

Pacifico Air Permit Emissions Analysis

The calculations behind the 250 ton per year threshold

September 29, 2026 | Revised October 6, 2026

TCEQ Registration 185019 • Project 413471

Executive summary

Pacifico's publicly released August 2026 application proposes 48 gas turbines and reports 233.61 tons per year (tpy) of nitrogen oxides (NO_x), including startup and shutdown. It applies a 250-tpy major-source threshold under Prevention of Significant Deterioration (PSD) rules. Our review questions eligibility for the requested Electric Generating Unit Standard Permit. [1][2][5]

The Ansaldo worksheet's stated controlled 2 ppm NO_x and 885 MMBtu/hr HHV inputs yield approximately 6.52 lb/hr, versus the listed 4.88 lb/hr, about 34% higher. Reconstructing normal operation for all 48 turbines and changing only the eight Ansaldo rates yields 263.98 tpy using the worksheet schedules specified in this review. This total excludes startup and shutdown; it is not a direct adjustment to 233.61 tpy. [1][3][8]

This result is conditional, not a final determination of potential to emit. Supported equipment guarantees, physical constraints and qualifying enforceable restrictions could justify a lower total. TCEQ must establish which concentration, heat-input and mass-rate values occur together across allowed operating conditions. [9]

The review also identifies an apparent PGM70 counting error, conflicting SMT60 hours, and questions about annual limits and compliance verification. Informed by engineering work supplied by an Environmental Integrity Project analyst, it covers the public 54-page August application and corrected workbook. We do not represent the August file as the latest operative submission. [1][3]

Before approval, TCEQ should identify the operative application and revisions, reconcile the calculations, substantiate maximum emissions and document enforceable restrictions and compliance methods supporting the permitting route.

What is being measured

A gas turbine burns fuel to turn machinery that generates electricity. This process produces nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), particulate matter (PM), sulfur dioxide (SO₂), and formaldehyde. Pollution controls reduce some emissions; enforceable restrictions on fuel use or operation can also limit annual emissions.

NO_x contributes to the formation of ozone in the atmosphere. Ozone is formed through reactions involving pollutants such as NO_x and VOCs; it is not simply emitted from the turbine stack. The NO_x calculation is particularly important here because the application places it closest to the 250-tpy PSD threshold. [1][4]

The following terms describe emissions and the operating inputs used to calculate them:

Table 1 Terms used in the emissions calculations

Term	What it tells us
Parts per million, or ppm	The concentration of a pollutant in exhaust gas. Concentration alone does not tell us the total amount leaving the stack or emission point.
Pounds per hour, or lb/hr	The mass of pollution released in an hour. This connects directly to annual emissions.
Tons per year, or tpy	The annual mass. Here, one ton means 2,000 pounds.
Heat input, in MMBtu/hr	The energy in the fuel burned each hour. One MMBtu is one million British thermal units. This is fuel energy, not electrical output.
Steady-state or normal operation	Operation after the turbine reaches stable conditions, separate from starting and stopping.
Potential to emit, or PTE	The maximum emissions under the equipment's physical and operational design, accounting for qualifying enforceable restrictions. PTE is different from emissions expected in an ordinary year or actually measured after operation.

For a constant hourly rate, the basic annual calculation is straightforward:

Emission Rate (lb/hour) × Operation (hr/year) × Number of Turbines ÷ 2,000 (lb/ton) = tons per year.

The annual calculation depends on several essential questions:

- What supports the hourly emission rates across the allowed operating conditions?
- How will emissions and pollution-control performance be measured or otherwise verified?
- Are all turbines identified and counted correctly?
- Which enforceable restrictions limit annual operation or emissions, and how will compliance be monitored?

Why the 250 tpy threshold matters

Pacífico is seeking an **Electric Generating Unit Standard Permit**, a permitting route with standardized requirements. Texas rules exclude new major sources subject to the federal Prevention of Significant Deterioration program, known as **PSD**, from this standard-permit route. [5]

Pacifico’s August application applies the 250-tpy PSD threshold to its proposed simple-cycle gas turbines. Certain industries listed in the regulation, including qualifying fossil-fuel-fired steam-electric plants, use a 100-tpy threshold. This distinction concerns facility type rather than electrical generating capacity. Under the category assumed here, reaching 250 tpy or more of any one regulated pollutant makes the source major. The threshold applies to the relevant source as a whole, with a separate total for each pollutant; it is not a separate allowance for each turbine. [1][2]

PSD requires preconstruction review, a case-specific evaluation of pollution controls, air-quality analysis, and public participation. Once a new source is major, its best available control technology review covers regulated pollutants emitted in significant amounts, including pollutants below 250 tpy. Triggering PSD requires the appropriate permitting review; it does not, by itself, mean the project can never be permitted. [6]

Title V is a separate federal operating-permit program, generally triggered at 100 tpy of a regulated air pollutant, with additional thresholds for hazardous air pollutants. Pacifico’s application already acknowledges that the facility will be major for Title V while claiming it will be minor for PSD. Those two classifications can legally coexist. [1][7]

The specific question examined here is whether the PTE calculations and permit restrictions support **PSD minor-source status and eligibility for the requested standard permit**.

The disputed Ansaldo emission rate

The application’s Ansaldo AE64.3A worksheet supplies these inputs for each of eight turbines: [1, PDF p. 52]

Table 2 Ansaldo inputs from the application

Input	Application value
Maximum fuel heat input, higher-heating-value basis	885 MMBtu/hr
Controlled NO _x concentration, referenced to 15% oxygen	2 ppm
Controlled NO _x mass-emission rate	4.88 lb/hr
Normal operating hours used in the annual estimate	4,380 hours per turbine
Number of turbines	8

The worksheet attributes its emissions figures to manufacturer guarantee information provided to the consultant (Trinity). It describes the heat input and emissions as maximum values across operating scenarios, including different loads and ambient temperatures.

The application itself prints ppm-to-lb/hr calculations for formaldehyde and ammonia in footnotes 8 and 9 on the Ansaldo sheet. Those calculations use the same natural-gas exhaust factor, standard gas volume, oxygen correction and heat input used in our cross-check. Applying that convention to the stated 2 ppm NO_x and 885 MMBtu/hr gives approximately 6.52 lb/hr. EPA Method 19 supports the conversion factors; the technical appendix shows the calculation and assumptions. The nearby formulas do not establish how the separate NO_x manufacturer guarantee was developed. [1, PDF p. 52][8]

The increase is 1.64 lb/hr per turbine, or **28.76 tpy** across eight turbines operating 4,380 hours each. Calculations use unrounded hourly rates.

Table 3 Annual NO_x comparison for the eight Ansaldo turbines

Normal-operation calculation	Annual NO _x , all eight turbines
Using the application's 4.88 lb/hr	85.50 tpy
Using the calculated 6.52 lb/hr	114.25 tpy
Difference	28.76 tpy

The 28.76-tpy difference exceeds the application's reported 16.39-tpy margin below the PSD threshold. A sitewide calculation must also account for all turbines and use a consistent basis for normal operation and startup/shutdown.

What the sitewide calculation shows

We recalculated normal-operation emissions using the stated turbine counts, hourly rates, and operating hours below. We then **changed only the Ansaldo hourly rate**. Both columns exclude startup and shutdown.

Table 4 Normal operation NO_x for all 48 turbines

Turbine family	Units	Normal hours per unit/year	NO _x rate, lb/hr	Normal NO _x at application rates, tpy	Normal NO _x with Ansaldo change, tpy
Baker Hughes NovaLT16	6	7,008	1.75	36.79	36.79
Solar PGM70	11	4,380	0.60	14.45	14.45
Solar SMT60	8	4,380*	0.50	8.76	8.76
GE Frame 6B	6	5,256	4.67	73.64	73.64
Solar Titan 130	9	2,628	1.36	16.08	16.08
Ansaldo AE64.3A	8	4,380	4.88 → 6.52	85.50	114.25
Total, before startup/shutdown	48			235.22	263.98

* SMT60 uses the detail sheet's 4,380 normal hours; the summary shows 8,760. The conflict is discussed below. Totals use unrounded calculations. These schedules are calculation assumptions, not established operating caps.

Our reconstructed normal-operation total is **235.22 tpy**. It differs from the application's published 233.61-tpy total, which **includes startup/shutdown emissions** and contains an apparent turbine-counting error. Changing only the Ansaldo hourly rate adds 28.76 tpy to our normal-operation reconstruction, producing **263.98 tpy before startup/shutdown**. The three totals therefore represent different calculations. [1, PDF pp. 36–38, 41, 53]

Table 5 Reconciling the three NO_x totals

NO _x total, tpy	Calculation basis
233.61	Published application total; includes startup/shutdown and the apparent PGM70 counting error.
235.22	Reconstructed normal operation; all 48 turbines at application hourly rates.
263.98	Same normal-operation reconstruction; only the Ansaldo hourly rate changes to approximately 6.52 lb/hr.

This focused calculation does not increase the other turbines’ hourly rates, assume continuous year-round operation, or adopt the independent analyst’s startup/shutdown factors. It already counts all 48 turbines.

How the lower rate could be justified

At the stated heat input of 885 MMBtu/hr HHV, a concentration of 2 ppm corresponds to approximately 6.52 lb/hr. The application’s lower 4.88-lb/hr rate could still be a valid, separately supported maximum.

At 885 MMBtu/hr HHV, a mass rate of 4.88 lb/hr corresponds to **approximately 1.50 ppm** under the same conversion. If the proposed turbine and controls are guaranteed to stay at or below that lower concentration at maximum fuel input, and within 4.88 lb/hr across all other allowed conditions, the lower mass rate could be justified.

Alternatively, the maximum heat input and the maximum emissions concentration might occur under different operating conditions. A calculation that combines separate maxima can overstate the maximum achievable mass rate.

A reproducible conversion alone does not establish final PTE. TCEQ needs project-specific data showing which heat inputs, emission concentrations, and mass rates occur together, plus the restrictions that make the supported hourly and annual emission limits binding. Manufacturer guarantees with supporting tests or validated calculations could supply that evidence.

The applicant should document the maximum hourly mass-emission rate for the proposed turbine and controls across the permitted operating range, and reconcile it with the concentration-based calculation.

The same pattern in carbon monoxide

The Ansaldo worksheet lists controlled carbon monoxide (CO) at 2 ppm and 2.97 lb/hr. Using the stated concentration, 885-MMBtu/hr heat input and the same conversion convention yields approximately 3.97 lb/hr. Both filed mass rates are about 74.8% of their concentration-based estimates. This close correspondence suggests a common basis or input issue that TCEQ should investigate. [1, PDF p. 52][8]

Table 6 Comparing the Ansaldo NO_x and CO rates

Pollutant	Application rate lb/hr	Calculated rate lb/hr	Application as a share of calculated rate
NO _x	4.88	6.52	74.83%
CO	2.97	3.97	74.81%

Changing only the heat input to approximately 662 MMBtu/hr HHV, or only the oxygen reference to approximately 13% instead of 15%, would approximately reproduce both application rates. These are mathematical checks; they do not establish that either basis was actually used. A fraction of maximum heat input also does not necessarily equal the same fraction of electrical load.

The pattern makes the question more specific: What shared basis supports the NO_x and CO mass rates, and do the underlying guarantees cover every allowed operating condition? A valid maximum mass rate could occur at part load if concentrations fall sufficiently at higher loads. TCEQ needs the operating curves or equivalent supporting data to distinguish that explanation from an understated maximum.

The output based limit and annual tonnage

The EGU standard permit also limits NO_x per unit of electricity generated. Pounds per megawatt-hour, or lb/MWh, measures pollution for each megawatt-hour of electrical output. For these Ansaldo units operating more than 300 hours per year, the standard is 0.14 lb/MWh. At the application's stated 83.555-MW output, 6.52 lb/hr corresponds to approximately 0.078 lb/MWh, below that standard. [1, PDF p. 52][5]

This particular comparison does not demonstrate an exceedance of the output-based limit or establish compliance across all loads and operating modes. Annual emissions could still reach the PSD threshold even while meeting that performance standard. TCEQ must substantiate the maximum hourly mass rate and the binding annual operating or emissions basis.

Additional counting and operating hour discrepancies

Eleven turbines listed but apparently six counted

The application lists **11 Solar PGM70 turbines**. Its displayed annual NO_x figure is **1.33 tons per turbine**, but its sitewide PGM70 NO_x total is **7.98 tons**. [1, PDF pp. 36, 40–41]

The multiplication is revealing:

- **1.33 tpy/unit × 6 units = 7.98 tpy**, the displayed permit total.
- **1.33 tpy/unit × 11 units = 14.63 tpy**, the total corresponding to the listed permit fleet.

The same six-unit multiplication appears in the CO, PM, combined PM₁₀/PM_{2.5}, SO₂ and VOC columns, while ammonia uses 11 units. This repeated pattern strongly suggests a counting or calculation-reference error rather than rounding. [1, PDF p. 36]

The generating-capacity summary supplies another check. Using its listed MW-per-unit figures, the fleet totals 1,325.76 MW with 11 PGM70 turbines, but only 1,280.76 MW with six. The application's stated approximately 1,326-MW capacity therefore corroborates the 11-unit count. [1, PDF p. 36]

Applying the stated 11-unit count to the displayed NO_x values adds **6.65 tpy**, moving the published total from 233.61 to **approximately 240.26 tpy** before addressing the Ansaldo issue. This comparison uses the application's displayed annual figures, including startup/shutdown, rather than our normal-operation reconstruction. It does not cross 250 tpy, but it consumes a substantial part of the remaining margin.

Our normal-operation reconstruction in Table 4 already counts all 11 PGM70 turbines. The separate 6.65-tpy counting adjustment **must not be added again** to its 263.98-tpy total. TCEQ should confirm whether a later revision corrected the underlying formulas and every affected pollutant.

Conflicting operating hours for the Solar SMT60 turbines

The emissions summary presents the eight SMT60 turbines at **100% annual utilization and 8,760 normal operating hours**. Their detailed worksheet instead uses **4,380 normal hours plus 20 startup/shutdown hours**, and the annual emissions follow the lower schedule. [1, PDF pp. 36, 43–44]

We have used the lower normal-operation schedule (4,380 hours) in the focused NO_x calculation. But TCEQ should reconcile the two representations and identify the binding annual basis. Normal operation, startup, and shutdown also need to fit within the available hours of the year without double counting.

What keeps annual emissions below 250 tpy

Even a correct hourly rate cannot establish annual emissions without an enforceable operating basis.

The application uses normal-operation schedules ranging from 2,628 to 7,008 hr/yr per turbine. Yet its worksheets expressly say the operating scenarios used for estimation are not limits on maximum operating hours, startup/shutdown events, or natural-gas firing. The application proposes tracking actual operation to demonstrate compliance with emission limits. [1, PDF pp. 38, 41, 44, 53]

TCEQ therefore needs to identify which restrictions actually limit the project's PTE. PTE concerns maximum emissions under the source's physical and operational design, accounting for qualifying enforceable restrictions; expected actual use alone does not establish it.

Texas's definition allows qualifying enforceable controls and operating restrictions to reduce PTE. A forecast of lower use, by itself, is not equivalent to such a restriction. [9]

The generic EGU standard permit establishes NO_x performance limits, fuel requirements, certification and operating records, but does not itself set a fixed annual tonnage cap for this project. The registration and its applicable conditions must therefore identify the basis that limits annual emissions. [5]

Texas rules make registration representations about operating procedures, pollution controls and maximum emission rates conditions of the standard permit. We therefore cannot conclude that the project has no enforceable restrictions merely because a worksheet says its operating-hour scenarios are not limits. TCEQ should identify the specific representations and conditions it will credit, including any later revisions. [5]

The question is more specific: Which hourly and annual limits will bind each unit and the source as a whole, over what averaging period, and how will compliance be demonstrated?

A screening calculation shows why this matters. The application's own normal-operation NO_x rates, multiplied by the full turbine counts, total **100.40 lb/hr**. Multiplying that rate by 8,760 hours yields **439.75 tpy** before startup/shutdown. This screen uses the application's lower Ansaldo mass rate and excludes startup/shutdown emissions.

This screen is not a determination of lawful or physically achievable PTE. It does not establish that every turbine can operate at its individual maximum simultaneously throughout a year. It shows why TCEQ must identify and substantiate the enforceable restrictions or demonstrated physical constraints supporting the lower annual total.

An annual emissions cap could be relevant, as could restrictions on fuel, operating hours, turbine combinations, or control-system operation. The compliance method matters as much as the stated limit. If emissions are calculated by multiplying hours by an unsupported hourly rate, the resulting records could understate emissions while appearing to demonstrate compliance.

EPA's guidance calls for technically accurate restrictions, a defined compliance period, and suitable monitoring, recordkeeping, and reporting. TCEQ should explain how the proposed authorization meets those requirements, including how turbine loads, pollution-control performance, and startup/shutdown events will be accounted for. [10]

A 2005 EPA appeals decision illustrates why the reliability of the numbers matters. In Peabody Western Coal Company, EPA's Environmental Appeals Board upheld the agency's refusal to accept a proposed emissions cap supported by unverified emission factors and assumed control performance. An earlier estimate of 244 tpy, close to the 250-tpy threshold, had heightened concern about whether monitoring could demonstrate compliance. The case involved coal dust, whose measurement differs from turbine exhaust. It supports scrutiny

of both the calculation and the compliance method; it does not prescribe a particular monitoring system for Pacifico. [11]

What the manufacturer sheets clarify

We reviewed documentation covering all six turbine families. These are useful checks, but generic product ratings and project-specific guarantees answer different questions. [12]

The Ansaldo brochure lists **78 MW** at standardized conditions, while the application lists **83.555 MW** and a maximum heat input of 885 MMBtu/hr on a higher-heating-value (HHV) basis. Different configurations or operating conditions could explain the different ratings. The brochure does not independently establish the proposed equipment's maximum fuel input or resolve the 4.88-versus-6.52-lb/hr NO_x discrepancy. [1, PDF p. 52] [12]

Some manufacturer ratings use lower heating value (LHV). HHV and LHV are different conventions for expressing the energy in the same fuel consumption, rather than different operating loads. Comparisons must use a matching basis. Our NO_x conversion uses the application's 885 MMBtu/hr HHV value, consistent with Method 19's factor. [8][12]

For the Solar PGM70, the published nominal output and heat rate imply approximately 81.15 MMBtu/hr LHV, closely matching the application's 81 MMBtu/hr LHV. That supports the input's plausibility on the same energy basis. It does not establish whether a nominal rating represents the maximum across the proposed range of ambient temperatures and loads. [1][12]

Several sheets describe low-NO_x combustion built into the turbine. The application also proposes downstream **selective catalytic reduction**, or SCR, which further reduces NO_x. Brochure figures describing turbine combustion performance cannot simply be substituted for the application's post-SCR concentration.

The 6.52 lb/hr calculation already uses the application's **controlled** 2 ppm value. Applying an additional SCR reduction to that result would count the same control benefit twice.

Startup and shutdown emissions

Pollution rates change while a turbine starts, warms up, changes combustion mode, or shuts down. Pollution controls perform differently during those periods. Their emissions must be included in the PTE calculation.

The application includes startup/shutdown emission estimates for all six turbine families, but the released materials do not provide the underlying test results, manufacturer documentation, or engineering analysis substantiating those estimates. TCEQ should require support for emissions per event, event durations, and the assumptions about when pollution controls become effective. It should also establish how event frequency and emissions during these periods will be tracked and constrained. [1, PDF pp. 36, 38, 41, 44, 47, 50, 53]

The corrected independent workbook reports **311.77 tpy** of NO_x, combining its normal-operation calculations with startup/shutdown estimates based on generic EPA AP-42 factors. [3]

We are not presenting 311.77 tpy as a verified project maximum. EPA describes AP-42 factors as averages drawn from groups of sources, and the turbine chapter's cited factors are based on high-load operation. Applying them to startup/shutdown needs justification. EPA also identifies representative vendor guarantees and comparable equipment tests as potentially better permitting inputs than generic factors. [13][14]

The questions concern emissions per start and shutdown, event duration, combustion-control transitions, SCR operating conditions, and enforceable accounting for the number and type of events. These issues deserve

review. The focused 263.98-tpy normal-operation result does not rely on substituting generic AP-42 factors for the application’s startup/shutdown estimates.

VOCs and particulate matter

Volatile organic compounds, or VOCs, and particulate matter, or PM, also deserve scrutiny. The application and the corrected independent workbook report different annual estimates. Both include their respective startup/shutdown assumptions; the independent figures are research estimates, not established project maxima. [1, PDF p. 36][3]

Table 7 Comparing the annual VOC and PM estimates

Pollutant	Application tpy	Independent workbook tpy
VOCs	108.14	105.85
PM	207.83	232.31

All four estimates are below the 250-tpy PSD threshold used in the application. Their exceeding 100 tpy should not be presented as a newly discovered Title V problem: the application already acknowledges Title V applicability. The 24.48-tpy difference between the two PM estimates warrants reconciliation of their emission factors and measurement bases.

For the Baker Hughes turbines, the application uses a PM rate of **0.36 lb/hr per turbine**, attributed to manufacturer information. The independent workbook substitutes the AP-42 total-PM factor, producing **approximately 1.21 lb/hr** at the stated fuel input. The proposed SCR and oxidation catalysts control gaseous pollutants; the absence of a dedicated particulate-control device does not by itself establish that the manufacturer’s rate is wrong or that the generic factor is the correct replacement. [1][3][13][14]

TCEQ should establish whether the 0.36-lb/hr figure includes both **filterable particles**, captured as particles in a stack test, and **condensable material**, which forms particles as exhaust cools. As a numerical cross-check, AP-42’s filterable-only factor produces about **0.35 lb/hr** at that fuel input—close to the application’s figure. That resemblance is a reason to ask about the measurement basis, not proof that condensable PM was omitted.

The AP-42 PM factors have their own limitations, including their underlying turbine-control configurations. A properly supported, representative manufacturer guarantee could be more appropriate than substituting a generic factor. [13][14]

These pollutants also matter if NO_x makes the new source major for PSD. A new major source’s best available control technology (BACT) review extends to other regulated pollutants emitted in significant amounts. Relevant significance levels are 40 tpy for VOCs, 25 tpy for PM, 15 tpy for PM₁₀, and 10 tpy for PM_{2.5}. Each pollutant need not separately reach 250 tpy for that requirement to apply. PM₁₀ and PM_{2.5} identify progressively smaller particle sizes; these overlapping categories should not be added together. [6]

What TCEQ should resolve before approval

Lost Pines Watch requests a written determination addressing the following:

1. **Reconcile the Ansaldo maximum hourly emission rates and provide both pollutant conversions.** Explain the relationship among 2 ppm NO_x, 885 MMBtu/hr HHV and 4.88 lb/hr, and among 2 ppm CO and 2.97 lb/hr. Identify the basis behind the nearly equal 74.8% ratios to the concentration-based estimates. Provide

the complete conversions, including oxygen references, wet or dry basis, standard temperature and pressure, exhaust flow or heat input, and conversion factors. Supply operating curves or equivalent evidence showing which concentrations, heat inputs and mass rates occur together, and demonstrate the maximum across every allowed load, ambient condition and turbine/control configuration.

2. **Provide certified manufacturer documentation supporting assumptions for all six turbine families.** Supply the relevant specification sheets and emission guarantees for each proposed turbine and control configuration across the allowed operating range, with supporting test results or validated manufacturer calculations. Identify maximum fuel flow and heat input, the fuel heating value, the HHV or LHV basis, and standard conditions. Show which emission concentration, heat-input and mass-emission values occur together. If the application tables use another basis, identify and substantiate it.
3. **Provide a reproducible PTE calculation.** Identify the latest application and supplements, correct the PGM70 count, resolve the SMT60 hours, and show normal-operation and startup/shutdown totals separately for every pollutant and every turbine.
4. **Account for every proposed emitting unit and define the source boundary.** Reconcile the final equipment inventory with the project's plans. Identify any proposed black-start engines, fuel-burning heaters, emergency generators and temporary generating equipment, their authorization basis, and their emissions. Explain which units belong to the same stationary source, applying the rules for industrial grouping, location and common control, and include their emissions in PTE where required. Separate authorization of a unit does not by itself remove its emissions from the source total. [2]
5. **Identify the restrictions that establish minor-source status.** State the binding hourly and annual emission limits, any fuel or operating restrictions, the averaging periods, and the legal basis for crediting them in PTE (how they will be monitored, recorded, reported, and enforced).
6. **Explain how emission limits and control performance will be verified.** For the SCR systems and oxidation catalysts, identify the operating ranges and performance indicators appropriate to each configuration, such as catalyst temperature, pressure drop, reagent flow where applicable, oxygen concentration, and outlet NO_x and CO concentrations. Specify monitoring frequency, testing, maintenance, recordkeeping, reporting, and corrective-action requirements. Explain how emissions will be accounted for during startup, shutdown, and other periods outside the conditions supporting the claimed control performance. Identify where these obligations are established in the authorization or incorporated rules.
7. **Resolve the PM measurement basis.** Confirm whether relevant guarantees and calculations include condensable as well as filterable PM and appropriately distinguish PM, PM₁₀ and PM_{2.5}.
8. **Make the decision's technical basis accessible.** Release the nonconfidential emissions data and explanation needed to reproduce the determination and identify the specific basis for withholding any remaining information.

The analysis does not require assuming misconduct or dismissing the possibility of a valid engineering explanation. It requires the explanation to be documented, the arithmetic to reconcile, and the restrictions to work in practice.

If the supported potential to emit reaches the applicable major-source threshold, TCEQ should require the corresponding permitting route. If it remains below, the record should show precisely why—and what prevents operation outside that basis.

Further reading

For broader context, [Floodlight's July 9, 2026 investigation](#) examines minor air permits for Texas data-center power generation, including questions about public participation and later expansions. The Pacifico findings in this article are based on the project's own records and the governing rules.

Reproducing the Ansaldo conversion

The calculation treats the application's concentration as dry NO_x referenced to 15% oxygen, expresses NO_x mass as nitrogen dioxide (NO₂), and uses heat input on the HHV basis. TCEQ should confirm these conventions against the actual manufacturer guarantee.

Using the constants employed in our reconstruction:

$$NO_x \text{ lb/hr} = C \times \frac{46.01}{385.3 \times 10^6} \times 8,710 \times \frac{20.9}{20.9 - 15} \times Q$$

C = 2 ppm and Q = 885 MMBtu/hr HHV.

$$NO_x \text{ lb/hr} = 2 \times \frac{46.01}{385.3 \times 10^6} \times 8,710 \times \frac{20.9}{5.9} \times 885$$

$$NO_x \text{ lb/hr} = 6.521371$$

Here, 46.01 is the molecular weight of nitrogen dioxide, used to express NO_x mass as NO₂ (lb/lb-mol). The value 385.3 is the standard gas volume at 68°F and one atmosphere (dscf/lb-mol); 8,710 is Method 19's natural-gas dry exhaust-volume factor on the same standard basis (dscf/MMBtu). The oxygen correction accounts for the 15% reference convention. The application itself uses 385.3 and 8,710 in its noted formaldehyde and ammonia calculations. [1, PDF p. 52][8]

EPA's rounded NO_x conversion factor in Method 19 Table 19-1 gives **6.520637 lb/hr**, also approximately 6.52 lb/hr. The small rounding difference has no effect on the threshold issue. The table in this article uses the unrounded 6.521371 result.

For the CO cross-check, substitute carbon monoxide's molecular weight of 28.01 for 46.01 and retain the stated 2 ppm, 885 MMBtu/hr and other constants. The result is 3.970085 lb/hr. Dividing the filed rate by the calculated rate gives 0.748309 for NO_x and 0.748095 for CO. These ratios use unrounded rates. [1, PDF p. 52][8]

The independent workbook uses a gas-volume constant of 379.7 in its NO_x conversion, alongside the exhaust-volume factor specified at 68°F, producing approximately 6.618 lb/hr. The two molar-volume constants represent standard reference temperatures of 60°F and 68°F, not actual turbine exhaust temperatures. Matching the standard-temperature conventions reduces the result by about 1.45%; it does not reconcile it with 4.88 lb/hr. Our 6.52-lb/hr and 263.98-tpy figures are adjusted calculations, rather than values quoted directly from the analyst's workbook. [8]

The annual reconstruction is:

All six families using application mass rates and the stated analysis schedules

$$\text{Normal operation} = 235.223520 \text{ tpy}$$

Change attributable to the Ansaldo rate

$$\frac{(6.52137118349 - 4.88) \times 4,380 \times 8}{2,000} = 28.756823 \text{ tpy}$$

Conditional total for normal operation

$$235.223520 + 28.756823 = 263.980343 \text{ tpy}$$

This is a sensitivity calculation using the stated inputs. A final PTE determination must also establish the maximum supported operating conditions, simultaneous operating constraints, enforceable restrictions, and all relevant operating modes.

Sources and methodology

Page references below are PDF page numbers, because the application's internal page numbering restarts in its appendices. Calculations are shown to make the analysis reproducible; displayed decimal precision does not imply equivalent certainty about actual emissions.

1. **Pacifico CCK Energy 1 LLC, August 2026 EGU Standard Permit application**, Registration 185019 / Project 413471, prepared by Trinity Consultants. [Public 54-page application](#). Key locations: p. 34, NSR/Title V classification; p. 36, sitewide and unit summaries; pp. 37–54, turbine calculations; pp. 52–53, Ansaldo inputs, emissions, and operating-scenario footnote. Filename: Pacifico_Cedar_Creek_SP_Application_2026-0813.pdf; cover letter dated August 14, 2026.
2. **40 CFR §51.166**, especially (b)(1)(i), major-source thresholds; (b)(5)–(6), stationary-source grouping; and the PSD program requirements. [Federal regulation](#).
3. **Independent engineering workbook provided by an Environmental Integrity Project analyst**, corrected version dated September 21, 2026: PTE Calculation_Cedar Creek, TX_Pacifico BTM Plant_Permit_9.21.2026.xlsx. Relevant locations: SUMMARY!B37, E37, F37; each turbine sheet's rows 3–5, 8, 14 and 33–38. The analyst corrected identified reference and unit issues. The workbook is a research input; this article's interpretations, narrower sensitivity calculation and presentation are Lost Pines Watch's, not a representation that EIP has issued or endorsed this article as a formal report.
4. **EPA, Basic Information about NO₂**. [Combustion sources and the formation of ozone and particles](#).
5. **30 TAC Chapter 116, Subchapter F**, §§116.610(b)–(c) and 116.615(2). [EPA's compilation of the approved Texas State Implementation Plan rules](#). See also [TCEQ's Electric Generating Unit Standard Permit](#).
6. **40 CFR §52.21**, especially (b)(23)(i), pollutant significance levels; (j)(2), best available control technology for a new major source; (k), air-quality analysis; and (q), public participation. [Federal PSD requirements](#).
7. **EPA, Who Has to Obtain a Title V Permit?** [Operating-permit thresholds](#). Pacifico's own acknowledgement appears in application §9, PDF p. 34.
8. **EPA Method 19**, §12.2.1 and Tables 19-1 and 19-2. [Method and conversion factors](#). Used here as a technical cross-check; this analysis does not assert that Method 19 is the only permissible way to substantiate the project's maximum mass rate.
9. **30 TAC §116.12(29), Potential to emit**. [EPA's approved Texas SIP compilation, effective June 18, 2025](#).
10. **EPA, Guidance on Enforceability Requirements for Limiting Potential to Emit Through SIP and Section 112 Rules and General Permits**, January 25, 1995, especially printed p. 5 / PDF p. 6. [Guidance](#). This is agency guidance, distinct from the binding regulations cited above.
11. **In re Peabody Western Coal Company**, 12 E.A.D. 22, 34 n.30, 37 & n.35, 41 (EAB February 18, 2005), CAA Appeal No. 04-01. [Official EPA decision](#). The earlier 244-tpy estimate was later revised to 185 tpy. The decision addresses the reliability of a proposed PTE restriction and its monitoring; the coal-processing equipment differs from Pacifico's turbines.
12. **Manufacturer documents supplied for review**: Ansaldo AE64.3A_01.pdf (July 2026), especially p. 2; Solar Solar PGM70.pdf (January 2023), p. 2; Solar SMT60.pdf (July 2024); Solar T-130.pdf (February 2021); Baker Hughes NovaLT16 Overview-041725.pdf; and GE 6b-fact-sheet-product-specifications.pdf (2025). These establish family-level context, not identical project configurations. In particular, the GE sheet describes 6B.03, while the application identifies PG6561B. The Baker Hughes document carries a proprietary/confidential marking and is not reproduced here.
13. **EPA AP-42 Introduction**, especially pp. 1–4, on the limitations of average emission factors and the use of source-specific information. [Introduction](#).
14. **EPA AP-42 §3.1, Stationary Gas Turbines**, especially the high-load qualification and Table 3.1-2a with footnotes. [Turbine emission factors](#). Baker PM checks: filterable factor $0.0019 \times 183.3 = 0.34827$ lb/hr; total factor $0.0066 \times 183.3 = 1.20978$ lb/hr. Neither multiplication establishes that a generic factor is the correct project-specific maximum.