Regulation XIII – New Source Review

February 20, 2020
South Coast AQMD
Call-in #: Ex. 6 PP / Ex. 7(C)
Passcode

Agenda

- Previous Working Group Meeting Summary
- Background
- Reducing Demand of Offsets
- Summary

Previous Working Group Meeting Summary

- Recap of take away points from last working group meeting

Background

- Supply of NOx offsets as RECLAIM facilities transition to command-and-control is a concern
- Availability of offsets are needed to ensure permits can be issued
- Evaluating a variety of areas to reduce the demand and increase supply of offsets
- Working within the regulatory framework of the:
  - Federal Clean Air Act
  - SB288 which prohibits the South Coast AQMD from amending New Source Review rules or regulations to be less stringent than those that existed on December 30, 2002

Initial Concepts for Reducing Demand and Increasing Supply of Offsets

Reducing Demand of Offsets

- Pollutant Thresholds for Major Sources
- Offset Exemptions
- NSR Applicability Using Air Quality Modeling
- Other?

Increasing Supply of Offsets

- Refining BARCT Discounting Methodology
- Conversion of RTCs for ERCs
- Mobile Sources
- Inter-pollutant Trading
- Other?

Framing the Issues

Reducing Demand of Offsets

- Pollutant Thresholds for Major Sources → Question 1: Can a Major Polluting Facility be Defined by Pollutant?
- Offset Exemptions → Question 2: What scenarios are exempt from offsetting when complying with a BARCT rule?
- NSR Applicability Using Air Quality Modeling → Question 3: Can air quality modeling be used to demonstrate no net increase?
- Other? → Seeking input

Question 1: Can a Major Polluting Facility be Defined by Pollutant?

- Background
  - ***Major polluting facility***[1] is defined in Rule 1302 as any facility which emits or has the potential to emit above specific thresholds (next slide)
  - South Coast AQMD BACT Guidelines specifies:

    "If a threshold for <u>any</u> one criteria pollutant is equaled or exceeded, the facility is a major polluting facility, and will be subject to LAER[2] for all pollutants subject to NSR"
  - Under the current BACT Guidelines, a facility may be under the NOx threshold, but exceeds the threshold for another pollutant besides NOx would be considered a major polluting facility for NOx

[1] Federal Clean Air Act uses major source or major stationary source in referencing a major polluting facility
[2] Lowest Achievable Emission Rate (LAER)

Pollutant Thresholds for Major Polluting Facility

- Major polluting facility thresholds are pollutant specific and depend on an area's attainment status designation[1,2]

	Pollutant	South Coast Air Basin	Riverside County Portion of Salton Sea Air Basin	Riverside County Portion of Mojave Desert Air Basin
Regulation XIII Major Polluting Facility PTE Thresholds (tons per year)[2]	VOC	10	25[3]	100
	NOx	10	25[3]	100
	SOx	70	70	100
	PM2.5	70	---	---
	PM10	70	70	100
	CO	50	100	100

[1] Attainment designation based on National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS)
[2] Major source thresholds for attainment areas under Regulation XIII differ from federal major source thresholds
[3] To be changed to 10 tons per year after reclassification of Coachella Valley to "extreme" for 1997 8-hour ozone standard

Discussion and Analysis

- A facility is major under Federal nonattainment NSR only for the nonattainment pollutants which the facility exceeds the major source thresholds
- Staff considered potential need to revise NSR applicability in order to define a major polluting facility based on each individual pollutant
  - Would reduce the demand for offsets when a facility does not exceed the major polluting facility threshold for a specific pollutant
- Further analysis determined:
  - Definition for major polluting facility under South Coast AQMD BACT Guidelines only used for BACT applicability
  - Offsetting for Federal NSR equivalency is based on the federal definition of major polluting facility
    - Offsets required only for emission increases for the pollutants which a facility equals or exceeds the major source thresholds
    - Offsets not required for federal NSR if the emissions or PTE of an individual pollutant is under the major source threshold

U.S. EPA Response to Question 1 : Can a Major Polluting Facility be Defined by Pollutant?

- U.S. EPA's response:
  - Yes, Federal CAA allows Major Polluting Facility (e.i. major source) to be define by pollutant

Recommendation

Recommendation for Question 1: Yes, a Major Polluting Facility can be defined by pollutant.

- Major polluting facility can be defined by pollutant
- No conflict with Federal Clean Air Act or SB288
- Will reduce the demand for offsets, as fewer modifications will be subject to applicability
- Provide additional clarity to Rule 1302 and revise South Coast AQMD BACT Guidelines to define a major polluting facility based on exceeding each individual pollutant threshold

Question 2: What scenarios are exempt from offsetting when complying with a BARCT rule?

- Background
  - Rule 1304 (c)(4) exempts a facility from offsetting if:
    - Source is installed or modified solely to comply with regulations provided there is no increase in maximum rating
    - Exemption for offsets only – no exemption for BACT
  - Federal Clean Air Act (CAA) 182 (e)(2) exempts offsetting in Extreme Areas for:
    - Modification of an existing source if such modification consists of installation of equipment required to comply with the applicable implementation plan, permit, or this chapter
  - CA Health & Safety Code (H&SC) §42301.2 has an offsetting exemption for:
    - Any emission increase at a source that results from the installation, operation, or other implementation of any emission control device or technique used to comply with a district, state, or federal emission control requirement

Discussion and Analysis

- Offsetting exemptions under Rule 1304 (c)(4), Federal CAA 182 (e)(2), and CA H&SC §42301.2 overlap
  - If scenarios qualify for offsetting exemption under Federal CAA 182 (e)(2) and CA H&SC §42301.2, no additional offsetting obligation
    - South Coast AQMD does not need to use internal bank offsets
- Rule 1304 (c)(4), CAA 182 (e)(2), and CA H&SC §42301.2 address retrofits and installation of equipment for regulatory compliance
- Slight differences between Rule 1304 and Federal CAA 182 (e)(2)
  - Rule 1304 (c)(4) limits the exemption to those where there is no increase in maximum rating
- Evaluated five scenarios that may qualify for an exemption from offsets under Rule 1304 (c)(4), Federal CAA 182 (e)(2), and CA H&SC §42301.2

Analysis of Rule 1304 (c)(4)

"The source is installed or modified"	• Can apply to replacement equipment or retrofit
Regulatory Compliance	• Comply with District, state, or federal air pollution control laws, rules, regulations or orders
Other Limitations	• No increase in maximum rating

Rule 1304(c)(4) – Regulatory Compliance

"The source is installed or modified solely to comply with District, state, or federal air pollution control laws, rules, regulations or orders, as approved by the Executive Officer or designee, and provided there is no increase in maximum rating."

Analysis of Federal CAA 182 (e)(2)

"modification of an existing source"	• Federal reference to "existing source" is an existing facility
"modification consists of installation of equipment"	• Can be interpreted as installation of pollution control equipment or replacement equipment (basic equipment)
Regulatory Compliance	• Comply with applicable implementation plan, permit, or this chapter

Federal CAA 182 (e)(2) – Modifications

"The offset requirements of this part shall not be applicable in Extreme Areas to a modification of an existing source if such modification consists of installation of equipment required to comply with the applicable implementation plan, permit, or this chapter."

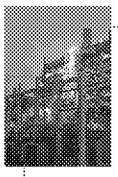
Analysis of Replacement Equipment

- Offsetting exemption under Federal CAA 182 (e)(2) applies to a "modification of an existing source if such modification consists of **installation of equipment** to comply…"
  - Interpreted to include installation of **replacement equipment**
- Under Federal NSR, a replacement unit[1] is an existing emissions unit[2] if:
  - The unit is reconstructed[3] or completely takes the place of an existing unit
  - The unit is identical to or functionally equivalent to the replaced unit
  - The replacement does not alter the basic design parameters of the process unit
  - The replaced unit is permanently removed, disabled, or barred from operation by an enforceable permit

[1] 40 CFR §51.165(a)(1)(xxi)
[2] 40 CFR §51.165(a)(1)(vii)(B)

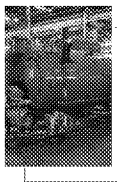
Analysis of Replacement Equipment (*Continued*)

- Equipment replacements cannot change the basic design parameters of the process unit to which the activity pertains
- A process unit could be any collection of structures and/or equipment and contain more than one emissions unit
- Examples of basic design parameters:



Electric Generating Facility (EGF)

- Maximum hourly heat input and maximum hourly fuel consumption rate
- Maximum hourly electric output rate and maximum steam flow rate



Process unit that is not an EGF

- Maximum rate of fuel or heat input
- Maximum rate of material input
- Maximum rate of product output

Analysis of CA H&SC §42301.2

"installation, operation, or other implementation of any emission control device or technique"	• Can be interpreted as installation of pollution control equipment or replacement equipment (basic equipment)
Regulatory Compliance	• Comply with a district, state, or federal emission control requirement (e.g. BARCT)
Other Limitations	• No increase in capacity of the unit being controlled

CA H&SC §42301.2 – Offsetting exemption

"A district shall not require emission offsets for any emission increase at a source that results from the installation, operation, or other implementation of any emission control device or technique used to comply with a district, state, or federal emission control requirement, including, but not limited to, requirements for the use of reasonably available control technology or best available retrofit control technology, unless there is a modification that results in an increase in capacity of the unit being controlled."

Five Scenarios for Question 2

- Scenario 1: What pollutants are exempt from offsetting when retrofitting equipment?
- Scenario 2: Does a like-for-like replacement qualify for the offsetting exemption?
- Scenario 3: Will the replacement of two ore more units with one unit qualify for the offsetting exemption?
- Scenario 4: Will the replacement of one unit with two or more units qualify for the offsetting exemption?
- Scenario 5: Will the replacement of two or more units with two or more units qualify for the offsetting exemption?

Scenario 1: What pollutants are exempt from offsetting when retrofitting equipment?

Example

- SCR is added to comply with the NOx limit in Rule 1146

Question

- Will an increase in PM emissions from SCR be exempt from offsets?

Analysis

- SCR is added to comply with South Coast AQMD rule
- Retrofit consistent with Rule 1304(c)(4), CAA 182(e)(2), and H&SC §42301.2

Recommendation: Co-pollutants associated with retrofitting a unit to comply with a South Coast AQMD ozone precursor rule are exempt from offsetting

Scenario 2: Does a like-for-like replacement qualify for the offsetting exemption?

Example

Facility replaces an existing boiler with a replacement boiler to comply with the NOx limit in Rule 1146

Question

If a unit is being replaced for the purpose of complying with a South Coast AQMD rule, is the replacement unit exempt from offsets?

Analysis

Replacement at BACT, no increase in capacity

Replacement is to comply with South Coast AQMD rule

Rule 1304(c)(4), CAA 182(c)(7), and H&SC §42301.2 all reference "install"

Recommendation: One for one equipment replacement to comply with a South Coast AQMD ozone precursor rule, with no increase in capacity, is exempt from offsetting

Scenario 3: Will the replacement of two or more units with one unit qualify for the offsetting exemption?

Example

Facility replaces two existing small boilers with one large replacement boiler to comply with the NOx limit in Rule 1146

Question

If one unit replaces two or more existing units for the purpose of complying with a South Coast AQMD rule, is the replacement unit exempt from offsets?

Analysis

Replacement at BACT, no increase in total capacity

Replacement is to comply with South Coast AQMD rule

Rule 1304(c)(4), CAA 182(c)(7), and H&SC §42301.2 all reference "install"

Recommendation: An individual piece of equipment replacing two or more units to comply with a South Coast AQMD ozone precursor rule, with no increase in total capacity, is exempt from offsetting

Scenario 4: Will the replacement of one unit with two or more units qualify for the offsetting exemption?

Example

Facility replaces an existing boiler with two or more boilers to comply with the NOx limit in Rule 1146

Question

If a unit is being replaced for the purpose of complying with a South Coast AQMD rule, are the replacement units exempt from offsets?

Analysis

Replacements at BACT, no increase in total capacity

Replacements are to comply with South Coast AQMD rule

Rule 1304(c)(4), CAA 182(e)(2), and H&SC §42301.2 all reference "install"

Recommendation: Two or more pieces of equipment that are replacing one unit to comply with a South Coast AQMD ozone precursor rule, with no increase in total capacity, are exempt from offsetting

Scenario 5: Will the replacement of two or more units with two or more units qualify for the offsetting exemption?

Example

Facility replaces two or more boilers with two or more boilers to comply with the NOx limit in Rule 1146

Question

If units are being replaced for the purpose of complying with a South Coast AQMD rule, are the replacement units exempt from offsets?

Analysis

Replacements at BACT, no increase in total capacity

Replacements are to comply with South Coast AQMD rule

Rule 1304(c)(4), CAA 182(e)(2), and H&SC §42301.2 all reference "install"

Recommendation: Two or more pieces of equipment that are replacing two or more units to comply with a South Coast AQMD ozone precursor rule, with no increase in total capacity, are exempt from offsetting

U.S. EPA Response to Question 2: What scenarios are exempt from offsetting when complying with a BARCT rule?

- Modification cannot be a voluntary expansion, which then installs controls
- Equipment has to be existing or replacement with no increase in capacity
  - Equipment capacity can be based on nameplate
- If modification due to regulatory compliance results in emission increase of co-pollutants, offsetting for co-pollutants is covered by the CAA 182 (e)(2) offsetting exemption

Recommendations Five Scenarios for Question 2

Scenario 1: Co-pollutants associated with retrofitting a unit to comply with a South Coast AQMD ozone precursor rule are exempt from offsetting

Scenario 2: One for one equipment replacement to comply with a South Coast AQMD ozone precursor rule, with no increase in capacity, is exempt from offsetting

Scenario 3: An individual piece of equipment replacing two or more units to comply with a South Coast AQMD ozone precursor rule, with no increase in total capacity, is exempt from offsetting

Scenario 4: Two or more pieces of equipment that are replacing one unit to comply with a South Coast AQMD ozone precursor rule, with no increase in total capacity, are exempt from offsetting

Scenario 5: Two or more pieces of equipment that are replacing two or more units to comply with a South Coast AQMD ozone precursor rule, with no increase in total capacity, are exempt from offsetting

[1] For the scenarios above, equipment replacements would need to meet Federal NSR criteria specified in 40 CFR §51.165(a)(1)(xxi)

Question 3: Can air quality modeling be used to demonstrate no net increase?

- Staff is evaluating the NSR applicability for co-pollutants emitted from the installations and modifications that are needed to comply with a South Coast AQMD rule
- Staff is exploring potential options that would allow some flexibility for BACT and offsetting for co-pollutants, such as:
  - Accounting for co-benefits based on regional or local modeling (e.g., 0.4 pounds of PM reduced for every pound of NOx reduced)
  - Focus is on installation of SCR and applicability of NSR for PM10/PM2.5
- Sought input from U.S. EPA

Question 3: Can air quality modeling be used to demonstrate no net increase? (*Continued*)

- U.S. EPA response:
  - No provisions in the Federal CAA allows modeling for NSR applicability that could be use to relieve a source from NSR requirements
- South Coast AQMD Recommendation:
  - Staff will not pursue air quality modeling as a way to demonstrate no net increase for NSR applicability for co-pollutants

Summary

Next Steps

Increasing Supply of Offsets

- Refining BARCT Discounting Methodology
- Conversion of RTCs for ERCs
- Mobile Sources
- Inter-pollutant Trading
- Other?

Contacts

General RECLAIM Questions	New Source Review	
•Gary Quinn, P.E. Program Supervisor 909-396-3121 gquinn@aqmd.gov	• Michael Morris Planning and Rules Manager 909-396-3282 mmorris@aqmd.gov	•Lizabeth Gomez Air Quality Specialist 909-396-3103 lgomez@aqmd.gov
•Kevin Orellana Program Supervisor 909-396-3492 korellana@aqmd.gov	•Kevin Orellana Program Supervisor 909-396-3492 korellana@aqmd.gov	•Melissa Gamoning Assistant Air Quality Specialist 909-396-3115 mgamoning@aqmd.gov

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