



Proposed Updates to BACT Guidelines

BACT Scientific Review
Committee Meeting #3
2021-2022 Updates

February 23, 2022

Join Zoom Meeting

<https://scaqmd.zoom.us/j/94053989814>

Meeting ID: 940 5398 9814

Call-in number: 1-669-900-6833

Agenda

- Proposed Updates to LAER/BACT Guidelines
- Proposed New/Updates to Part B
- Proposed New/Updates to Part D
- Proposed Amendments to Overview, Parts A and C
- Other BACT Updates
- Discussion
- Next Steps

Proposed Updates to LAER/BACT Guidelines

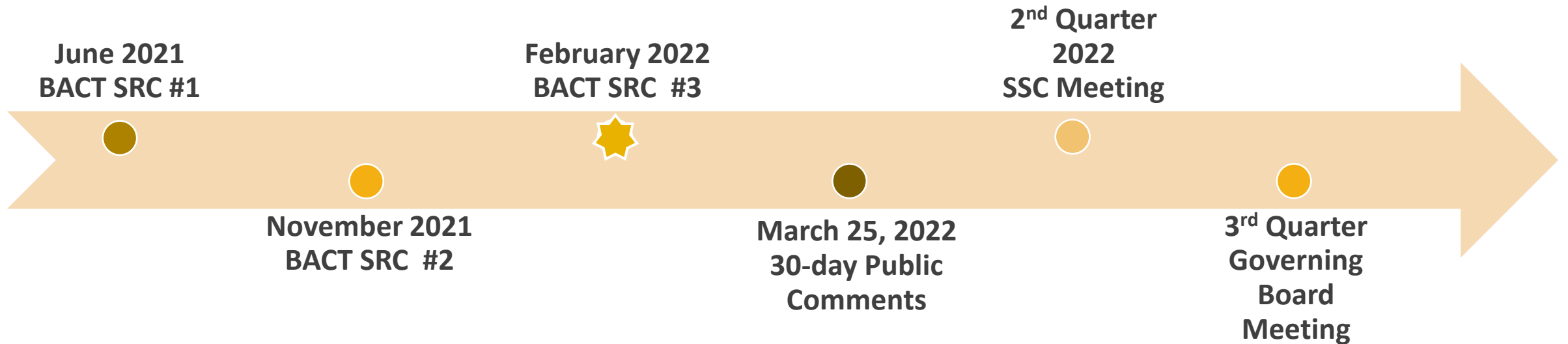
- **Administrative changes to Table of Contents, Overview, Parts A, C, and D**
- **Added section on “Limited BACT Exemption” to Overview, Parts A and C**
- **Part B, Major Polluting Facilities (LAER/BACT) – Section I and Section II**
 - **Proposed Listings Update**
 - Boiler, Fire-Tube, Natural Gas Fired <20 MMBTU/HR
 - Rotary Dryer, Aggregate Facility
 - Roller Coater – Paper and Film, with RTO for VOC Control
 - **Proposed New Listings**
 - I.C. Engine– Stationary, Non-Emergency with SCR, NG Fired
 - Fumigation - Methyl Bromide Fumigation Chamber \geq 100,000 lbs CH₃Br/year
 - I.C. Engine-Compression Ignition \geq 1,000 BHP, Stationary Emergency

Proposed Updates to LAER/BACT Guidelines (Cont'd)

- **Part C, Policy and Procedures: Non-major Polluting Facilities**
 - Update maximum cost effectiveness criteria
- **Part D, Non-Major Polluting Facilities (BACT)**
 - Proposed New Listing
 - I.C. Engine— Stationary, Non-Emergency, Electrical with SCR, NG Fired
 - Clarifications/Updates to Existing Listings
 - Composting
 - I.C. Engine, Stationary, Emergency
 - Open Process Tanks: Chemical Milling (Etching) and Plating
 - Printing (Graphic Arts)

Proposed Updates to LAER/BACT Guidelines (Cont'd)

BACT Guidelines Update Process



Part B- LAER/BACT Determination for Major Polluting Facilities

Section I - SCAQMD LAER/BACT Determinations

Proposed Listing Update

➤ Boiler, Fire-Tube, Natural Gas Fired <20 MMBTU/HR

- Achieved In Practice Case (Permit to Operate Issued: Apr. 2020)
 - Boiler with Low NOx Burner (Max Heat Input Rate: 8.4 MMBTU/HR)
 - Boilers are used to heat process water to keep bacterial culture used to ferment ethanol at the optimal temperature
- Emission Limits:

Emissions *	Current LAER Limit	Source Test**	Proposed LAER Limit
NOx (ppmv)	12	5.7	7
CO (ppmv)	50	<10***	50

* @ 3% O₂ dry

** Source Test performed in 2020 using SCAQMD Test Method 100.1

*** Below the detection of the analytical method



Comment (E-mail June 2021)

CO emissions are below a value stated as the lower detection limit (LDL) for the current analytical method

Response

Non-detectable results are reported with respect to the limit of detection of the analytical method

Part B- LAER/BACT Determination for Major Polluting Facilities

Section I - SCAQMD LAER/BACT Determinations

Proposed Listing Update

➤ Rotary Dryer, Aggregate Facility

- Achieved In Practice Case (Permit to Operate Issued: Jan. 2017)
 - Low NOx Burner, Natural Gas Fired (Max Heat Input Rate: 135 MMBTU/HR)
 - Rotary dryer is used to dry raw aggregate/recycled asphalt products and shingles
- Emission Limits:

Emissions *	Current LAER Limit	Source Test**	Proposed LAER Limit
NOx (ppmv)	33	29	33

* @ 3% O₂ dry

** Source Test performed in 2016 using SCAQMD Test Method 100.1

Comment (E-mail June 2021)	Response
Can the proposed limit be based on the listing include both: either “0.04 lbs/MMBtu” or “33 ppmv @ 3% O ₂ (0.04 lbs/MMBtu)”?	This limit is corrected to 3% O ₂ , so the excess air does not impact it. You can equivalently convert 33 ppm at 3% O ₂ into lbs/MMBTU basis and it could be the same. We can add lb/MMBTU to the determination.

Part B- LAER/BACT Determination for Major Polluting Facilities

Section I - SCAQMD LAER/BACT Determinations

Proposed Listing Update

- **Roller Coater – Paper and Film, with RTO for VOC Control**
 - Achieved In Practice Case (Permit to Operate Issued: Dec. 2016)
 - Manufacturing process involves casting of a vinyl film and application of the adhesive on the film
 - Coatings are applied in PTEs* for 100% collection, which are vented to RTO**
 - Three flow coaters vented to RTO with permit requirement of 1500°F minimum temperature and 97% overall control efficiency
 - Source test performed in 2016
 - 98.9% overall control efficiency
 - SCAQMD Test Methods 25.1/25.3

* Permanent Total Enclosure

**Regenerative Thermal Oxidizer



Part B- LAER/BACT Determination for Major Polluting Facilities

Section I - SCAQMD LAER/BACT Determinations

Proposed New Listing

- **I.C. Engine– Stationary, Non-Emergency with SCR, NG Fired**
 - Achieved In Practice Case(Permit to Operate Issued: Nov. 2020)
 - Cogeneration unit, rated at 1,573 BHP
 - Lean Burn engine with SCR
 - Emission Limits:
 - Ammonia limit: 10 ppm @ 15% O₂
 - Comply with Rule 1110.2 for NO_x, CO and VOC
 - Source test performed in 2019, Test Method
 - 207.1 for Ammonia Slip and 100.1 for NO_x and CO



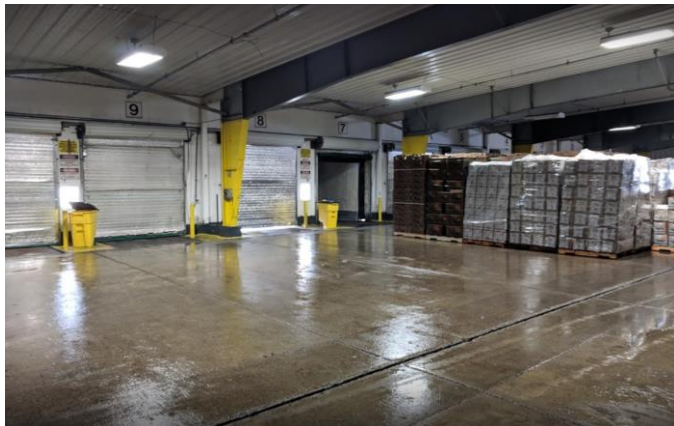
Comments (E-mail June 2021)	Responses
Details on the averaging period and number of measurements needed for NH ₃ ; perhaps part of the method?	The ammonia concentration limit at the exit of SCR has a permit condition and is based on a 60-minute averaging time. It has been included in the LAER/BACT form, Section (4)(A).
CEMS for NH ₃ will be useful.	Currently, we do not have any certification method for ammonia CEMS and only compliance is through SCAQMD method 207.1

Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

- **Fumigation - Methyl Bromide Fumigation Chamber $\geq 100,000$ lbs CH_3Br /year**
 - Achieved In Practice Case (Permit to Operate Issued: Feb. 2014)
 - San Luis Obispo County APCD
 - Using methyl bromide to fumigate vegetables/fruits prior to cooling and shipping
 - 86% overall control efficiency (Carbon Adsorption and Chemical Scrubber)
 - Source test performed in 2013



Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

➤ I.C. Engine-Compression Ignition $\geq 1,000$ BHP, Stationary Emergency including Non-Agricultural and Non-Direct Drive Fire Pump



- Bay Area AQMD and Sacramento Metropolitan AQMD have established BACT Guidance that requires the engines to meet the U.S. EPA's Tier 4 emissions standards
- Achieved In Practice Cases: MWH Data Center, Quincy, WA (2019)
 - 3.0, 1.5 and 1 MW diesel engines (compliance through source test)
- Exhaust Aftertreatment:
 - Each engine is equipped with Selective Catalytic Reduction (SCR) Catalyst and catalyzed Diesel Particulate Filter (DPF) controls to meet with emission requirements of EPA Tier 4 Final Certified engines
- Certification limitations/Inducements/Diesel Exhaust Fluid (DEF) Storage
 - Certified Engine: Equipment includes inducement shutdowns
 - Compliant Engine: Inducement shutdowns not included, with an option to install a larger DEF (urea) tank (DEF tank size variations)

Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

➤ I.C. Engine-Compression Ignition ≥1,000 BHP, Stationary Emergency (Cont'd)

Comments (Letter June 2021)	Responses
What is the basis for proposed Tier 4 Final LAER?	Achieved In Practice (AIP): Permitted Tier 4 compliant emergency engines at the Microsoft MWH Data Center. Tests have been performed at each of the five engine torque load levels (Subpart E of 40 CFR Part 89) and data was reduced to a single-weighted average value. In regard to the low load start up conditions, the Tier 4 standards are based on the weighted average of a five-mode operational test.
EPA's New Source Performance Standards (NSPS) do not require Tier 4 for large engines. Emergency Diesel Engines are also exempt from having to meet EPA's Tier 4 standards by CARB's stationary engine ATCM.	SCAQMD has the authority to establish more stringent standards through the BACT/LAER process. For the reliability criteria of AIP, staff is considering emergency ICEs which have successfully been in operation for at least six months from the date a permit to operate was issued.

Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

➤ I.C. Engine-Compression Ignition $\geq 1,000$ BHP, Stationary Emergency (Cont'd)

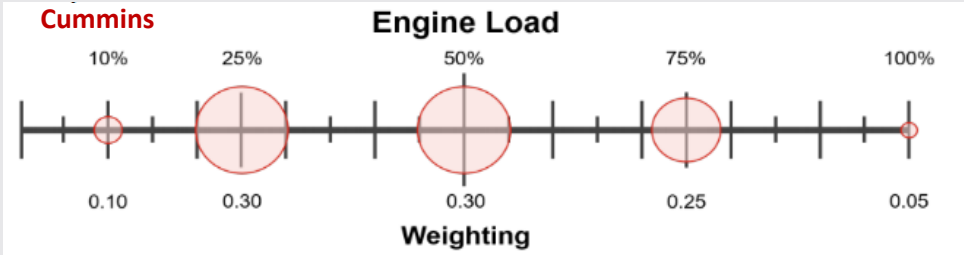
Comments (Letter June 2021)	Responses
Is Tier 4 aftertreatment technologically feasible and cost-effective?	<p>Microsoft MWH Data Center emergency engines are equipped with Selective Catalytic Reduction (SCR) Catalyst and catalyzed Diesel Particulate Filter (DPF) controls to meet emission requirements of EPA Tier 4 Final Certified engines and have successfully been in operation for more than six months from the date a permit to operate was issued.</p> <p>H&SC 40405 defines BACT as the lowest achievable emission rate, which is the more stringent of either</p> <ul style="list-style-type: none">(i) the most stringent emission limitation contained in the SIP, or(ii) the most stringent emission limitation that is AIP. <p>There is no explicit reference or prohibition to cost considerations, and the applicability extends to all permitted sources.</p>

Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

➤ I.C. Engine-Compression Ignition $\geq 1,000$ BHP, Stationary Emergency (Cont'd)

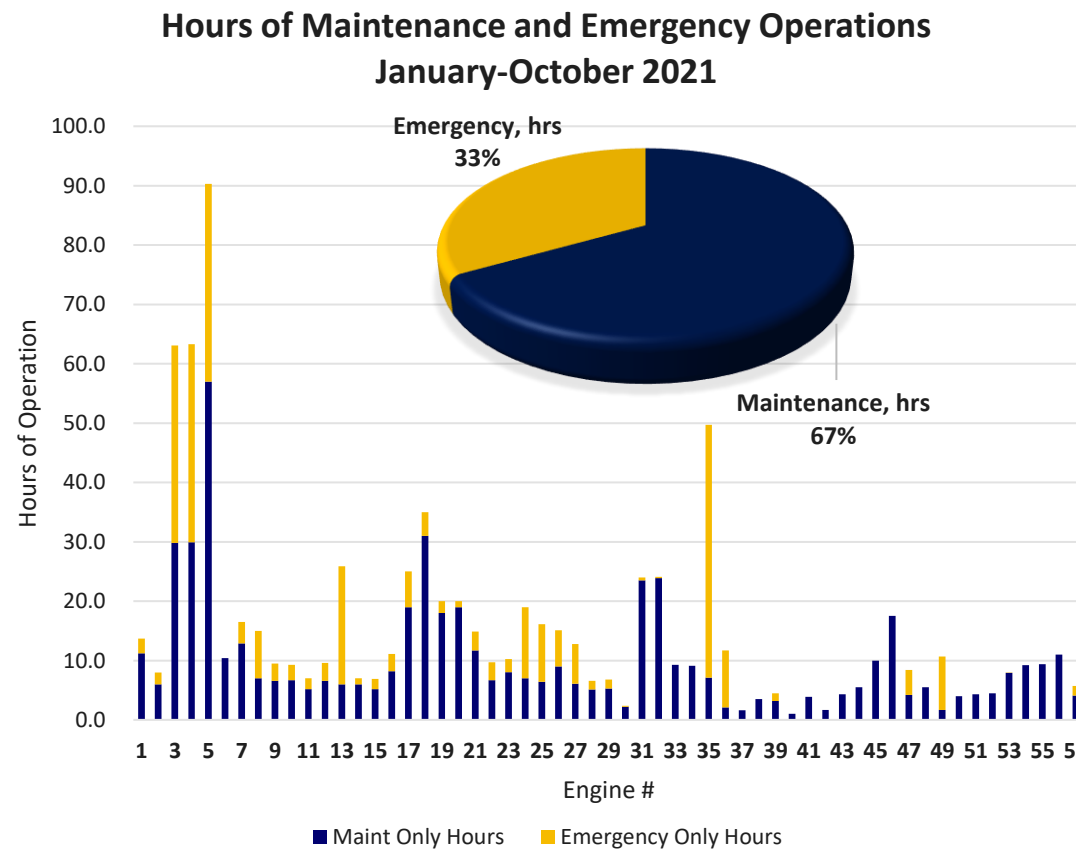
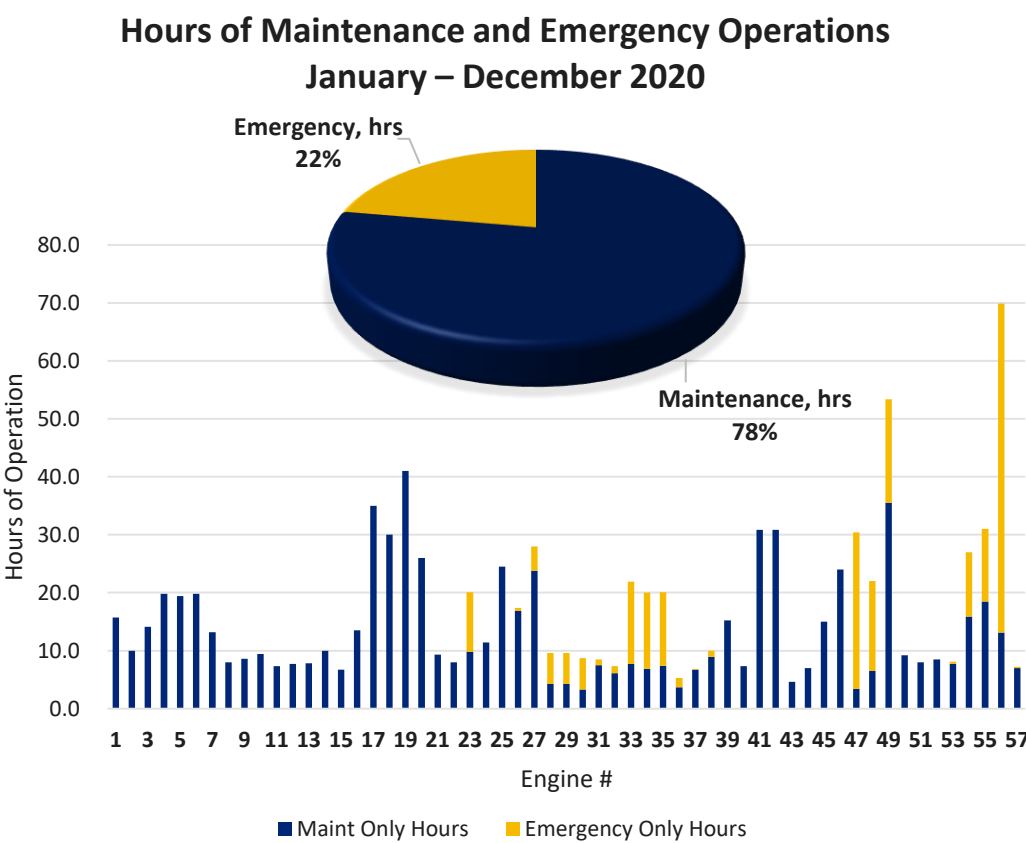
Comments (E-mail June 2021)	Responses
Does the rated value include the auxiliary power devices?	<p>No, the rated value is based on the engine name plate rating.</p> <p>Engine rating MW (BHP): 3.0 (4,277) 1.5 (2,104) 1.0 (1,391)</p>
What does low load mean?	<p>10% of the engine load. Emissions are evaluated on a 5-mode, weighted test cycle average Per ISO 8178 D2 cycle.</p> 
Hold on a focus meeting on ICEs.	<p>Consistent with the Brown Act, a public BACT SRC meeting focused on ICEs was held on November 3, 2021 to address the stakeholders' comments and questions.</p>

Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

- I.C. Engine-Compression Ignition ≥1,000 BHP, Stationary Emergency (Cont'd)
- Hours of Operation - Survey of 57 Engines located at Five Facilities



Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

- **I.C. Engine-Compression Ignition $\geq 1,000$ BHP, Stationary Emergency (Cont'd)**
 - Tier 4 Final Exhaust Emission Standards vs. Tier 2 for Engines over 560 (751 HP)kW

Pollutants	Tier 4 Final	Tier 2	% Reduction
NOx	0.5 g/bhp-hr	4.56 g/bhp-hr	89%
Particulate Matter	0.02 g/bhp-hr	0.15 g/bhp-hr	87%

kW	(HP)	2010	2011	2012	2013	2014	2015	2016	...	2022
>560	(>751)	(NOx+NMHC)/CO/PM (6.4)/3.5/0.20 (gr/kW-hr)	NOx/NMHC/CO/PM 0.67/0.40/3.5/0.10 (gr/kW-hr)				NOx/NMHC/CO/PM 0.67/0.19/3.5/0.03 (gr/kW-hr)			
		Tier 2	Tier 4 Interim				Tier 4 Final			

Part B- LAER/BACT Determination for Major Polluting Facilities

Section II - Other LAER/BACT Determinations

Proposed New Listing

- **I.C. Engine-Compression Ignition $\geq 1,000$ BHP, Stationary Emergency (Cont'd)**
 - Proposed LAER applies to Major Sources and compliance achieved through:
 - EPA-Certified Tier 4 Final ICE; or
 - Tier 4 Final Compliant ICE
-
- Microsoft MWH Data Center Source Test Requirements:
 - Testing shall be performed at each of the five engine torque load levels described in Table 2 of Appx. B to Subpart E of 40 CFR Part 89, and data shall be reduced to a single-weighted average value using the weighting factors
 - BAAQMD Source Test Requirements:

	Initial Source Testing	Follow-up Source Testing
EPA-Certified Tier 4 Engines	Not required	Not required
Tier 4-Compliant (EPA-Certified Tier 2 engines packaged by engine manufacturer with SCR and DPF)	Not required if a District-approved source test has been conducted, and an applicant installs the identical engine/abatement package	Required every 3 years thereafter

Part D- BACT Determination for Non-Major Polluting Facilities

Proposed New Listing

➤ I.C. Engine– Stationary, Non-Emergency, Electrical with SCR, NG Fired

- Achieved In Practice Case (Permit to Operate Issued: Nov. 2020)
 - Cogeneration unit, rated at 1,573 BHP
 - Lean Burn engine with SCR
- Emission Limits:
 - Ammonia limit: 10 ppm @ 15% O₂
 - Comply with Rule 1110.2 for NOX, CO and VOC
- Source test performed in 2019
 - Test Method 207.1 for Ammonia Slip; and
 - Test Method 100.1 for NOX and CO

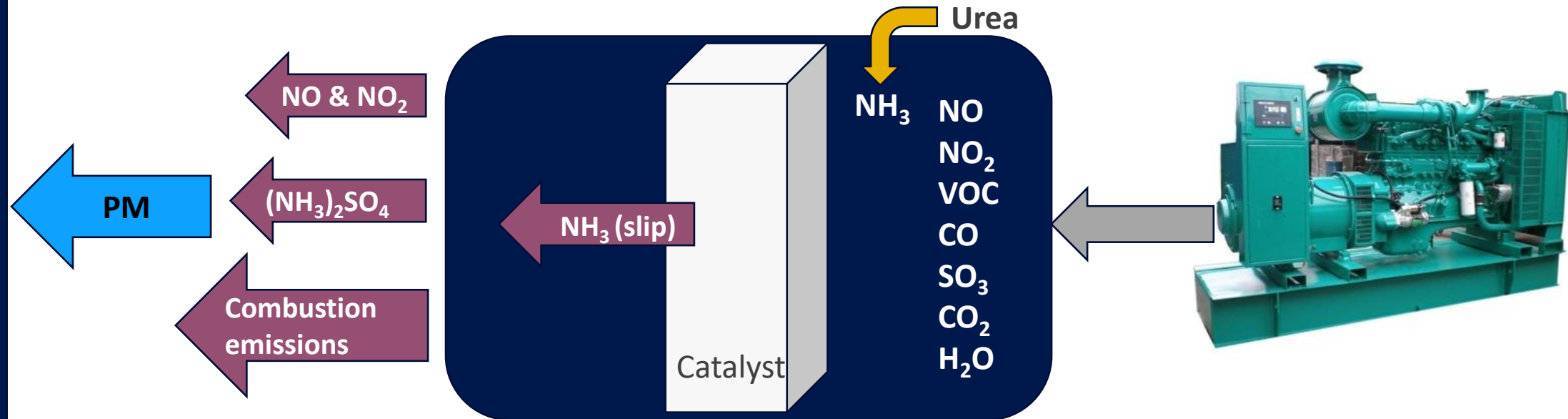
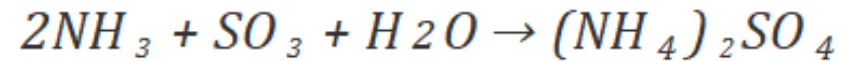


Comment (E-mail June 2021)	Response
Ammonia slip/release in exhaust is precursor to PM as ammonium sulfate and it is not created mainly in the catalyst.	If too much ammonia is injected, the unreacted ammonia results in ammonia slip downstream of the catalyst. To reduce this effect, an ammonia slip catalyst (ASC) can be used but has not been installed on this engine.

Part D- BACT Determination for Non-Major Polluting Facilities

Proposed New Listing

- **I.C. Engine– Stationary, Non-Emergency, Electrical with SCR, NG Fired (Cont'd)**
 - Cost-effectiveness Evaluation (1,573 HP Engine)
 - Assume ammonium sulfate is in a form of PM
 - For most combustion sources, consider PM10 and PM2.5 as the same
 - Ammonium sulfate as precursor for PM2.5 to be used for cost effectiveness



Part D- BACT Determination for Non-Major Polluting Facilities

Proposed New Listing

➤ I.C. Engine– Stationary, Non-Emergency, Electrical with SCR, NG Fired (Cont'd)

- Cost-effectiveness Evaluation

- SCR with urea solution as reductant source installed on 1,573 BHP natural gas engine driving an electrical generator.
- Cost for additional catalyst layer to reduce NH_3 slip from 20 ppm baseline to 10 ppm was provided by catalyst manufacturer with no change on the maintenance costs.

-
- Operating Schedule: 24 hrs/day 365 days/yr
 - SCR Life: 10 years
 - Interest Rate: 4%
 - Capital Cost: \$ 30,000
 - Cost per ton of PM reduced: \$1,268 → **COST EFFECTIVE**
 - MSBACT max. cost effectiveness PM10 (\$/ton): 20,687 INCREMENTAL 4Q 2019
 - MSBACT max. cost effectiveness PM10 (\$/ton): 6,947 AVERAGE 4Q 2019

Part D- BACT Determination for Non-Major Polluting Facilities

Clarifications

➤ Composting

- Added Footnote (b) which was missing in the last two revisions.

12-5-2003 Rev. 0

2-1-2019 Rev. 1

Equipment or Process: Composting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic (Ammonia)
	VOC	NOx	<u>SOx</u>	CO	PM ₁₀	
<u>Co-composting</u> ^{a)}	Compliance with Rule 1133.2 ^{b)} (12-5-2003)					Compliance with Rule 1133.2 ^{b)} (12-5-2003)
<u>Greenwaste composting</u>	Compliance with Rule 1133.3 (2-1-2019)					Compliance with Rule 1133.3 (2-1-2019)

a) Co-composting is composting where biosolids and/or manure are mixed with bulking agents to produce compost.

b) Not required for design capacity < 1,000 tons per year.

Part D- BACT Determination for Non-Major Polluting Facilities

Clarifications (Cont'd)

➤ I.C. Engine, Stationary, Emergency

- Per Rule 1470 to ensure the I.C. Engine located at a sensitive receptor or 50 meters or less from a sensitive receptor meets Diesel PM Standard, footnote (7) has been added:
“BACT PM emission standard requirement for new Stationary Emergency Standby Diesel-Fueled CI Engines located at a sensitive receptor or 50 meters or less from a sensitive receptor.”

Subcategory	Rating/Size	Criteria Pollutants					
		NMHC or VOC	NOx	NOx + NMHC ²	SOx	CO	PM
Compression Ignition, Fire Pump ^{3, 4}	50 ≤ HP < 100			<p><u>Compliance with Rule 1470 (12-02-2016)</u></p> <p><u>Tier 3:</u> 4.7 grams/kW-hr (3.5 grams/bhp-hr) (10-03-2008)</p> <p><u>Compliance with Rule 1470 (12-02-2016)</u></p>	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	<p><u>Compliance with Rule 1470 (12-02-2016)</u></p> <p><u>Tier 3:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)</p> <p><u>Compliance with Rule 1470 (12-02-2016)</u></p>	<p><u>Compliance with Rule 1470 (12-3-2004)</u></p> <p><u>Tier 3:</u> 0.40 grams/kW-hr (0.30 grams/bhp-hr) (10-03-2008)</p> <p><u>Compliance with Rule 1470 (12-3-2004)⁷</u></p>
	100 ≤ HP < 175			<p><u>Compliance with Rule 1470 (12-02-2016)</u></p> <p><u>Tier 3:</u></p>		<p><u>Compliance with Rule 1470 (12-02-2016)</u></p> <p><u>Tier 3:</u></p>	<p><u>Compliance with Rule 1470 (12-3-2004)</u></p> <p><u>Tier 3:</u></p>

Part D- BACT Determination for Non-Major Polluting Facilities

Clarifications (Cont'd)

➤ Open Process Tanks: Chemical Milling (Etching) and Plating

- Added the subcategory "Chemical Milling Tanks" which was left out inadvertently in the previous revision.

|10-20-2000 Rev. 0
2-5-2021 Rev. 1
xx-xx-2022 Rev. 2

Equipment or Process: Open Process Tanks:
Chemical Milling (Etching)
and Plating

		Criteria Pollutants					Inorganic
Subcategory/ Rating/Size		VOC	NOx	SOx	CO	PM ₁₀	
<u>Chemical Milling</u> <u>(xx-xx-2022)</u>	<u>Aluminum and</u> <u>Magnesium ¹</u>						
	<u>Nickel Alloys,</u> <u>Stainless Steel and</u> <u>Titanium</u>		<u>Packed Chemical</u> <u>Scrubber</u> <u>(10-20-2000)</u>			<u>High Efficiency</u> <u>Mist Eliminator</u> <u>(10-20-2000)</u>	
Plating	Decorative Chrome					Compliance with Rule 1469 (2-5-2021)	
	Hard Chrome					Compliance with Rule 1469 (2-5-2021)	

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic South Coast AQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

Part D- BACT Determination for Non-Major Polluting Facilities

Clarifications (Cont'd)

➤ Printing (Graphic Arts)

- Since the emissions of NO_x from oven need to comply with BACT requirements for Other Dryers and Ovens, the table was modified accordingly:

Subcategory	Criteria Pollutants				
	VOC	NO _x	SO _x	CO	PM ₁₀
Flexographic	Inks with ≤ 1.5 Lbs VOC/Gal, Less Water and Less Exempt Compounds (1990); or use of UV/EB or water-based inks/coatings ≤ 180 g VOC/L. Compliance with Rules 1130 and 1171 (2-2-2018)				
<u>Alternatively</u>	For add-on control required by Rule 1130(c)(5) or other South Coast AQMD requirement: EPA M. 204 Permanent Total Enclosure (100% collection) vented to thermal oxidizer with 95% overall control efficiency; Combustion Chamber: Temp ≥ 1500°F ¹ , Retention Time > 0.3 seconds (2-2-2018)	Compliance with <u>BACT requirements</u> for Thermal Oxidizer <u>BACT requirements</u>		Compliance with <u>BACT requirements</u> for Thermal Oxidizer <u>BACT requirements</u>	
Letterpress	Compliance with Rules 1130 and 1171 (12-5-2003)				
Lithographic or Offset, <u>Heatset</u>	Low VOC Fountain Solution (≤ 8% by Vol. VOC); Low VOC (≤ 100 g/l) Blanket and Roller Washes; Oil-Based or UV-Curable Inks; and Compliance with Rules 1130 and 1171 (2-2-18) Oven Vented to a thermal oxidizer (≥ 0.3 Sec. Retention Time at ≥ 1400 °F; 95% Overall Efficiency) (10-20-2000)	Compliance with <u>BACT requirements</u> for Thermal Oxidizer <u>BACT requirements</u> <u>Compliance with BACT requirements for Other Dryers and Ovens</u>		Compliance with <u>BACT requirements</u> for Thermal Oxidizer <u>BACT requirements</u>	Venting to a thermal oxidizer (≥ 0.3 sec. Retention Time at ≥ 1400 °F) (10-20-2000) (2-1-2019)

BACT Guideline Updates

Overview and Part A

- Staff will be adding a BACT exemption for PM₁₀ or SO_x emission increases associated with air pollution control (APC) equipment installations to comply with NO_x BARCT standards, to be consistent with recently amended Rule 1304:
- **BACT Exemption (Rule 1304)**
 - (f)(1) Upon approval by the Executive Officer or designee, new or modified permit unit(s) to install add-on APC equipment for control of NO_x emissions, shall be exempt from the BACT requirement of Rule 1303(a)(1) for any associated increase in PM₁₀ and/or SO_x emissions caused by the operation of the add-on APC equipment provided ...
- Other air districts in California have a similar BACT exemption for sources that are complying with a BARCT requirement
- Rule 1304 amended in November 2021 and the BACT policy will be updated accordingly

Other BACT Updates

Parts C, D and BACT Technical Assessment

➤ Part C - Policy and Procedures, Non-major Polluting Facilities

➤ Update Maximum Cost Effectiveness Criteria in Table 5

Table 5: Maximum Cost Effectiveness Criteria (~~3rd~~ 4th Quarter ~~2020~~ 2021)

Pollutant	Average (Maximum \$ per Ton)	Incremental (Maximum \$ per Ton)
ROG	31,432 <u>38,249</u>	94,297 <u>114,746</u>
NOx	29,721 <u>36,166</u>	89,007 <u>108,308</u>
SOx	15,716 <u>19,124</u>	47,149 <u>57,373</u>
PM ₁₀	7,002 <u>8,521</u>	20,851 <u>25,373</u>
CO	622 <u>757</u>	1,789 <u>2,178</u>

➤ Part D: Updates for Consistency with Rules and Regulations

- Clarifications to Part D listings – more user friendly

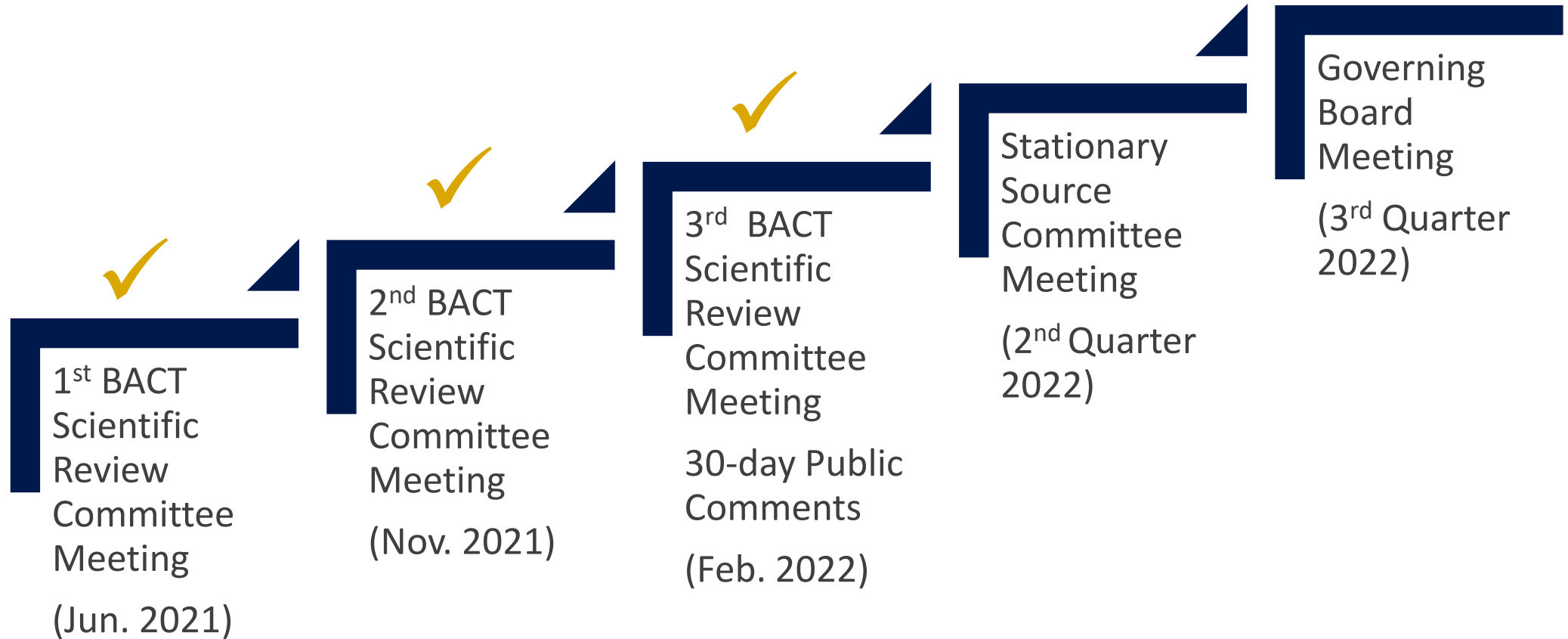
➤ BACT Technical Assessment for Biogas Flares

- Continue to monitor new/existing organic and food waste digestion and co-digestion flare projects for ammonia NOx impacts

Proposed Updates Status Summary of LAER/BACT Determinations

Equipment Category	Current LAER/BACT Limit	Proposed LAER/BACT Limit
Part B, Major Polluting Facilities		
Boiler, Fire-Tube, Natural Gas Fired <20 MMBTU/HR	NOx: 12 ppmv @ 3% O ₂ dry	NOx: 7 ppmv @ 3% O ₂ dry
Rotary Dryer, Aggregate Facility	NOx: 33 ppmv @ 3% O ₂ dry	NOx: 33 ppmv @ 3% O ₂ dry
Roller Coater – Paper and Film, with RTO for VOC Control	RTO overall control eff.: 95%	RTO overall control eff.: 97%
I.C. Engine– Stationary, Non-Emergency with SCR, NG Fired	Not established	Ammonia Slip: 10 ppm @ 15% O ₂
Fumigation - Methyl Bromide Fumigation Chamber ≥ 100,000 lbs CH ₃ Br/year	Not established	Carbon Adsorption and Chemical Scrubber overall control eff.: 86%
I.C. Engine-Compression Ignition ≥1,000 BHP, Stationary Emergency	U.S. EPA' s Tier 2 emissions standards	U.S. EPA' s Tier 4 emissions standards
Part D, Non-Major Polluting Facilities		
I.C. Engine– Stationary, Non-Emergency, Electrical with SCR, NG Fired	Not established	Ammonia Slip: 10 ppm @ 15% O ₂

Next Steps





PLEASE PROVIDE WRITTEN COMMENTS
NO later than March 25, 2022

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