number of included ~~units~~Units in B-Cap under Phase I

$C_{\text{Phase I Alternative BARCT Emission Limit}}$ = The applicable Alternative BARCT NOx Limit in an approved B-Cap for ~~unit~~Unit i included in the B-Cap

C_{Baseline} = Representative NOx Concentration as defined in subdivision (c) for ~~unit~~Unit i included in the B-Cap

Baseline Unit Emissions = Baseline Unit Emissions as defined in subdivision (c) and for ~~unit~~Unit i included in the B-Cap

Throughput or Other Reductions = Emission reductions occurred from other than reducing the concentration limit.

(B-6.2) For a B-Cap, the emission reductions the Phase II and if applicable, Phase III BARCT B-Cap Annual Emissions for each ~~unit~~Unit included in a B-Cap shall be calculated using the equation for Section B-6.1, with the use of three emission reduction strategies for Phase II and Phase III, if applicable.

(B-7) Emissions Reductions from Decommissioned Unit

For a B-Cap, emission reductions from decommissioned ~~units~~Units can be used to meet a Phase I, Phase II, or Phase III Facility BARCT Emission Target. The

amount of emission reductions from a permanently decommissioned ~~unit~~Unit shall be determined using the equation below.

Emission Reductions from Permanently Decommissioned Units

$$= \sum_{i=1}^{N} \left(\frac{C_{Table\ 1}}{C_{Baseline}} \times \text{Baseline Unit Emissions} \right)_i$$

Where:

N = Number of permanently decommissioned ~~units~~Units in B-Cap

$C_{Table\ 1}$ = Table 1 NOx concentration limit for ~~unit~~Unit i

$C_{Baseline}$ = Representative NOx Concentration as defined in subdivision (c) for ~~unit~~Unit i included in an approved B-Cap

Baseline Unit Emissions = Baseline Unit Emissions for ~~unit~~Unit i as defined in subdivision (c) and included in an approved B-Cap.

(B-8) Unit Reductions for Conditional NOx and CO Limits in Table 2

An owner or operator of a ~~unit~~Unit in a B-Plan that is demonstrating that the Unit Reduction is less than the thresholds specified in clauses (d)(2)(A)(i) or (d)(2)(A)(ii) shall calculate the Unit Reduction using the following equation:

$$\text{Unit Reduction} = \left(1 - \frac{C_{Table\ 1}}{C_{Baseline}}\right) \times \text{Baseline Unit Emissions}$$

Where:

$C_{Table\ 1}$ = The applicable Table 1 NOx concentration limit the ~~unit~~Unit

$C_{Baseline}$ = Representative NOx Concentration for the ~~unit~~Unit

Baseline Unit Emissions = Baseline Unit Emissions.

ATTACHMENT C

FACILITIES EMISSIONS – BASELINE AND TARGETS

(C-1) Baseline Facility Emissions

Table C-1 provides the Baseline Mass Emissions for Facilities with six or more ~~units~~Units. Baseline Facility Emissions in Table C-1 are based on 2017 reported emissions for Rule 1109.1 ~~units~~Units. A year other than 2017 was used for ~~units~~Units where the 2017 reported emissions were not representative of normal operations.

TABLE C-1: Baseline Mass Emissions for Facilities with Six or More Units

Facility	Facility ID	Baseline Facility Emissions (2017) (tons/year)
AltAir Paramount, LLC	187165	28
Chevron Products Co.	800030	701
Lunday-Thagard Co. DBA World Oil Refining	800080	26
Phillips 66 Company/Los Angeles Refinery	171109	386
Phillips 66 Co/LA Refinery Wilmington PL	171107	462
Tesoro Refining and Marketing Co., LLC – Carson	174655	636
Tesoro Refining and Marketing Co., LLC – Wilmington	800436	674
Tesoro Refining and Marketing Co., LLC – Sulfur Recovery Plant	151798	8
Tesoro Refining and Marketing Co., LLC, Calciner	174591	261
Torrance Refining Company LLC	181667	899
Ultramar Inc.	800026	248
Valero Wilmington Asphalt Plant	800393	5

ATTACHMENT D

UNITS THAT QUALIFY FOR CONDITIONAL LIMITS IN B-PLAN AND B-CAP

TABLE D-1: Units That Qualify for Conditional Limits in B-Plan

Facility ID	Device ID	Size (MMBtu/hr)
171109	D429	352
171109	D78	154
174655	D1465	427
174655	D419	52
174655	D532	255
174655	D63	300
181667	D1236	340
181667	D1239	340
181667	D231	60
181667	D232	60
181667	D234	60
181667	D235	60
181667	D950	64
800026	D1550	245
800026	D6	136
800026	D768	110
800030	D159	176
800030	D160	176
800030	D161	176
800030	D643	220
800030	D82	315
800030	D83	315
800030	D84	219
800436	D1122	140
800436	D384	48
800436	D385	24
800436	D388	147
800436	D388	147
800436	D770	63
800436	D777	146

TABLE D-2: Units That Qualify for Conditional Limits in B-Cap

Facility ID	Device ID	Size (MMBtu/hr)
171107	D220	350
171107	D686	304
171109	D429	352
171109	D78	154
171109	D79	154
174655	D33	252
174655	D419	52
174655	D421	82
174655	D532	255
174655	D539	52
174655	D570	650
181667	D1236	340
181667	D1239	340
181667	D231	60
181667	D232	60
181667	D234	60
181667	D235	60
181667	D920	108
181667	D950	64
800026	D1550	245
800026	D378	128
800026	D429	30
800026	D430	200
800026	D53	68
800026	D6	136
800026	D768	110
800026	D98	57
800030	D453	44
800030	D643	220
800030	D82	315
800030	D83	315
800030	D84	219
800436	D1122	140
800436	D158	204
800436	D250	89
800436	D33	252
800436	D384	48
800436	D385	24
800436	D386	48
800436	D387	71
800436	D388	147
800436	D770	63
800436	D777	146

Attachment 2

Proposed changes to PR 429.1 (August 20, 2021 version)

(Adopted November 5, 2021)
V081821

PROPOSED RULE 429.1 STARTUP AND SHUTDOWN PROVISIONS AT PETROLEUM REFINERIES AND RELATED OPERATIONS

(a) Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx), while not increasing carbon monoxide (CO) emissions, during periods of startup and shutdown, from units at petroleum refineries and facilities with related operations to petroleum refineries.

Commented [A1]: Capitalize all defined terms in the rule.

(b) Applicability

The provisions of this rule shall apply to an owner or operator of units at petroleum refineries and facilities with related operations to petroleum refineries.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) CASTABLE REFRACTORY means refractory that is made by curing liquid material that has been poured into a mold.

(2) CATALYST MAINTENANCE means conditioning, repairing, or replacing the catalyst or ancillary components in NOx post-combustion control equipment associated with a unit ~~which has a bypass stack or duct that exists prior to [*Date of Adoption*]~~.

(3) CATALYST REGENERATION ACTIVITIES means the procedure where air or steam is used to remove coke from the catalyst of a unit or the conditioning of catalyst prior to the startup of a unit.

(4) FACILITY WITH RELATED OPERATIONS TO PETROLEUM REFINERIES as defined in Rule 1109.1 – Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations.

(5) FORMER RECLAIM PETROLEUM REFINERY means a petroleum refinery or a facility with related operations to petroleum refineries, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX – Regional Clean Air Incentives Market (RECLAIM), that has received a final determination notification, and is no longer in the RECLAIM program.

(6) GAS TURBINE means an internal-combustion engine in which the expanding combustion gases drive a turbine which then drives a generator to produce electricity. Gas Turbines can be equipped with a cogeneration gas turbine that recovers heat from the Gas Turbine exhaust and can include a duct burner.

(~~7~~6) MINIMUM OPERATING TEMPERATURE means the minimum operating temperature specified by the manufacturer, unless otherwise defined in the South Coast AQMD permit to operate.

(~~8~~7) NEW PETROLEUM REFINERY means a petroleum refinery or a facility with related operations to a refinery that begins operation after [*Date of Adoption*].

(~~9~~8) NOx POST-COMBUSTION CONTROL EQUIPMENT means air pollution control equipment which eliminates, reduces, or controls the issuance of NOx after combustion.

(10~~9~~) OXIDES OF NITROGEN (NOx) EMISSIONS as defined in Rule 1109.1.

(11~~0~~) PETROLEUM REFINERY as defined in Rule 1109.1.

(12~~1~~) REFRACTORY DRYOUT means the initial application of heat under controlled rates to safely remove water from refractory lining as part of the curing process prior to placing the unit in service.

(13~~2~~) SCHEDULED STARTUP means a planned startup that is specified by January 1 of each year.

(14~~3~~) SHUTDOWN means the time period that begins when an operator reduces the load or heat input, and flue gas temperatures fall below the minimum operating temperature of the NOx post-combustion control equipment, if applicable, and which ends in a period of zero fuel flow or zero feedstock, or when combustion/circulation air flow ends if the unit does not use fuel for combustion.

(15~~4~~) STABLE CONDITIONS means that the fuel flow, fuel composition, or feedstock to a unit, or the combustion/circulation air if the unit does not use fuel for combustion, is consistent and allows for normal operations.

(16~~5~~) STARTUP means the time period that begins when a NOx emitting unit combusts fuel, after a period of zero fuel flow or zero feedstock, or when combustion/circulation air is introduced if the unit does not use fuel for combustion, and ends when the flue gas temperature reaches the minimum operating temperature of the NOx post-combustion control equipment and reaches stable conditions, or when the time limit specified in Table 1 is reached, whichever is sooner.

(17~~6~~) UNIT means equipment that is subject to Rule 1109.1 which includes boilers, flares, fluid catalytic cracking units (FCCUs), gas turbines, petroleum coke calciners, process heaters, steam methane reformer heaters, sulfuric acid furnaces, sulfur recovery units/tail gas incinerators (SRU/TG incinerators), and vapor incinerators, as defined in Rule 1109.1, requiring a South Coast AQMD

permit and not required to comply with a NOx emission limit by other South Coast AQMD Regulation XI rules.

(d) Requirements

(1) An owner or operator of a unit is not subject to the NOx and CO emission limits and the applicable rolling average provisions pursuant to Rule 1109.1 during startup, shutdown, ~~and~~ catalyst maintenance events, and maintenance events related to ammonia injection system equipment.

(2) The owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall not exceed the time allowances specified in Table 1 when emissions from the unit exceed the NOx or CO emission limits established in Rule 1109.1 during a startup or shutdown.

TABLE 1: STARTUP AND SHUTDOWN DURATION LIMITS

Unit Type	Time Allowance When Emissions Exceed Rule 1109.1 Emission Limits (Hours)
Boilers, Gas Turbines, and Process Heaters without NOx Post-Combustion Control Equipment, ~~Gas Turbines,~~ Flares, Vapor Incinerators without NOx Post-Combustion Control Equipment or Castable Refractory	2
Vapor Incinerators with NOx Post-Combustion Control Equipment, Vapor Incinerators with Castable Refractory	20
Boilers, Gas Turbines, and Process Heaters with NOx Post- Combustion Control Equipment, Steam Methane Reformer Heaters, Sulfuric Acid Furnaces	48
Steam Methane Reformers with Gas Turbine	60
FCCUs, Petroleum Coke Calciners, SRU/TG Incinerators	120

Commented [A2]: See comment letter for concerns with this duration limit.

(A) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall not allow a startup to last

longer than the time to reach stable conditions and to reach the minimum operating temperature of the NOx post-combustion control equipment, if applicable.

(3) An owner or operator of a boiler, flare, gas turbine, process heater, steam methane reformer heater, sulfuric acid furnace, or vapor incinerator at a former RECLAIM petroleum refinery or a new petroleum refinery shall not exceed ten scheduled startups per calendar year for each unit.

(4) An owner or operator of a FCCU, petroleum coke calciner, or SRU/TG incinerator at a former RECLAIM petroleum refinery or a new petroleum refinery shall not exceed three scheduled startups per calendar year for each unit.

(5) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall take all reasonable and prudent steps to minimize emissions during startup and shutdown .

(6) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery equipped with NOx post-combustion control equipment shall install and maintain an annually calibrated temperature measuring device at the inlet of the NOx post-combustion control equipment.

(7) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall operate the NOx post-combustion control equipment, if applicable, including the injection of any associated chemical reagent into the exhaust stream to control NOx, if the temperature of the exhaust gas to the inlet of the NOx post-combustion control equipment is greater than or equal to the minimum operating and stable temperature.

(8) An owner or operator of a unit equipped with a NOx post-combustion control equipment at a former RECLAIM petroleum refinery ~~which has a stack or duct that exists prior to [*Date of Adoption*]~~ that allows for the exhaust gas to bypass the NOx post-combustion control equipment and that elects to use a bypass to conduct catalyst maintenance shall:

(A) Not use a bypass if the unit is scheduled to operate continuously for less than five years between planned maintenance shutdowns of the unit;

(B) Not use a bypass to conduct catalyst maintenance for more than 200 hours in a rolling three-year cycle;

(C) Operate the unit at the minimum safe operating rate of the unit when the NOx post-combustion control equipment is bypassed;

~~(D) Submit documentation from the manufacturer of the minimum safe operating rate for the unit being bypassed to the South Coast AQMD;~~

(~~E~~D) Notify the South Coast AQMD by calling 1-800-CUT-SMOG at least 24 hours prior to bypassing the NOx post-combustion control equipment. This notification shall contain the date and estimated time and duration that the NOx post-combustion control equipment will be bypassed; and

(~~F~~E) Continuously monitor NOx and CO emissions with a certified Continuous Emissions Monitoring System (CEMS) pursuant to Rule 218.2 – Continuous Emission Monitoring System: General Provisions and Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications or a contractor approved under the South Coast AQMD Laboratory Approval Program (LAP).

(e) Notification

(1) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall notify the South Coast AQMD by calling 1-800-CUT-SMOG at least 24 hours prior to a scheduled startup. The notification shall contain the date and time the scheduled startup will begin.

(f) Recodkeeping

(1) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall maintain the following records on-site for 5 years and make this information available to the South Coast AQMD upon request:

(A) An operating log for startup, shutdown, refractory dryout, catalyst maintenance, catalyst regeneration activities, initial commissioning of a unit, and initial commissioning of NOx post-combustion control equipment, which contains the date, time, duration, and reason for each event;

(B) A list of scheduled startups;

(C) A list of planned maintenance shutdowns for the next 5 years for each unit equipped with a bypass stack or duct that exists prior to [*Date of Adoption*]; and

(D) NOx and CO emissions data collected pursuant to subparagraph (d)(8)(F).

(2) An owner or operator of a unit equipped with NOx post-combustion control equipment at a former RECLAIM petroleum refinery or a new petroleum

refinery shall maintain on-site documentation from the manufacturer of the minimum operating temperature of the NOx post-combustion control equipment and make this information available to the South Coast AQMD upon request.

(g) Exemptions

(1) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery shall be exempt from the requirements of paragraph (d)(2) during the following:

(A) Refractory dryout;

(B) Catalyst regeneration activities;

(C) Initial commissioning of a unit; ~~and~~

(D) Initial commissioning of NOx post-combustion control equipment; and~~.~~

(E) Electrical testing associated with commissioning of cogeneration control ~~(D)~~ systems following upgrades or repairs~~Initial commissioning of NOx post-combustion control equipment.~~

(2) An owner or operator of a unit at a former RECLAIM petroleum refinery or a new petroleum refinery with a permit condition before [*Date of Adoption*] which allows the use of a bypass to conduct maintenance shall be exempt from the requirements of paragraph (d)(8).