

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR**

IN THE MATTER OF	§	PETITION FOR OBJECTION
	§	
Clean Air Act Title V Permit No. V20700.000	§	
for Seguro Energy Partners LLC Bella Energy	§	
Facility, issued by the Pinal County Air	§	Permit No. V20700.000
Quality Control District, Pinal County,	§	
Arizona	§	
	§	

**PETITION TO OBJECT TO TITLE V PERMIT NO. V20700.000 ISSUED BY THE
PINAL COUNTY AIR QUALITY CONTROL DISTRICT**

Pursuant to section 42 U.S.C. § 7661d(b)(2) and 40 C.F.R. § 70.8(d), Sierra Club hereby petitions the Administrator of the U.S. Environmental Protection Agency (“Administrator” or “EPA”) to object to the Title V Operating Permit No. V20700.000 (“Permit” or “Final Permit”) issued by the Pinal County Air Quality Control District (“PCAQCD” or “District”) authorizing operation of Seguro Energy Partners, LLC’s (“Seguro” or “Applicant”) proposed Bella Energy Facility (“Facility”) in Pinal County, Arizona.

I. PETITIONER

Sierra Club is a national, non-profit organization dedicated to the protection of the environment. Among other goals, Sierra Club works to advance a transition to clean, renewable energy, eliminate or reduce harmful air pollution emissions, and protect public health. Sierra Club has over 13,000 members in Arizona. Sierra Club’s Grand Canyon Chapter has its office in Phoenix, Arizona.

II. PROCEDURAL BACKGROUND

This petition addresses the Title V operating permit for the Bella Energy Facility issued by PCAQCD on June 17, 2024, as well as the District's responses to public comments ("Response") dated April 25, 2024. *See* Exhibits 1 and 2 attached hereto. The public comment period for the Draft Permit began on March 2, 2024 and ended on April 1, 2024. Response at 1. Sierra Club timely filed comments identifying deficiencies in the Draft Permit on April 1, 2024. Exhibit 3 attached hereto. The District's Response describes changes made to the Draft Permit in response to Sierra Club's comments. Sierra Club appreciates the District's revisions to the Draft Permit. For example, Sierra Club supports the District's decision to revise the Permit to require Seguro to use Continuous Emissions Monitoring Systems ("CEMS") to monitor carbon monoxide emissions from the Facility's combustion turbines. Final Permit, Condition No. 6.F.2. However, as this petition explains, these changes are not sufficient to bring the Permit into compliance with the requirements of Title V of the Clean Air Act. PCAQCD's revisions to the Final Permit and the District's responses to comments do not adequately remedy the flaws identified in Sierra Club's comments. Because EPA did not object to the Permit during its 45-day review period (which ended on June 9, 2024), Sierra Club petitions EPA to object to the Final Permit. This petition, filed on August 6, 2024, is timely submitted within 60 days after the close of EPA's 45-day review period.

III. LEGAL REQUIREMENTS

Title V permits are the primary method for enforcing and assuring compliance with the Clean Air Act's pollution control requirements for major sources of air pollution. Operating Permit Program, 57 Fed. Reg. 32,250, 32,258 (July 21, 1992). Prior to enactment of the Title V permitting program, regulators, operators, and members of the public had difficulty determining which requirements applied to each major source and whether sources were complying with applicable

requirements. This was a problem because applicable requirements for each major source were spread across many different rules and orders, some of which did not make it clear how general requirements applied to specific sources.

The Title V permitting program was created to improve compliance with and to facilitate enforcement of Clean Air Act requirements by requiring each major source to obtain an operating permit that (1) lists all applicable federally-enforceable requirements, (2) contains enough information for readers to determine how applicable requirements apply to units at the permitted source, and (3) establishes monitoring requirements that assure compliance with all applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(a) and (c); *Virginia v. Browner*, 80 F.3d 869, 873 (4th Cir. 1996) (“The permit is crucial to implementation of the Act: it contains, in a single, comprehensive set of documents, all CAA requirements relevant to the particular source.”); *Sierra Club v. EPA*, 536 F.3d 673, 674-75 (D.C. Cir. 2008) (“But Title V did more than require the compilation in a single document of existing applicable emission limits It also mandated that each permit . . . shall set forth monitoring requirements to assure compliance with the permit terms and conditions”).

The Title V permitting program provides a process for stakeholders to resolve disputes about which requirements should apply to each major source of air pollution outside of the enforcement context. 57 Fed. Reg. 32,266 (“Under the [Title V] permit system, these disputes will no longer arise because any differences among the State, EPA, the permittee, and interested members of the public as to which of the Act’s requirements apply to the particular source will be resolved during the permit issuance and subsequent review process.”). Accordingly, federal courts do not generally second-guess Title V permitting decisions made by state permitting agencies and will not enforce otherwise-applicable requirements that have been omitted from or displaced by

conditions in a Title V permit. *See* 42 U.S.C. § 7607(b)(2). Because courts rely on Title V permits to determine which requirements may be enforced and which requirements may not be enforced against each major source, state permitting agencies and EPA must exercise care to ensure that each Title V permit includes a clear, complete, and accurate account of the requirements that apply to the permitted source.

The Act requires the Administrator to object to a state-issued Title V permit if he determines that it fails to include and assure compliance with all applicable requirements. 42 U.S.C. § 7661d(b)(1); 40 C.F.R. § 70.8(c). If the Administrator does not object to a Title V permit, “any person may petition the Administrator within 60 days after the expiration of the Administrator’s 45-day review period to make such objection.” 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). The Administrator “shall issue an objection . . . if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of the . . . [Clean Air Act].” 42 U.S.C. § 7661d(b)(2); *see also* 40 C.F.R. § 70.8(c)(1). The Administrator must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2).

IV. GROUNDS FOR OBJECTION: THE FINAL PERMIT FAILS TO ASSURE COMPLIANCE WITH SYNTHETIC MINOR PLANTWIDE LIMITS ON HAZARDOUS AIR POLLUTANT AND CRITERIA POLLUTANT EMISSIONS.

1. Specific Grounds for Objection, Including Citation to Permit Terms

The Final Permit is deficient because it authorizes construction and operation of the Bella Energy Facility as a synthetic minor stationary source of pollution while failing to establish practically enforceable synthetic minor emission limits that effectively limit the facility’s potential to emit below applicable major source thresholds for hazardous air pollutants (“HAP”) and criteria pollutant emissions.

The relevant emission limits are found at Permit Condition No. 5.C.1 (providing that the permittee shall not emit PM, PM10, or PM2.5 from its combustion turbines exceeding 63 tons per 12-month rolling total sum), Condition No. 5.C.3 (providing that the permittee shall not emit more than 225 tons of VOCs from its combustion turbines over any rolling 12-month period), and Condition No. 5.C.6 (providing that the permittee shall not emit more than 9 tons of any particular HAP or 22.5 tons of total combined HAPs from its combustion turbines over any rolling 12-month period).

The Final Permit establishes the following conditions which are intended to ensure compliance with these emission limits:

Condition No. 5.C.7 limits the natural gas annual combined heat input to the combustion turbines to 18,844,300 MMBtu higher heating value (“HHV”), based on a rolling 12-month average.

Condition No. 6.A.1 requires Seguro to conduct stack testing for NO_x, CO, PM/PM10/PM2.5, VOCs, and formaldehyde at each of the combustion turbines within 180 days after startup of the turbines. This testing is to be conducted “at a maximum heat input capacity available on the day of testing.” *Id.*

Condition No. 6.A.4 requires Seguro to submit a test report to the District showing that—based on the stack testing conducted—combustion turbine emissions comply with Condition No. 5.C emission limits for NO_x, PM10, CO, and VOCs. This test report condition does *not* require Seguro to use stack test results to demonstrate compliance with HAP emission limits established by Condition No. 5.C.6.

Condition No. 6.A.5.a provides that Seguro must repeat stack testing required by Condition No. 6.A.1 within five years of the previous test.

Condition No. 6.F.3 explains how Seguro is to calculate PM/PM10/PM2.5 emissions from its combustion turbines to determine compliance with emission limits established by Condition No. 5.C.1. Specifically, Seguro must calculate PM/PM10/PM2.5 emissions from each combustion turbine by adding together emissions during startup and shutdown events and during normal operation for the relevant period. Condition No. 6.F.3.d provides that PM/PM10/PM2.5 emissions during startup and shutdown activities shall be calculated using an emission factor of 5.1 pounds per event, with event being defined as one startup followed by one shutdown. *Id.* Prior to stack testing required by Condition No. 6.A.1, Seguro is to determine PM/PM10/PM2.5 emissions from its combustion turbines during normal operations by multiplying the cumulative heat input for each turbine during the relevant period by an emission factor of 0.0082 lb/MMBtu HHV. Condition No. 6.F.3.e.i.¹ Following approval of a performance test-derived PM/PM10/PM2.5 emission factor, Seguro is required to use that approved emission factor in place of the default 0.0082 lb/MMBtu HHV emission factor to determine emissions from its combustion turbines during normal operations. Condition No. 6.F.3.e.ii.

Condition No. 6.F.4 explains how Seguro is to calculate VOC emissions from its combustion turbines to determine compliance with emission limits established by Condition No. 5.C.3. Specifically, Seguro is to calculate VOC emissions from each combustion turbine by adding together emissions during startup and shutdown events and during normal operation for the relevant period. Condition No. 6.F.4.d provides that VOC emissions during startup and shutdown activities shall be calculated using an emission factor of 2.7 pounds per event, with an event being defined as one startup followed by one shutdown. *Id.* Prior to stack testing required by Condition No. 6.A.1, Seguro is to determine VOC emissions from its combustion turbines during normal

¹ This emission factor is higher than the 0.0056 lb/MMBtu factor included in the Draft Permit.

operations by multiplying the cumulative heat input for each turbine during the relevant period by an emission factor of 0.0155 lb/MMBtu HHV. Condition No. 6.F.4.e.i. Following approval of a performance test-derived VOC emission factor, Seguro is required to use that approved emission factor in place of the default 0.0155 lb/MMBtu HHV emission factor to determine emissions from its combustion turbines during normal operations. Condition No. 6.F.4.e.ii.

Condition No. 6.F.6 directs Seguro to calculate individual and total HAP emissions from its combustion turbines using fuel records and emission factors from AP-42, Section 3.1, and Table 3.1-3. The Final Permit does not establish a separate method for calculating HAP emissions during startup and shutdown events.

2. Applicable Requirements Not Met

Each Title V permit must contain monitoring, testing, and recordkeeping provisions, as well as other conditions necessary to assure compliance with all applicable requirements. 42 U.S.C. § 7661c(a), (c); 40 C.F.R. § 70.6(a)(1), (3). Applicable requirements include emission limitations, like those established by Final Permit Condition No. 5.C. *See* 40 C.F.R. § 70.2.

3. Inadequacy of Permit Terms

The Final Permit is deficient because it lacks practically enforceable provisions that assure compliance with emission limits for PM/PM10/PM2.5, VOC and HAP emissions from its combustion turbines. *See* Condition Nos. 5.C.1, 5.C.3, 5.C.6.

a. The Final Permit's HAP emissions limits are not practically enforceable.

The Final Permit is deficient because it fails to establish monitoring, testing, and recordkeeping conditions sufficient to assure compliance with synthetic minor HAP emissions limits in Condition No. 5.C.6, as required by 42 U.S.C. § 7661c(a) and (c).

While the Final Permit establishes stack testing requirements for various criteria pollutants to determine actual emission rates, which are then used to determine compliance with applicable emission limits, it does not specify any similar requirements for HAPs. Instead, the Final Permit directs Seguro to calculate HAP emissions from its combustion turbines using fuel records and generic emission factors from AP-42 (EPA’s compilation of air pollutant emissions factors from stationary sources), Section 3.1, and Table 3.1-3. Final Permit at Condition No. 6.F.6. The Final Permit does not include any testing mechanism to confirm that these emission factors accurately predict actual emissions from the Facility’s combustion turbines during normal operations over the life of the Facility as its equipment ages and degrades.

While the Final Permit requires Seguro to include HAP emissions during normal operations as well as startup and shutdown events to calculate compliance with HAP emission limits for its combustion turbines, *id.* at Condition No. 5.C.6, the Final Permit does not establish distinct emission factors for Seguro to use to calculate HAP emissions during normal operations and startup and shutdown events. *Compare id.* at Condition No. 6.F.3.d, e (establishing separate emission factors for calculating PM/PM10/PM2.5 emissions during startup and shutdown events and normal operations). This is a problem, because HAP emission rates—like PM emissions—may increase during startup and shutdown events due to incomplete combustion.

AP-42 emission factors are unlikely to accurately predict actual emission rates from combustion turbines at the Bella Energy Facility even during so-called “normal operations” because such factors represent industry averages and do not account for variability outside the test conditions used to establish the factors. EPA has explained:

Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the

other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.

And:

The extent of between-source variability that exists, even among similar individual sources, can be large depending on process, control system, and pollutant. Although the causes of this variability are considered in emission factor development, this type of information is seldom included in emission test reports used to develop AP-42 factors. As a result, some emission factors are derived from tests that may vary by an order of magnitude or more. Even when the major process variables are accounted for, the emission factors developed may be the result of averaging source tests that differ by factors of five or more.

AP-42, Fifth Edition Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Introduction at 2.

The Permit Application and the Final Permit presume that, except for formaldehyde, HAP emissions from the combustion turbines will be negligible. To reach this conclusion, the Application simply applied emission factors from AP-42, 3.1 Stationary Internal Combustion Engines, Table 3.1-3 to anticipated heat input rates. Application at Appendix C, attached as Exhibit 4 hereto. This was inappropriate, not only because AP-42 emission factors are industry averages that may underestimate actual emissions by as much as an order of magnitude when a source is operated under conditions consistent with those used to derive the emission factors, but also because Seguro plans to operate its combustion turbines at loads lower than those used to establish the applicable emission factors during normal operation.

Footnote b for the referenced AP-42 table indicates that these emission factors are derived from units operating at loads of 80 percent or higher. Accordingly, application of these emission factors to determine compliance with the Final Permit must be specifically justified if the permit authorizes Seguro to operate its combustion turbines at lower loads. Seguro has indicated that it

will in fact operate its combustion turbines at loads lower than 80% during normal operations, *see* Application, Appendix E (describing “normal operation” cases 7, 8, 10, 11, 14, 16, and 17 where combustion turbines will operate at loads lower than 80%). Neither the Application nor any other document in the record for this project provides any evidence indicating that the AP-42 emission factors used to calculate potential HAP emissions from the Project turbines are appropriate for these operating scenarios. Because operation within conditions presumed by AP-42 emission factors may vary by an order of magnitude, normal operation outside such conditions may create even more dramatic inaccuracies. Formaldehyde emissions exceeding the emission rate of 0.00071 lb/MMBtu AP-42 emission factor by far less than an order of magnitude could result in emissions of that pollutant exceeding the 10 ton per year single HAP major source threshold, triggering Clean Air Act Section 112 major source requirements.

Additionally, the Final Permit allows Seguro to conduct an unlimited number of turbine startups and shutdowns each year. During periods of startup and shutdown, heat input to the turbines is significantly lower than normal operating loads and pollution control devices may operate less efficiently than at normal operating loads. Application at 11. While Seguro’s Application calculates worst-case annual startup and shutdown emissions presuming 5,000 events per year at the facility, the Final Permit does not include this number as an enforceable limit. *Id.* This renders the Final Permit deficient for two reasons: First, the Permit is deficient because it fails to include any conditions for accurately calculating HAP emissions during startups and shutdowns to ensure compliance with the plantwide HAP limits in Condition No. 5.C.6 and in 42 U.S.C. § 7661c(a), (c). Second, the Final Permit’s failure to establish any limit on the amount of time that the Facility’s combustion turbines may operate in modes that reduce pollution control performance renders the constraint on heat input to the turbines established by Condition No. 5.C.7 insufficient

to assure compliance with plantwide HAP limits because those limits were calculated using unenforceable presumptions about the amount of time turbines would be operated outside of normal scenarios. 42 U.S.C. § 7661c(a), (c).

b. The Final Permit’s PM/PM10/PM2.5 and VOC emissions limits are not practically enforceable.

While the Final Permit’s testing requirements for the plantwide limits on PM/PM10/PM2.5 and VOC emissions established by Condition Nos. 5.C.1 and 5.C.3 are better than the (nonexistent) requirements established for HAP emissions, they are still deficient. To ensure that emissions of these pollutants remain below their respective limits, the Final Permit directs Seguro to calculate turbine emissions using the following protocol:

Pollutant	Normal Operation Prior to Testing	Normal Operation Post Test	Startup/Shutdown Activities	Permit Term
PM/PM10/PM2.5	Heat Input * 0.0082 lb/MMBtu	Heat Input * Stack Test Emission Factor	No. of Events * 5.1 lbs/event	6.F.3
VOC	Heat Input * 0.0155 lb/MMBtu	Heat Input * Stack Test Emission Factor	No. of Events * 2.7 lbs/event	6.F.4

The Final Permit’s emission factors for startup and shutdown activities presumes that each startup will last 30 minutes and that each shutdown will last 9 minutes. But there are no enforceable permit requirements mandating compliance with these assumptions. Thus, if it takes longer than anticipated for turbines to startup or shutdown, higher emission rates than presumed by the permit will occur but will not be accounted for as Seguro determines compliance with permit limits. Second, these emission factors presume that turbine pollution controls (SCR and oxidation catalysts) will be partially effective at reducing emissions during startups and shutdowns. Application at 11 (“NOx, CO, VOC, and particulate matter emission rates during

startup and shutdown, in terms of pounds per event, have been provided by GE Vernova assuming that SCR and OxCat are operational.”). However, the Final Permit does not require use of pollution controls during startup or shutdown or mandate performance consistent with the Application’s representations to rely on startup/shutdown emission factors to determine compliance with emission limits. Moreover, no document in the record provides the actual technical basis for presumed control performance during turbine startups and shutdowns. Thus, the record fails to support the District’s conclusion that the emission rates presumed by the Final Permit accurately reflect actual emissions during startups and shutdowns at the Bella Energy Facility. *See In the Matter of United States Steel, Granite City Works*, Order on Petition No. V-2009-03, at 14 (Jan. 31, 2011) (“The record ... does not specify the origin of the emission factor” and “[i]t is not clear whether the emission factors ... are indicative of the emissions at USS’s facility.”). Because the duration of startup and shutdown events is not limited by the Final Permit, and because the per event emission rates presumed by the Permit are not derived from information in the record and presume the use of pollution controls that is not mandated by the Final Permit, the record does not support the District’s determination that multiplying the number of startup and shutdown events by the emission factors stated in the Final Permit provides an accurate basis for estimating emissions from Seguro’s combustion boilers sufficient to assure compliance with applicable PM/PM10/PM2.5 and VOC emission limits. 42 U.S.C. § 7661c(a), (c).

Additionally, the use of a stack test emission factor to determine lb/MMBtu emissions from the Project turbines across all “normal” operating scenarios contemplated by the Application and authorized by the Permit is unreasonable. While stack testing provides an idealized snapshot of turbine performance over a short period of time under carefully controlled conditions, continuous

operation may vary substantially based on present conditions, fuel quality, and operating load. While pollution reduction performance is typically best when turbines are operating at or near full capacity due to the more complete combustion of gas, improved SCR performance, and increased operational stability, Seguro contemplates several “normal” operating scenarios where turbines operate at reduced loads. *See* Application at Appendix E. Seguro has not attempted to show that turbine pollution control performance under these “normal” reduced-load operating scenarios will be consistent with stack test performance. Accordingly, the record does not support the District’s determination that multiplying actual monitored heat input to the Facility’s combustion turbines by stack test emission factors accurately reflects actual emissions from the turbines and assures compliance with the Final Permit’s PM/PM10/PM2.5 and VOC emission limits. 42 U.S.C. § 7661c(a).

4. The District Made Significant Changes to the Permit Without Providing an Opportunity for Public Participation.

The District increased the emission factors Seguro is required to use to calculate emissions from its combustion turbines during normal operations prior to stack testing to demonstrate compliance with Condition No. 5.C.1 and 5.C.3 emission limits for PM/PM10/PM2.5 and VOC. Response at 6-7. The Draft Permit had included an emission factor of 0.0056 lbs/MMBtu for PM/PM10/PM2.5 and an emission factor of 0.0172 lbs/MMBtu for VOC. Draft Permit, Condition Nos. 6.F.3.e.i, 6.F.4.e.i, attached as Exhibit 5 hereto. The presumed PM/PM10/PM2.5 emission rate prior to testing was lower than the turbine manufacturer’s estimate of potential hourly emissions from its turbine, but Seguro explained that operating at a lower rate was necessary to maintain emissions authorized by the Draft Permit below 90% of the major source threshold for PM10. Application at 9. The revised PM/PM10/PM2.5 emission factor of 0.0082 at Final Permit,

Condition No. 6.F.3.e.i appears to be consistent with the manufacturer's estimate that its turbines may emit up to 4 pounds of PM per hour. *Id.*

These changes to the Draft Permit are apparently intended to address Sierra Club's comments demonstrating that the record does not support the District's determination that pre-stack test emission factors established by the Draft Permit were technically achievable on a continuous basis. Response at 6-7. Sierra Club appreciates the District's willingness to make these revisions. However, the changes to the Final Permit—which were made without public notice or opportunity for comment—raise separate public participation problems. PCAQCD Code § 3-1-107.D.5 requires public notices for permit issuances to address the “emissions change involved in any permit revisions.” Though the increase to the Draft Permit's presumed PM/PM10/PM2.5 and VOC emission rates was not made through a formal revision process, it had the same effect as a permit revision and should have been made through a formal significant revision process. *See* PCAQCD Code § 3-2-195.A (the revision is significant because it involves substantive changes Draft Permit monitoring requirements, *id.* § 3-2-190.A.2).

These permit changes are not trivial. For example, the change to the presumed emission rate for PM10 means that the heat input limitation at Final Permit No. 5.C.7 no longer assures that PM10 emissions will remain below the applicable nonattainment major source threshold of 70 tons per year. PCAQCD Code § 3-3-203(2)(a). Multiplying the heat input authorized by 5.C.7 by the revised emission factor at 6.F.3.e.i of 0.0082 lb/MMBtu renders an emission total of 77.26, exceeding the major source threshold. The increased emission rate presumed by the Final Permit for PM2.5 also casts doubt on the sufficiency of Seguro's demonstration that the Bella Energy Facility will not cause or contribute to violations of the National Ambient Air Quality Standards for PM2.5. Seguro did not model emissions at the higher rate contemplated by the Final Permit,

nor did Seguro demonstrate compliance with the revised annual PM_{2.5} NAAQS of 9.0 µg/m³, which became effective on May 6, 2024 (before the Final Permit was issued). *Reconsideration of the National Ambient Air Quality Standards for Particulate Matter*, 89 Fed. Reg. 16202 (March 6, 2024). The increased VOC emission rate presumed by the Final Permit may also undermine Seguro's NAAQS modeling demonstration for ozone, because VOC contributes to ozone formation.

Members of the public should have been notified and had an opportunity to comment on the increased emissions presumed by the Final Permit because these increases call into question the sufficiency of permit limits and monitoring to assure compliance with applicable NSR major source requirements, the sufficiency of monitoring to assure compliance with applicable limits—for example, the heat input limit at Condition No. 5.C.7 no longer assures PM₁₀ emissions will remain below the applicable major source threshold—or the sufficiency of permitted emission rates to protect the NAAQS. Because the Final Permit was issued without fully complying with public participation requirements, as required by 40 C.F.R. § 70.7(a)(1)(ii), the Administrator must object to it.

5. Permit Deficiencies Raised in Public Comments

These permit deficiencies were raised in Sierra Club's April 1, 2024 Comments on the Draft Permit. *See* Ex. 3 at 2-8. As explained below, the discussion of issues in the previous section accounts for changes to the Draft Permit made by the District in response to Sierra Club's comments.

6. Analysis of the District's Response to Comments

a. The District's response fails to rebut Sierra Club comments concerning the enforceability of the draft permit's HAP limits.

i. AP-42 Emission Factors (Normal Operation)

The District contends that the Final Permit's complete reliance on generic AP-42 emission factors without establishing those emission factors as applicable requirements, and without requiring any stack testing or parametric monitoring to ensure that HAP emissions from the Facility's combustion turbines approximate AP-42 emission factors, is appropriate because AP-42 is "the best-known data source for calculating HAP emissions from gas-fired combustion turbines," and because the emission factor for formaldehyde—which accounts for most of the anticipated HAP emissions from the combustion turbines—has an "A" rating from EPA. Response at 4. While the District concedes that the Final Permit allows the Facility's combustion turbines to operate at less than 80% capacity (the level of operation presumed by the applicable AP-42 emission factors), the District contends that "significant operation at lower loads would not be expected because turbine efficiency is better when the operating loads are higher." *Id.* Furthermore, the District emphasizes that there is no "authoritative scientific reference which suggests that the AP-42 data significantly underestimate formaldehyde emissions" and states that the AP-42 "background document contains no additional data on formaldehyde emissions for lower load operations when ... turbine[s] use[] a CO catalyst for emissions control." *Id.* at 5. All "available data on formaldehyde emissions for turbines using a CO catalyst were from testing conducted at higher operating load conditions." *Id.*

The District's response does not rebut Sierra Club's demonstration that the Final Permit is deficient. EPA has explained that even highly-rated AP-42 emission factors "are not likely to be accurate predictors of emissions from any one specific source, except in very limited scenarios."

EPA Reminder about Inappropriate Use of AP-42 Emission Factors, EPA Publication No. EPA 325-N-20-001 at 1 (November 2020), attached as Exhibit 6 hereto.² Neither Seguro nor the District have provided any evidence supporting their presumption that AP-42 emission factors for HAP emissions, which presume turbine operating loads of at least 80% capacity, will accurately or even approximately characterize actual emissions from the Facility’s combustion turbines during “normal” operations at less than 80% capacity. *In the Matter of Valero Refining-Texas, L.P.*, Order on Petition No. VI-2021-8 at 62 (June 30, 2022) (“Petitioners have demonstrated that the permit record ... does not contain sufficient information to conclude that there is adequate monitoring to assure compliance with the relevant emission limits.”). And even in cases where use of emission factors is justified at the outset, Title V permits must also contain provisions “to confirm the appropriateness of the emission factors such as through the use of stack testing using EPA-approved methods on a periodic basis, as operations and equipment change or deteriorate over time.” *In the Matter of United States Stee Corp. Granite City Works*, Order on Petition No. V-2009-03 at 14 (January 31, 2011). The Final Permit does not establish any such requirements.

The District’s presumption that “significant operation at lower loads would not be expected because turbine efficiency is better when the operating loads are higher,” Response at 4, does not rebut Sierra Club’s comments. Indeed, Seguro’s Application directly contradicts the District’s claim by representing several “normal” operating scenarios where the Facility’s combustion turbines will operate below 80% capacity. Application, Appendix E (cases 7, 8, 10, 11, 14, 16, and 17); *id.* at 9 (indicating that scenarios listed in Appendix E are considered “normal” operating conditions for the Facility’s combustion turbines). Absent an enforceable requirement limiting the amount of time the Facility’s combustion turbines may operate below 80% capacity, the District’s

² Available at: <https://www.epa.gov/sites/default/files/2021-01/documents/ap42-enforcementalert.pdf>

common sense reasoning does not rebut Seguro's express representation that such operation should be considered normal and authorized—without effective limitation—by the Final Permit.

The District responds that AP-42 emission factors would have to significantly underestimate HAP emissions from the Facility's combustion turbines and that it has not identified any information about HAP emission rates from combustion turbines with CO catalysts operating at loads less than 80% capacity. Response at 5. These rejoinders only underscore the lack of evidence in the record supporting the District's reliance on AP-42 emission factors to assure compliance with HAP limits in the Final Permit. As explained above, EPA cautions that emissions from a particular source may exceed emissions predicted by AP-42 emission factors by an order of magnitude even when operating under conditions presumed by the applicable emission factors. Here, it is clear that the Facility's combustion turbines will operate outside the range presumed by relevant AP-42 HAP emission factors because Seguro's Application says as much. This suggests that actual HAP emissions from the Facility's combustion turbines may exceed rates predicted by AP-42 HAP emission factors by even more an order of magnitude. If anything, the absence of any data concerning emission rates for combustion turbines equipped with CO catalysts operating at loads below 80% capacity suggests that the controls are not effective under these circumstances.

The record in this matter does not justify the Final Permit's reliance on AP-42 emission factors to calculate HAP emissions during "normal" operations outside operating ranges presumed by the relevant emission factors. Nor does the Permit include any periodic monitoring provisions to confirm the appropriateness of using AP-42 emission factors to calculate combustion turbine HAP emissions as the Facility ages and deteriorates. Accordingly, the District's response to Sierra Club's comments concerning the use of AP-42 emission factors to determine compliance with Final Permit Condition No. 5.C.6 HAP emission limits fails.

ii. AP-42 emission factors (Startup and Shutdown Events)

As explained above, the Final Permit fails to impose an enforceable limit on the number and duration of startup and shutdown events for the Facility's combustion turbines. The Final Permit also fails to establish any monitoring requirements to ensure that AP-42 emission factors accurately determine HAP emissions from the Facility's combustion turbines during startup and shutdown events. While the Final Permit establishes specific lb/event emission factors to calculate the amount of criteria pollutants emitted during startup and shutdown events, *see e.g.* Final Permit at Condition No. 6.F.3.d, it directs Seguro to use the same procedure (multiply heat input by AP-42 emission factors) to determine HAP emissions during normal operations as well as startup and shutdown events. *Id.* at Condition No. 6.F.6. Because the permit record does not contain any evidence suggesting that AP-42 emission factors accurately determine HAP emissions from the Facility's combustion turbines during startup and shutdown events and because there are no conditions actually limiting the number and duration of such events authorized by the Final Permit, the Final Permit fails to ensure that startup and shutdown events authorized by the permit will not cause violations of the applicable HAP emission limits in Condition No. 5.C.6.

The District contends that additional limitations on the duration and number of startup and shutdown events authorized by the Final Permit are unnecessary because Final Permit Condition No. 5.C requires compliance with emission limits during startup and shutdown events and because "[a]s a practical matter, the number of turbine SUSD event[s] was already restricted by compliance with the other enforceable permit limits." Response at 5. This response is unclear and does not adequately address Sierra Club's comment. Sierra Club acknowledges that the HAP limits established by Condition No. 5.C.6 apply during normal operation as well as during startup and shutdown events. However, the record does not provide any evidence supporting the Final

Permit's method of calculating HAP emissions during startup and shutdown events (which may last longer than presumed by the Application and Final Permit). The District's failure to require any validation testing to determine actual HAP emission rates from the Facility's combustion turbines fails to assure compliance with the emission limits in Condition 5.C.6. Sierra Club cannot address the District's claim that other enforceable permit limits work to ensure that startup and shutdown events will not cause the Facility's combustion turbines to violate applicable emission limits, because the District's response fails to identify the relevant limits.

b. The District's response fails to rebut Sierra Club comments concerning the enforceability of the Draft Permit's PM/PM10/PM2.5 and VOC limits.

In response to Sierra Club's demonstration that the compliance provisions for PM/PM10/PM2.5 and VOC emission limits established by Condition No. 5.C are deficient, the District contends that the stack testing requirements at Condition No. 6.A and the parametric monitoring requirements at Condition No. 6.F are consistent with other permits issued by the District. Response at 6. The District also asserts that EPA has had an opportunity to review permits with these same monitoring provisions and has not objected to them. *Id.*

The District's response does not rebut Sierra Club's specific demonstration of permit deficiency. EPA's review of Title V permits is discretionary, and many Title V permits issued by states or counties are not substantively reviewed by EPA. It is unfortunately common for state or county permitting authorities to issue Title V permits with boilerplate conditions that fail to assure compliance with Clean Air Act requirements. It is also common for boilerplate permit conditions that are inconsistent with Title V to go unnoticed by EPA for years. For example, the Texas Commission on Environmental Quality ("TCEQ") issued hundreds of Title V permits with boilerplate language establishing monitoring, testing, and recordkeeping requirements for permit by rule emission limits. After years of allowing this boilerplate language, EPA began objecting to

it after its deficiency was brought to the agency's attention by members of the public. Eventually, the TCEQ made a systemic change to the way its Title V permits addressed PBR compliance.³ If EPA has not objected to specific provisions in other Title V permits issued by the District, this does not mean that Sierra Club failed to demonstrate that the Final Permit is deficient. Title V's public comment and public petition provisions are meant to address situations of this kind. Because Congress understood that EPA may not be able to independently identify and correct all of the flaws in a state or county's Title V permitting process, it allowed members of the public to bring deficiencies to EPA's attention even if they involved boilerplate conditions that had been included in many previous permits.

The District also restates its previous response to Sierra Club's comments regarding the Permit's failure to establish monitoring requirements to determine actual emissions during startup and shutdown events and to limit the number and duration of such events. Response at 6, 7. Sierra Club's comments explained that the Permit fails to ensure that PM/PM10/PM2.5 and VOC emission during startup and shutdown events will not cause violations of applicable emission limits at Condition Nos. 5.C.1 and 5.C.3. As with HAPs, Sierra Club acknowledges that the limits on PM/PM10/PM2.5 and VOC emissions in Condition 5.C of the Final Permit apply during normal operations as well as startups and shutdowns. However, the Final Permit fails to assure compliance with these emission limits because: (1) the record does not establish that stack test emission factors determined while combustion turbines are operating at maximum capacity will accurately estimate turbine emissions at "normal" loads below 80% capacity; (2) there is no technical basis in the record supporting the accuracy of the "per event" emission factors in Permit Condition Nos. 6.F.3.d and 6.F.4.d for determining PM/PM10/PM2.5 and VOC emissions during startup and shutdown

³ https://www.tceq.texas.gov/permitting/air/nav/titlev_news.html (May 6, 2022: Revision to the Title V PBR Programmatic Approach).

events, and (3) the Final Permit fails to establish any enforceable limit on the number and duration of startup and shutdown events for the Facility's combustion turbines. The District's cursory response does not address these comments.

V. CONCLUSION

For the foregoing reasons, the Final Permit issued by PCAQCD for the Bella Energy Facility is deficient and fails to comply with the Clean Air Act's requirements. Accordingly, the Act requires the Administrator to object to the Final Permit.

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EXHIBITS TO PETITION

1. Bella Energy Facility Final Permit No. V20700.000 (June 17, 2024)
2. PCAQCD Responses to Comments on Draft Permit (April 25, 2024)
3. Sierra Club Comments on Bella Energy Facility Draft Permit (April 1, 2024)
4. Permit Application for Bella Energy Facility (August 30, 2023)
5. Bella Energy Facility Draft Permit No. V20700.000 (February 29, 2024)
6. EPA Reminder about Inappropriate Use of AP-42 Emission Factors, EPA Publication No. EPA 325-N-20-001 (November 2020)
7. Technical Support Document for Final Permit (June 17, 2024)

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