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BEFORE THE ADMINISTRATOR UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:

The Clean Air Act Title V Construction/Operating Permit For the Salt River Project Coolidge Generating Station Pinal County, Arizona) PETITION FOR OBJECTION

) PERMIT #V20676.R02

PETITION FOR OBJECTION TO THE CONSTRUCTION/TITLE V OPERATING PERMIT FOR SALT RIVER PROJECT'S COOLIDGE GENERATING STATION FINALIZED ON MARCH 26, 2024

Pursuant to section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), and 40 C.F.R. § 70.8(d), Sierra Club hereby petitions the Administrator of the United States Environmental Protection Agency ("EPA") to object to the Construction/Title V Operating Permit issued by Pinal County, State of Arizona, for the Salt River Project Agricultural Improvement and Power District's ("SRP" or "Applicant") Coolidge Generating Station ("CGS") issued as final on March 26, 2024, Permit Revision #V20676.R02 ("Permit" or "Final Permit")).¹ Sierra Club described the deficiencies with the draft permit² in detailed written comments filed with Pinal County Air Quality Control District ("PCAQCD") on November 15, 2023.³ PCAQCD's revisions to the final permit and the County's responses to comments do not remedy the flaws identified in Sierra Club's comments.

¹ Coolidge Generating Station Final Permit No. V20676.R02 (Mar. 26, 2024), attached as Exhibit 1 hereto [hereinafter "Final Permit"].

² Coolidge Generating Station Draft Permit No. V20676.R02 (Oct. 2, 2023), attached as Exhibit 2 hereto [hereinafter "Draft Permit"].

³ Sierra Club, Comments on Draft Permit V20676.R02 for Expansion Project at Salt River Project Agricultural Improvement and Power District's Coolidge Generating Station (Nov. 15, 2023), attached as Exhibit 3 hereto [hereinafter "Sierra Club Comment Letter"].

The Final Permit falls far short of satisfying applicable Clean Air Act regulations, including those established by PCAQCD and the State of Arizona. Importantly, the Final Permit improperly allows the facility to evade the New Source Review ("NSR") program for Prevention of Significant Deterioration ("PSD"). PCAQCD must instead regulate the proposed Expansion Project as a major source pursuant to the PSD and nonattainment NSR ("NNSR") programs. For the reasons stated herein, EPA should issue an order objecting to the Final Permit.

Factual Background

Coolidge Generating Station is an existing electric peaking power generating facility that is owned and operated by SRP. The plant is located at the southern end of the City of Coolidge⁴ and adjacent to Randolph, an unincorporated community in the western part of Pinal County, Arizona.⁵ The existing facility consists of twelve (12) simple-cycle natural gas-fired General Electric ("GE") LM6000PC Sprint NXGEN combustion turbines ("CT1" through "CT12") with: water injection and selective catalytic reduction ("SCR") to reduce NO_x emissions; oxidation catalysts to reduce CO and VOCs; continuous emission monitoring systems ("CEMS") for NO_x and CO; a 190-horsepower ("hp") diesel-fired emergency fire pump; and ancillary equipment.⁶ The existing facility has an electric generating capacity of

⁴ PCAQCD Final Technical Support Document ("TSD") for Permit No. V20676.R02, at 2 (Mar. 26, 2024), attached as Exhibit 4 hereto.

⁵ See Google Maps for SRP Coolidge Generation Station, *available at*: <u>https://www.google.com/maps/@32.9183313,-</u>

<u>111.511273,1788m/data=!3m1!1e3?entry=ttu</u>; Nina Lakhani, The Guardian, 'They keep coming back': a Black Community in Arizona Battles Power Expansion Plans Again (Mar. 20, 2023), *available at*

https://www.theguardian.com/us-news/2023/mar/20/they-keep-coming-back-ablack-town-in-arizona-battles-power-expansion-plans-

again#:~:text=Randolph%20is%20an%20unincorporated,in%20the%20Gila%20River%20valley.

⁶ Coolidge Generating Station Permit No. V20676.A01 (Oct. 1, 2019), attached as Exhibit 5 hereto [hereinafter "Previous Permit"]; PCAQCD Technical Support Document, (Oct. 15, 2019), attached as Exhibit 6 hereto [hereinafter "TSD for Previous Permit"].

576 Megawatts ("MW").⁷ The existing facility began construction in 2009 and commenced operation in $2011.^{8}$

At the time the existing facility was first permitted, the surrounding geographical area of West Pinal County was in attainment or unclassifiable with respect to all national ambient air quality standards ("NAAQS").⁹ The existing facility is currently permitted as a "synthetic minor" source, meaning that SRP agreed to enforceable restrictions to limit emissions from the existing facility below major source thresholds to avoid being subject to more stringent major-source requirements under the federal PSD program for areas designated attainment or unclassifiable under the NAAQS.^{10,11}

SRP originally prepared air modeling for its proposed project to expand the existing facility in 2021,¹² and submitted a permit application to Pinal County for an earlier 16-turbine iteration of the Expansion Project that year.

⁹ Exhibit 1 (Final Permit) at 4.

⁷ Exhibit 4 (TSD) at 2.

⁸ See TC Energy, Coolidge Generating Station Delivers Power to Arizona Grid (May 3, 2011), available at

https://www.tcenergy.com/announcements/2011/2011-05-03coolidge-generating-station-delivers-power-to-arizona-grid/.

¹⁰ Exhibit 5 (Previous Permit) at 4 ("The facility is a synthetic minor with respect to Prevention of Significant Deterioration...").

¹¹ "Synthetic minor source" means a facility that has the potential to emit regulated pollutants at or above major-source thresholds but that agrees to enforceable restrictions to limit emissions below these thresholds to avoid being subject to more stringent major-source requirements. Such restrictions must be enforceable as a practical matter. Synthetic-minor sources are referred to as "synthetic" because they would be major sources if not for their enforceable permit restrictions. Thus, they have "synthetically" become a minor source by accepting those restrictions. *See, e.g.*, EPA, Office of Inspector General, EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance at 1 (July 8, 2021), *available at* <u>https://www.epa.gov/system/files/documents/2021-07/_epaoig_20210708-21-p-</u><u>0175.pdf</u>.

¹² SRP, 2021 Air Dispersion Modeling for the Proposed Expansion of the Coolidge Generating Station (Sept. 2021), attached as Exhibit 7 hereto [hereinafter "SRP's 2021 Modeling Report"].

However, in 2023 SRP submitted a revised permit application¹³ to Pinal County for a modified 12-turbine version of the Expansion Project, but did not submit updated air modeling, continuing to rely on the modeling for the previous iteration of the project. The revised Expansion Project that is the subject of the Final Permit includes installation and operation of twelve (12) additional aero-derivative GE LM6000 PC natural gas-fired simple cycle combustion turbines for a total additional nameplate generating capacity of 594 MW ("Expansion Project"). Each combustion turbine would be controlled by SCR and oxidation catalyst and each stack would be equipped with CEMS for NO_x and CO.¹⁴ In addition, the Expansion Project would install up to six (6) wet surface air coolers ("WSACs").¹⁵

In 2020, the EPA reclassified West Pinal County to "serious nonattainment" for PM_{10} .¹⁶ On July 21, 2023, EPA issued a final determination that the West Pinal County serious nonattainment area failed to attain the NAAQS for PM_{10} by its December 31, 2022 attainment deadline, based on PM_{10} emissions data from 2020 through the end of 2022.¹⁷

Pinal County has some of the worst air pollution in Arizona according to the American Lung Association, earning consistent "F" or "Fail" grades for particulate matter and ozone pollution, respectively.¹⁸ The Coolidge Generating Station is located directly adjacent to Randolph, a historic African-American community, which, in addition to emissions from the existing Coolidge facility, has more than its fair share of heavy industry.¹⁹

¹³ SRP, 2023 Revised Permit Application (Aug. 2023), attached as Exhibit 8 hereto.

¹⁴ Exhibit 1 (Final Permit) at 7 (Condition 4.B.3).

¹⁵ Exhibit 4 (TSD) at 2; Exhibit 1 (Final Permit) at 4.

¹⁶ Finding of Failure to Attain the 1987 24-Hour PM₁₀ Standard;

Reclassification as Serious Nonattainment; Pinal County, Arizona, 85 Fed. Reg. 37756 (June 24, 2020).

¹⁷ Finding of Failure to Attain the 1987 24-Hour PM₁₀ Standards; Pinal County, Arizona, 88 Fed. Reg. 47026 (July 21, 2023).

¹⁸ American Lung Association, State of the Air, Arizona: Pinal, *available at* <u>https://www.lung.org/research/sota/city-rankings/states/arizona/pinal</u>.

¹⁹ See, e.g., Joshua Bowling, Arizona Republic, A Black Community Blossomed in Arizona and then Was Choked by Industrial Development. This Is the Story of Randolph, *available at*

Legal Background and Initial Argument

PCAQCD's Final Permit documents fail to set forth the factual and legal basis for its permitting decision. The Technical Support Document ("TSD") for the Final Permit must identify the legal and factual basis for the permit conditions, including references to the applicable statutory or regulatory provisions, as required by both PCAQCD Reg. § $3-1-060(B)(5)^{20}$ and A.A.C. § R18-2-304(J)(4).²¹ The language regarding "legal and factual basis for the proposed permit conditions" originates with 40 CFR § 70.7(a)(5), which sets forth the requirements for what the EPA commonly refers to as a "statement of basis."²² The EPA has provided extensive guidance on this topic.²³

https://www.azcentral.com/story/news/local/arizona/2022/03/27/randolphblack-pinal-county-community-choked-industrialization/6642525001/.

²⁰ PCAQCD Reg. § 3-1-060(B)(5) states: "The Control Officer shall provide a statement that sets forth the legal and factual basis for the proposed permit conditions including references to the applicable statutory or regulatory provisions. For Class I permits, the Control Officer shall send this statement to the Administrator and for any of Class I, II and III permits, to any other person who requests it."

²¹ A.A.C. § R18-2-304(J)(4) states: "The Director shall provide a statement that sets forth the legal and factual basis for the proposed permit conditions including references to the applicable statutory or regulatory provisions. The Director shall send this statement to any person who requests it and, for Class I permits, to the Administrator."

 22 40 C.F.R. § 70.7(a)(5) ("The permitting authority shall provide a statement that sets forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions). The permitting authority shall send this statement to EPA and to any other person who requests it.").

²³ See, e.g., Stephen Page, Director, EPA, Memorandum to Regional Air Division Directors, Regions 1-10, Re: Implementation Guidance on Annual Compliance Certification Reporting and Statement of Basis Requirements for Title V Operating Permits (Apr. 30, 2014), available at

https://www.epa.gov/sites/default/files/2015-08/documents/20140430.pdf; Title V Task Force, Final Report to the Clean Air Act Advisory Committee, Title V Implementation Experience (Apr. 2006),

available at https://www.epa.gov/sites/default/files/2014-10/documents/title5_taskforce_finalreport20060405.pdf; In the Matter of Onyx Sierra Club's November 15, 2023 comment letter on the draft permit advised PCAQCD that "[t]he Draft TSD avoids identifying the type of permit the District intends to issue for the facility, i.e., whether it would continue to be permitted as a synthetic minor source or whether the Expansion Project would require issuing a major source permit to the facility."²⁴ The Final TSD, which is only six pages long, again fails to clearly identify whether the Expansion Project is being permitted as a true minor source, a synthetic minor source, or a major source.²⁵

In its Responsiveness Summary to Sierra Club's related comment, PCAQCD incorrectly states, "[t]here is no requirement to designate a permit as major, minor or synthetic minor in the public notice." ²⁶ PCAQCD has a legal obligation to identify in its permitting documentation whether it is permitting the Expansion Project as a major source, minor source (true minor source), or synthetic minor source.²⁷ Such a designation is vital in identifying the regulatory requirements applicable to PCAQCD's permitting analysis. Without such a specific designation, Sierra Club and the public are left to guess under which legal program PCAQCD is proceeding. As will be discussed further below, PCAQCD offers conflicting statements in its permitting documents regarding whether it is permitting the Expansion Project as a synthetic minor source or a (true) minor source. Clarification of this point is critical in identifying legal regulatory requirements, as well as the applicability of any

Environmental Services, Order on Petition No. V-2005-1 (Feb. 1, 2006), available at https://www.epa.gov/sites/default/files/2015-08/documents/onyx_decision2004.pdf; Stephen Rothblatt, Chief, Air Programs Branch, EPA Region 5, Letter to Robert Hodanbosi, Chief, Division of Air Pollution Control, Ohio Environmental Protection Agency (Dec. 20, 2001) available at https://www.epa.gov/sites/default/files/2015-08/documents/sbguide.pdf.

²⁴ Exhibit 3 (Sierra Club Comment Letter) at 7.

²⁵ Exhibit 4 (TSD).

²⁶ PCAQCD, Summary and Response to Public Comments at 7 (Mar. 26, 2024), attached as Exhibit 9 hereto [hereinafter "PCAQCD Responsiveness Summary"].

²⁷ See PCAQCD Reg. § 3-1-060(B)(5); A.A.C. § R18-2-304(J)(4).

legal exemptions/exceptions (i.e., the inapplicability of the "one-time doubling" exception to PSD review discussed further below).²⁸

Sierra Club requests that EPA object to the Final Permit and related documentation issued by PCAQCD because it fails to clearly identify which regulatory program PCAQCD is applying to its permitting decision. Sierra Club also offers the following additional substantive claims in this Petition.

Petition Claim 1: The Administrator Must Object to the Final Permit Because PCAQCD Failed to Require NNSR and PSD Review of the Existing Facility and the Expansion Project.

Sierra Club's comment letter on the draft permit establishes that the existing facility and the Expansion Project are subject to NNSR and PSD review, as explained further below.²⁹

Rationale Provided by Pinal County as to Why the Expansion Project is Not Subject to NNSR and PSD Review

Pinal County's Responsiveness Summary on this issue asserts:

1) "PCAQCD [sic] has determined that the proposed new equipment is not subject to PSD and NNSR requirements."³⁰

2) "Since the existing Coolidge Generating Station equipment was regulated as a 'minor source', the PSD/NNSR requirements would only apply if the PTE from the proposed modification itself met the applicable emissions threshold for a 'major source'. In other words, the 'major modification' requirements under PSD/NNSR would not be applicable to an existing minor source; i.e., a 'major modification' cannot occur at an existing minor emissions source."³¹

3) "Because the draft permit proposed to establish enforceable emissions limits for all new equipment at levels below the 'major source' threshold, the proposed Coolidge expansion is not regulated under PSD and/or NNSR."³²

²⁸ Exhibit 3 (Sierra Club Comment Letter) at 18-23.

²⁹ *Id.* at 16-24.

³⁰ Exhibit 9 (PCAQCD Responsiveness Summary) at 10.

³¹ *Id*.

³² *Id.* at 11.

4) "[T]he draft permit does not provide for a relaxation of the current Coolidge permit limits as alleged by the Sierra Club comments."³³ 5) "PCAQCD determined that the proposed Coolidge modification would be a separate project that would not be part of the original Coolidge Generating Station. PCAQCD's determination was based on the time lag between the original permitting (Coolidge began operations in 2011) and the timing for the Expansion Project (2021 permit application). PCAQCD determined that the ten-year separation between the original plant operation and the proposed expansion was sufficient to establish the current proposal as a distinct and separate project not linked to the original Coolidge Generating Station construction and operation. As such, the current Coolidge Generating Station permit action did not constitute a 'sham permit' designated to circumvent the PSD/NNSR regulations."³⁴

Relevant Conditions in the Final Permit

As discussed more fully below, Sierra Club has commented that the Final Permit must include NNSR and PSD review. Despite these comments, Pinal County's Final Permit did not undertake a NNSR and/or PSD review. Thus, the Final Permit does not contain conditions that would be imposed if NNSR/PSD review was conducted and applied to the entire Coolidge Generating Station.

Detailed Demonstration of Permit Deficiency and PSD Applicability

With the Expansion Project, SRP proposes to significantly increase the capacity of and emissions from the existing Coolidge facility. The Final Permit imposes separate permit emission limits for the existing facility and the Expansion Project, each just under the applicable major source thresholds. This approach is not permissible.

a. <u>The Previous Permit regulated the existing facility as a synthetic</u> <u>minor source, not a true minor source.</u>

Pinal County's Responsiveness Summary incorrectly concludes that "the Coolidge Generating Station equipment was regulated as a 'minor source.'"³⁵ It was not. The previous permit made clear that the existing facility was regulated as synthetic minor source, not a true minor source. For example, the previous permit (Administrative Amendment V20676.A01) contains several synthetic

³³ *Id*.

³⁴ *Id*.

³⁵ Exhibit 9 (PCAQCD Responsiveness Summary) at 10.

minor emission limits, implemented explicitly to avoid PSD applicability. First, Condition 4.C.4 (Operational Limitations to Avoid PSD Applicability; Emissions Caps), Subsection 1 restricts emissions of CO, NO_x, VOC, and SO₂ from the facility to a cap of 245 tons per 12-calendar-month period per pollutant, citing to PCAQCD Reg. § 3-1-084 (Voluntarily Accepted Federally Enforceable Emissions Limitations).³⁶ Next, Condition 6.C (Operational Limitation/Emission Cap Compliance), Subsection 1 (Compliance with Synthetic Minor Limitations) constrains the facility's operation by requiring SRP to calculate 12-month rolling emissions to ensure that they do not exceed the 245 ton/year cap per pollutant.³⁷ Finally, Condition 11 (Equipment Schedule) places limits on the number and capacity of combustion turbines $(12 \times 54 \text{ MW})$ and emergency fire pumps $(1 \times 190 \text{ hp})$ SRP may operate under this permit.³⁸

In summary, Pinal County made a fundamental permitting error by concluding that the existing facility was permitted as a true minor source. When this error is corrected, recognizing that the existing facility was permitted as a synthetic minor source, it becomes clear that the proposed Expansion Project triggers NNSR/PSD review.

b. <u>The Final Permit Emission Limits for Existing Facility and</u> Expansion Project Exceed Major Source Thresholds.

Pinal County's Responsiveness Summary also errs by stating that because the "permit proposed to establish enforceable emissions limits for all new equipment at levels below the 'major source' threshold, the proposed Coolidge expansion is not regulated under PSD and/or NNSR."³⁹ As shown below, the Final Permit allows emissions to exceed major source thresholds thus triggering NNSR/PSD review.

Table 2 below, taken from Sierra Club's comment letter, summarizes the Previous Permit synthetic minor emission limits for criteria pollutants and precursors for the existing facility established in Administrative Amendment V20676.A01, which were imposed to avoid PSD review. Table 2 also summarizes the proposed permit limits for criteria pollutants and precursors for the existing facility and the Expansion Project specified in the Draft and

³⁶ Exhibit 5 (Previous Permit) at 7.

³⁷ *Id.* at 18.

³⁸ *Id.* at 31.

³⁹ Exhibit 9 at 11.

Final Permit. Table 2 further summarizes the future total facility-wide emission limits and provides the applicable NNSR and PSD major source thresholds for all pollutants. This information should have been provided in the Draft TSD but was not.

	Previous Permit V20676.A01	Final Permit V20676.R02				Major Source Threshold	
Pollutant	Existing Facility CT01-CT12 and Emergency Fire Pump ^a	Existing Facility CT01-CT12 and Emergency Fire Pump ^b	Expansion Project CT13-CT24 and WSAC1- WSAC6 ^e	Facili	Facility-wide ^d		PSD
PM10	245	69.9	69.9	24	139.8	70	-
PM2 5	245	69.9	69.9	-	139.8	-	250
NOx	245	245	249.5	-	494.5	-	250
VOC	245	245	249.5	2	494.5	-	250
CO	245	245	249.5	-	494.5	-	250
SO ₂	245	245	(none)		?	-	250
HAP single	2 (M)			9.0		10)
HAP total	140	· · · · · · · · · · · · · · · · · · ·	· · · · ·	22.5		25	5

Table 2: Existing and Final permit limits for all pollutants compared to applicable NNSR and PSD major source thresholds (in tons/year)

a Exhibit 5, Previous Permit V20676.A01, Condition 4.C.1

b Exhibit 1, Final Permit V20676.R02, Conditions 4.C.1 through 4.C.5

c Exhibit 1, Final Permit V20676.R02, Conditions 4.D.1 through 4.D.4

d For HAPs: Exhibit 1, Final Permit V20676.R02, Condition 4.F; for criteria pollutants and precursors: Total Future Facility-wide = (Existing: CT01-CT12 and Emergency Fire Pump) + (Expansion: CT13-CT24 and WSAC1-WSAC6) + (Facility-wide)

As shown in Table 2 above, by establishing separate permit limits for the existing facility and the Expansion Project, each barely below the applicable NNSR/PSD thresholds, the Final Permit allows more than double the potential total facility-wide permitted emissions of NO_x, VOC, and CO currently permitted for the existing facility. The permitted emissions of these pollutants (494.5 tons/year) exceed the applicable PSD thresholds for these pollutants (250 tons/year) by a factor of almost two (shown in **red**). Further, the Final Permit allows the total facility-wide emissions of PM₁₀ (139.8 tons/year) to exceed the now applicable NNSR threshold for this pollutant (70 tons/year) by a factor of almost two (shown in **red**). As noted previously, the existing facility was originally permitted when the area was designated attainment or unclassifiable for the PM₁₀ NAAQS.⁴⁰ The Final Permit carries forward the

⁴⁰ Exhibit 2 (Draft Permit) at 4.

current emission limit of 245 tons SO_2 per rolling 12-month period, but fails to impose the same, or any, annual SO_2 tonnage limit for CT 13-CT 24, which are estimated at an additional 11.7 tons/year.⁴¹ If the 11.7 tons/year ("tpy") SO_2 emissions from the Expansion Project are added to the allowable SO_2 emissions at the existing facility (245 tpy) the major source threshold of 250 tpy SO_2 is also exceeded (256.7 tpy).

In summary, Pinal County erred in concluding that the existing facility and Expansion Project do not exceed major source emission thresholds triggering PSD/NNSR review.

c. <u>The Final Permit Relaxes Current Emission Limits.</u>

Pinal County's Responsiveness Summary errs by concluding that the "permit does not provide for a relaxation of the current Coolidge permit limits as alleged by the Sierra Club comments."⁴²

With its permit application, SRP seeks to more than double the facility's existing 576 MW-capacity by adding twelve 49.5-MW combustion turbines for a total capacity of 1,170 MW.⁴³ More critically, SRP seeks permission to change existing emission and operating limits the facility accepted in order to avoid classification as a major source under the Clean Air Act's PSD program. SRP now requests to increase allowable emissions from the modified facility beyond the PSD major source thresholds without undergoing PSD review and permitting, summarized in Table 3 from Sierra Club's comment letter, as shown below.

⁴¹ Exhibit 1 (Final Permit) at 9; *see also* Exhibit 8 (2023 Revised Permit Application), Appendix B, Emissions Calculations, Table 7: Emissions Summary (Revised), Coolidge Generating Station Summary of Emissions for All Units under the Expansion for expected SO₂ emissions from Expansion Project.

⁴² Exhibit 9 (PCAQCD Responsiveness Summary) at 11.

⁴³ (Existing Facility: 12×48 MW) + (Expansion Project: 12×49.5 MW) = **1,170** MW.

	Previous Permit V20676.A01		Final Permit V20676.R02		
Pollutant	Existing Facility CT01-CT12 and Emergency Fire Pump ^a	Existing Facility CT01-CT12 and Emergency Fire Pump ^b	Expansion Project CT13-CT24 and WSAC1- WSAC6 ^c	Facility- wide ^e	PSD Major Source Threshold
NOx	245	245	249.5	494.5	250
VOC	245	245	249.5	494.5	250
CO	245	245	249.5	494.5	250
SO ₂	245	245	11.7	256.7	250

 Table 3: Existing and Final permit emission limits for criteria pollutants and precursors compared to applicable PSD major source thresholds (in tons/year)

a Exhibit 5 (Previous Permit), Administrative Amendment V20676.A01, Condition 4.C.1

b Exhibit 1, Final Permit V20676.R02, Conditions 4.C.1 through 4.C.5

c Exhibit 1, Final Permit V20676.R02, Conditions 4.D.1 through 4.D.4

d Exhibit 1, Final Permit V20676.R02, Condition 4.F

e Total Future Facility-wide = (Existing: CT01-CT12 and Emergency Fire Pump) + (Expansion: CT13-CT24 and WSAC1-WSAC6) + (Facility-wide)

It appears that SRP and PCAQCD are attempting to utilize a practice known as "one-time-doubling" to circumvent major source PSD permitting. One-time-doubling is an interpretation of the Clean Air Act and EPA's rules that allows for *true* minor sources⁴⁴ to become major sources without undergoing PSD review.⁴⁵ *However, this rationale does not apply to synthetic minor sources*⁴⁶ *that have previously agreed to enforceable restrictions on potential to emit to*

⁴⁴ "True minor source" means a non-synthetic minor source that emits, or has the potential to emit, regulated NSR pollutants in amounts that are less than the major source thresholds without the need to take an enforceable restriction to reduce its PTE to such levels. *See, e.g.,* 40 C.F.R. § 49.152.

⁴⁵ Specifically, the definition of a "Major Modification" under the PSD rules states that a major modification that would trigger PSD occurs when a major source makes certain physical or operational changes that increase emissions beyond the relevant thresholds. 40 C.F.R. § 52.21(b)(2)(i). Through this definition, one-time-doubling allows true minor sources to make modifications that increase emissions beyond the major source threshold without applying PSD. As discussed herein, however, the Source Obligation Rule at 40 C.F.R. § 52.21(r)(4) prohibits the use of this technique for synthetic minor sources.
⁴⁶ PCAQCD Reg. § 3-1-030(21) defines "synthetic minor sources" as "those sources with voluntarily [sic] permit limitations adopted pursuant to §3-1-084."

avoid major source PSD applicability. The so-called Source Obligation Rule (see discussion below) and longstanding EPA guidance are explicit that only *true* minor sources may undertake one-time-doubling. Once a source has agreed to synthetic minor limits to avoid PSD requirements, it must either adhere to those limits or undergo PSD review if it seeks to emit above those limits.⁴⁷ This situation applies to SRP's Coolidge Generating Station Expansion Project.

SRP now seeks to eliminate, change, and/or substantially relax the existing facility-wide synthetic minor limits for CO, NO_x, and VOC (and possibly SO₂) without undergoing PSD review. This is unlawful.

EPA has repeatedly dealt with similar attempts to evade PSD review and has consistently held that the so-called Source Obligation Rule requires PSD review in the current scenario. For example, when discussing the relaxation of a similar PTE limit, EPA wrote: "[a]lthough the facility-wide emission limit of 249.0 tpy for CO is enumerated in the permit, the permit should also state that if this limit is relaxed *at any time*, the facility will be subject to the requirements of 40 Code of Federal Regulations (CFR) 52.21(r)(4)" (emphasis added).⁴⁸

40 CFR 52.21(r)(4), the so-called Source Obligation Rule, specifies:

At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification.

⁴⁷ See, e.g., Amy Algoe-Eakin, Chief Air Permitting and Standards Branch, Air and Radiation Division, EPA Region VII, Letter to Sarah Piziali, Air Quality Bureau, Iowa Department of Natural Resources (Sept. 1, 2021), *available at* <u>https://www.epa.gov/system/files/documents/2021-09/johndeere 52.21r4.pdf</u>, attached as Exhibit 10 hereto.

⁴⁸ EPA Region 9, Comments on Refuse, Inc. Lockwood Regional Landfill (LRL)—Class I (Title V) Significant Revision at 1 (Mar. 29, 2011), *available at* <u>https://www.epa.gov/sites/default/files/2015-08/documents/lockwood.pdf</u>, attached as Exhibit 11 hereto [hereinafter "Comments on Refuse, Inc. LRL"].

In fact, the Previous Permit for the existing facility (Administrative Amendment V20676.A01) recognized the Source Obligation Rule and contained a provision to that effect as defined in PCAQCD Reg. § 3-3-250.H in Condition 4.C.4 (Consequence of Triggering PSD Review):

At such time that this facility becomes a major source or effects a major modification directly as a result of relaxation of the foregoing source-wide operational limitation and accompanying emission caps, then the requirements of Chapter 3, Article 3 of the Code (§3-3-200 *et seq.*) [describing permit requirements for new major sources and major modifications to existing major sources] shall apply to the source or modification as though construction had not yet commenced on the source or modification.⁴⁹

Yet, rather than applying this condition and subjecting both the existing facility and the Expansion Project to PSD review "as though construction had not yet commenced," Pinal County simply ignores the directive and copies the same language over into the Final Permit, Condition 4.C.4.⁵⁰ The Source Obligation Rule prohibits this.

For example, in the context of a generating station that requested to relax limits on annual heat input and resultant emissions that the facility had previously accepted to avoid PSD review, EPA wrote:

[The Source Obligation Rule] does not discuss intent; it simply states that any relaxation of an established limit that would make the project "major" would at that point in time make PSD applicable. That is, *the* (r)(4) *provision must be considered for the life of any project* for which enforceable limits were established such that *any subsequent requests for a relaxation* of the aforementioned limitations will necessitate their review within the originally-issued permits [i.e., PSD review] (emphasis added).⁵¹

⁴⁹ Exhibit 5 (Previous Permit) at 7.

⁵⁰ Exhibit 1 (Final Permit) at 7.

⁵¹ Steven C. Riva, EPA Region 2, Letter to William N. Viola, PSE&G Fossil LLC, Re: Request for PSD Applicability Determinations for Burlington 12 and Kearny 12 Generating Stations at 2 (Feb. 11, 2009), *available at* <u>https://www.epa.gov/nsr/request-psd-applicability-determinations-psegs-burlington-and-kearny-generating-stations</u>, attached as Exhibit 12 hereto.

The Arizona Department of Environmental Quality ("ADEQ") also acknowledged in its 2012 State Implementation Plan ("SIP") Revision that the Source Obligation Rule prohibits synthetic minor sources from taking advantage of the one-time doubling practice permitted for true minor sources:

Under the definition of "major stationary source" in SIP Rule 9-3-101, "any change to a minor source which would increase its emissions to the qualifying levels" (i.e. the major source thresholds of 100 or 250 tons per year) constitutes a construction of a major stationary source subject to major NSR. Under EPA rules, only major modifications to sources that already exceed the major source threshold are subject to the program. A modification to a minor source is subject to EPA's NSR program, only if it results in an increase greater than or equal to the major source threshold. ADEQ has referred to the EPA approach as the "one-time doubling rule," because it could theoretically allow a source close to the major source threshold to double its emissions without being subject to major NSR.

As explained in the [Notice of Final Rulemaking], Arizona law now requires ADEQ's regulations to be "no more stringent than the corresponding federal law that addresses the same subject matter." ADEQ therefore has amended its definition of major source to be consistent with EPA's. ADEQ anticipates that very few, if any, sources will be able to take advantage of the one-time doubling rule, because the overwhelming majority of minor sources with emissions close the major source threshold are subject to "synthetic minor" permit limits designed to insure that they do not exceed the threshold. Under the "source obligation rule," 40 C.F.R. § 52.21(r)(4); A.A.C. R18-2-403(C), R18-2-406(H), the relaxation of such a limit allowing the source to exceed the major source threshold would subject the source to major NSR.⁵²

⁵² Eric Massey, Director Air Quality Division, ADEQ, Letter to Jared Blumenfeld, Regional Administrator, EPA Region IX, Re: 2012 New Source Review State Implementation Plan (October 29, 2012), Attachment State Implementation Plan Revision, October 2012, at 12; *available at*: <u>https://downloads.regulations.gov/EPA-R09-OAR-2020-0589-</u> 0004/attachment 9.pdf attached as Exhibit 13 hereto.

Here, the "source", "facility", and "project" in question is the construction and operation of the entire Coolidge facility, for which the 245 ton/year facility-wide synthetic minor source emission limits were established in the previous permit. As EPA has explained in the foregoing guidance, relaxation of these limits subjects facilities like SRP's Coolidge Generating Station to PSD review.

Finally, the fact that SRP is also simultaneously undertaking a physical modification of the facility, in addition to relaxing synthetic minor limits, does not impact applicability of the Source Obligation Rule. In fact, EPA Region 4 squarely addressed this issue in a 2001 letter to North Carolina authorities in which EPA explained that the preamble to the federal PSD regulations "does not provide any support for the idea that a modification would preclude applicability of the relaxation provision."⁵³ EPA continued that "[i]f any modification, including a modification that was not 'major,' would nullify applicability of the relaxation provision, then misuse of the clause would occur," and that "to exclude projects involving a modification easily could lead to an abuse akin to sham permitting."⁵⁴ Finally, EPA summarized that "[i]f a source owner elects to accept an enforceable limitation to avoid PSD requirements for an emissions unit or process, then a revision of that limitation *for any reason* (including a physical change) could trigger the relaxation provision" (emphasis added).⁵⁵

In sum, the existing Coolidge facility and/or source would currently be a major source of CO, NO_x , and SO_2 (as well as of $PM_{2.5}$ and PM_{10}) if it had not agreed to enforceable synthetic minor limits that, to date, have allowed the facility to operate without undergoing PSD permitting.⁵⁶ As the foregoing

⁵³ R. Douglas Neeley, EPA Region 4, Response to Questions from Dr. Donald R. van der Vaart, Division of Air Quality, North Carolina Department of Environment and Natural Resources at 4 (Aug. 8, 2001) (emphasis added), *available at* <u>https://www.epa.gov/sites/default/files/2015-</u>07/documents/ppg2001.pdf, attached as Exhibit 14 hereto.

⁵⁴ Id.

⁵⁵ *Id*.

⁵⁶ See TSD for Permit No. V20635.A01 at 6, Table 3, Total Uncontrolled Potential to Emit Criteria Pollutants (including start-up/shutdown emissions, Total Annual (Mar. 31, 2010), attached as Exhibit 23 hereto ("To ensure that the facility does not reach the PSD emission threshold of 250 TPY, this permit

discussion makes clear, SRP cannot now simply shed those binding synthetic minor limits—and double CO, NO_x, and VOC emissions in the process—without undergoing PSD review.

d. <u>The Final Permit is a "sham permit."</u>

Pinal County's Responsiveness Summary incorrectly states:

PCAQCD determined that the proposed Coolidge modification would be a separate project that would not be part of the original Coolidge Generating Station. PCAQCD's determination was based on the time lag between the original permitting (Coolidge began operations in 2011) and the timing for the Expansion Project (2021 permit application). PCAQCD determined that the ten-year separation between the original plant operation and the proposed expansion was sufficient to establish the current proposal as a distinct and separate project not linked to the original Coolidge Generating Station construction and operation. As such, the current Coolidge Generating Station permit action did not constitute a 'sham permit' designated to circumvent the PSD/NNSR regulations.⁵⁷

Pinal County's conclusion that the Expansion Project is a "distinct and separate project not linked to the original Coolidge Generating Station" is unsupported by fact, law, or policy. First, Pinal County's own Final Permit is proof that the Expansion Project is part of the existing facility and is not distinct or separate. The entire Coolidge facility (both the current generating units and Expansion Project) is known by a single name (the Coolidge Generating Station) and all twelve new combustion turbines would be located on the same property as the existing 12 combustion turbines. The 12 new combustion turbines contemplated by the Expansion Project are nearly identical to the 12 combustion turbines originally installed. The Coolidge Generating Station is a single integrated electrical generating facility, and the 12 new generating units would rely on shared infrastructure in common with the 12 existing units. The new units would rely on existing infrastructure at the site, as they would be served by the same water supply, the same electric transmission lines, and the

for PSD purposes, not only imposes "synthetic minor operating limitations but also 12 month rolling "budget" emission calculations…"). ⁵⁷ Exhibit 9 (PCAQCD Responsiveness Summary) at 11. same gas pipelines as the existing units.⁵⁸ Moreover, the Expansion Project includes the addition of new infrastructure that would serve the *existing* generating units, not just the new units. As discussed in Sierra Club's comments, SRP's permit application indicates that of the six new WSACs included in the Expansion Project, three of those WSACs would serve inlet chillers for the *existing* turbines, while the other three would serve the new turbines.⁵⁹ The reliance of both new and existing generating units on shared equipment—and the Expansion Project's addition of new equipment intended to serve existing units—conclusively demonstrates that the Expansion Project and the existing generating units as single permit governing both the existing generating units and the Expansion Project, the Final Permit acknowledges that the current units and Expansion Project constitute a single facility.

Pinal County's rationale that "the ten-year separation between the original plant operation and the proposed expansion" renders them distinct is undercut by EPA policy and SRP's previous permit. As noted above, 40 C.F.R. § 52.21(r)(4), the so-called Source Obligation Rule, specifies:

At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification (emphasis added).

EPA previously interpreted this provision by stating, "[a]lthough the facility-wide emission limit of 249.0 tpy for CO is enumerated in the permit, the permit should also state that if this limit is relaxed *at any time*, the facility

⁵⁸ See Arizona Power Plant and Transmission Line Siting Committee Proceeding for Coolidge Expansion Project, February 8, 2022 Hearing Transcript, Vol. II at 266, 362-363, No. L-00000B-21-0393-00197 (Ariz. Corp. Comm'n Feb. 22, 2022) attached as Exhibit 15 hereto.

⁵⁹ Exhibit 3 (Sierra Club Comment Letter) at 11; Exhibit 8 (2023 Revised Permit Application) at 3-1.

will be subject to the requirements of 40 Code of Federal Regulations (CFR) 52.21(r)(4)" (emphasis added).⁶⁰

Also noted above, the previous permit for the existing Coolidge facility (Administrative Amendment V20676.A01) also recognized the Source Obligation Rule and contained a provision to that effect as defined in PCAQCD Reg. § 3-3-250.H in Condition 4.C.4 (Consequence of Triggering PSD Review):

At such time that this facility becomes a major source or effects a major modification directly as a result of relaxation of the foregoing source-wide operational limitation and accompanying emission caps, then the requirements of Chapter 3, Article 3 of the Code (§3-3-200 *et seq.*) [describing permit requirements for new major sources and major modifications to existing major sources] shall apply to the source or modification as though construction had not yet commenced on the source or modification.⁶¹

Finally, Pinal County's Responsiveness Summary offers no legal support for its finding that "PCAQCD determined that the ten-year separation between the original plant operation and the proposed expansion was sufficient to establish the current proposal as a distinct and separate project not linked to the original Coolidge Generating Station construction and operation."⁶² As discussed above, the Expansion Project and the original Coolidge plant are a single integrated facility, not two separate projects. In the absence of such legal authority, the Source Obligation Rule, EPA's interpretation of the Rule, and the language of the previous permit govern.

Conclusion

The Final Permit is unlawful because it fails to undertake PSD/NNSR review. EPA must object to the Final Permit on this ground. If PCAQCD proceeds to issue a new draft permit, EPA should direct PCAQCD to revise the Final Permit by employing one of the following alternatives:

⁶⁰ Exhibit 11 (EPA Region 9 Comments on Draft Air Permit- Lockwood Regional Landfill) at 1.

⁶¹ Exhibit 5 (Previous Permit) at 7.

⁶² Exhibit 9 (PCAQCD Responsiveness Summary) at 11.

- 1. Permit the Existing Facility plus the Expansion Project as a major stationary source subject to NNSR and PSD review;
- 2. Permit the Existing Facility plus the Expansion Project as a synthetic minor source with combined total facility-wide synthetic minor emission limits below the applicable NNSR and PSD thresholds; or
- 3. If SRP agreed to shut down the Existing Facility, the Expansion Project could be permitted as a new synthetic minor source with facility-wide synthetic minor emission limits below the applicable NNSR and PSD thresholds.

Petition Claim 2: The Air Modeling Analysis Relies on Improper Background Concentrations to Find Compliance with the 24-hour PM₁₀ NAAQS

Sierra Club's comment letter demonstrated that SRP's 2021 Modeling Report was deficient because it failed to incorporate continuous monitoring data and certified ambient concentrations of PM₁₀ for the three-year period preceding the permit application from the closest Eleven Mile Corner PM₁₀ monitoring site.⁶³ Sierra Club also explained that "there is no justification whatsoever to choose background data from the Coolidge monitoring site over those from the Eleven Mile Corner monitor."⁶⁴ When appropriate background monitoring data is used, the results show that the Expansion Project would cause substantial exceedances of the PM₁₀ NAAQS.

Response provided by Pinal County Regarding Adequacy of Air Quality Dispersion Modeling

In its Responsiveness Summary, PCAQCD states:

The modeling relies upon dispersion modeling completed in 2021 by SRP. The 2021 modeling was reviewed by ARS and a copy of the review report is attached. ARS found that the 2021 modeling demonstrated compliance with the applicable NAAQS. Please note that the 2021 SRP modeling was based on adding 16 new turbines and 7 WSACs while the final proposal was only 12 turbines and 6 WSACs.

⁶³ Exhibit 3 (Sierra Club Comment Letter) at 32-39.

⁶⁴ *Id*. at 39.

PM-10 Background Concentration. Based on the 2021 modeling, the PM-10 impacts were slightly higher than the applicable significant impact limit (SIL), e.g., 5.62 vs. 5.0 micrograms per cubic meter. However, if the 2021 modeling is adjusted for the change in the project (12 turbines vs. 16 turbines), the revised PM-10 concentration would be less than the SIL, e.g., $5.62 \times (12/16) = 4.2 \text{ micrograms per cubic meter}$. This adjustment is accurate as the PM-10 emissions were mostly from the turbines and the WSAC emissions did not contribute to the modeled PM-10 concentrations. Because the PM-10 impacts for the final project would be less than the SIL, the discussion of background PM-10 becomes moot. If the modeled PM-10 impacts are less than the SIL, the modeling demonstrates PM-10 compliance and a full-scale cumulative modeling analysis including a background PM-10 concentrations is not required.⁶⁵

Relevant Conditions in the Final Permit

There are no relevant conditions in the Final Permit because PCAQCD did not require SRP to use the continuous monitoring data and certified ambient concentrations of PM_{10} for the three-year period preceding the permit application from the closest Eleven Mile Corner PM_{10} monitoring site. Pinal County's Final Permit is illegal, because it ignores evidence that the Expansion Project will cause or contribute to an interference with the PM_{10} NAAQS.

SRP provided cumulative air impact modeling, and the County reviewed that modeling. The County had an obligation to base its decision on the information before it, and to ensure that the modeling it reviewed was accurate. The modeling prepared by SRP and reviewed by PCAQD used outdated background monitoring data and inappropriately cherry-picked data. When appropriate background monitoring data is used, the Expansion Project would result in substantial exceedances of the PM_{10} NAAQS, as discussed below.

Detailed Demonstration of Permit Deficiency

a. The County Failed to Require Data from the Most Recent 3 Years.

As discussed below, SRP's 2021 Modeling Report inappropriately cherry-picks monitoring data to establish background concentrations of PM_{10} in

⁶⁵ Exhibit 9 (PCAQCD Responsiveness Summary) at 14.

the vicinity of the Coolidge Generating Station to avoid evidence that the Expansion Project will cause or contribute to an interference with the PM_{10} NAAQS.

EPA's Ambient Monitoring Guidelines requires that air quality monitoring data used to meet New Source Review air permitting regulations must be current and for preconstruction modeling "must have been collected in the 3-year period preceding the permit application..."⁶⁶ The 2021 Modeling Report submitted with SRP's 2021 permit application similarly states that "air quality monitoring data used to meet PSD data requirements should be 'collected in the 3-year period preceding the permit application.."⁶⁷

At the time that SRP submitted its permit application for its original expansion proposal to Pinal County in 2021, SRP used data from 2017-2019 to characterize background concentrations of PM₁₀, and 2018-2020 data for background concentrations of other air pollutants.⁶⁸ SRP then submitted a 2023 Revised Application and again relied on the same air quality modeling data it submitted with its 2021 permit application for its earlier expansion proposal. Pinal County approved reliance on the 2021 air quality modeling for purposes of determining that the 2023 revised Expansion Project would not cause or contribute to a violation of the NAAQS. Thus, for a permit application submitted in 2023, SRP and the County are relied on air quality modeling that uses 2017-2019 data to characterize background concentrations of PM_{10} , and 2018-2020 data for background concentrations of other air pollutants.⁶⁹ This conflicts with the statement in SRP's air quality assessment that the most recent three years of data should be used to characterize background concentrations of air pollutants.⁷⁰ It also conflicts with EPA's Ambient Monitoring Guidelines.⁷¹ EPA must object to the County's failure to require data for the most recent three years.

https://www.epa.gov/nsr/ambient-monitoring-guidelines-prevention-significantdeterioration, excerpt attached as Exhibit 16 hereto.

⁶⁶ EPA, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD) at 9 (May 1987), *available at*

⁶⁷ Exhibit 7 (SRP's 2021 Modeling Report) at 4-8.

⁶⁸ *Id.* at 4-8, 4-9.

⁶⁹ Id.

⁷⁰ Exhibit 7 (SRP's 2021 Modeling Report) at 4-8.

⁷¹ Exhibit 16 (Ambient Monitoring Guidelines for Prevention of Significant Deterioration) at 9.

b. <u>The County Failed to Require Use Of Data From Eleven Mile</u> <u>Corner.</u>

For PM₁₀, two monitor sites measuring ambient PM₁₀ background concentrations are almost equidistant from the Coolidge Generating Station, as shown in the excerpted map from the EPA's website below. The monitor at the Pinal County Housing Complex at 970 N Eleven Mile Corner Road in Casa Grande (hereafter "Eleven Mile Corner"; Site ID 40213011) is 4.3 miles to the southwest from the Coolidge Generating Station site when measured to the center of the existing facility. The Coolidge Maintenance Yard monitor site at 212 E Broadway east of Coolidge City (hereafter "Coolidge"; Site ID 40213004), which shut down in 2019, was located 4.3 miles to the north of the Coolidge Generating Station.⁷² When measured from the monitors to the nearest site boundary, which is appropriate for modeling purposes, the Eleven Mile Corner monitor is somewhat closer with 3.9 miles, compared to the Coolidge monitor, which was located 4.2 miles from the site boundary.⁷³

https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f4 24f98ef3d5def547eb5&extent=-146.2334,13.1913,-46.3896,56.5319. ⁷³ Id.

⁷² EPA, AirData Air Quality Monitors, available at



Excerpted from: EPA, AirData, Air Quality Monitors near Randolph, Arizona, available at https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f424f98ef 3d5def547eb5&extent=-146.2334,13.1913,-46.3896,56.5319.

Not only is the Eleven Mile Corner monitor closer, it also provides continuous monitoring data, and certified ambient concentrations of PM_{10} are available for the three-year period preceding the original 2021 permit application (2018-2020) and the three-year period preceding the 2023 revised application (2020-2022). In contrast, the Coolidge monitoring site operated two monitors on a one-in-six-day sampling schedule only and ceased operation at the end of 2019;⁷⁴ it therefore does not have certified ambient PM_{10} concentrations for the three-year period preceding the permit application, as required by the EPA.

During discussions regarding preparation of the 2021 Modeling Protocol, SRP proposed using monitoring data from the Coolidge monitoring site using the most recent available three-year period of data from that site, i.e., 2017-2019. However, Pinal County requested the use of the most current data (2018-2020) and advised SRP on the availability of more recent continuous monitoring data from other PM_{10} monitoring sites which provide a more complete indication of daily concentrations:

"We request the use of the most current data, including the period from 2018-2020. 2020 data was certified in May predating the submission of the protocol and is also the most relevant/current dataset.

• • •

We await additional discussion regarding the use of the Coolidge 1 in 6 PM10 data. Please consider that the Coolidge site was closed at the end of 2019 and will not have the most current available data. Additionally, all other PM10 sites we operate are continuous and provide a more complete indication of daily concentrations."⁷⁵

Yet SRP's consultant, incorrectly claiming that the former Coolidge monitoring site was the closest monitor, insisted on providing a "justification" for using the older data from the closed Coolidge monitoring site instead of more recent data from the closer Eleven Mile Corner monitoring site because

⁷⁴ EPA, AirData, Air Quality Monitors near Randolph, Arizona; *available at*: <u>https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f4</u> 24f98ef3d5def547eb5&extent=-146.2334,13.1913,-46.3896,56.5319.

⁷⁵ Michael Sundblom, Pinal County, Email to Kristin Watt, SRP, Re: Coolidge Modeling Protocol (Sept. 3, 2021, 11:13 am) (emphasis added), attached as Exhibit 17 hereto.

they recognized that the Eleven Mile Corner site showed exceedances of the PM_{10} NAAQS:

"For PM10, Pinal County understands why we would choose the Coolidge monitor since it's the closest location to Coolidge, however this monitor has a 1 in 6 day sample schedule. Pinal County indicated we could use the Eleven Mile Corner monitor since it's a continuous monitor, <u>but this location does have</u> <u>exceedances of the NAAQS</u>. Alternatively, we could justify why we are using the Coolidge monitor data that does not have a continuous sample over another nearby location that has a continuous sample."⁷⁶

Table 5 below from Sierra Club's comment letter shows the background concentrations measured at the two Coolidge monitors from 2017 through 2019 and the Eleven Mile Corner monitor from 2017 through 2019 as well as the three-year averages for 2017 through 2019 and 2018 through 2020.⁷⁷

Table 5: PM₁₀ background concentrations from Coolidge and Eleven Mile Corner monitoring stations

PM10 (2 nd highest)	2017	2018	2019	2020	Average 2017-2019	Average 2018-2020
Coolidge Monitor 1	100	140	66	5	102.0	2
Coolidge Monitor 2	99	137	52	144	96.0	
Coolidge average	99.5	138.5	59		99.0	
Eleven Mile Corner	185	139	145	147	156.3	143.7

Data from: EPA, Outdoor Air Quality Data, Monitor Values Report (Exceptional Events data excluded); available at: <u>https://www.epa.gov/outdoor-air-quality-data/monitor-values-report</u>

From these data, it is evident why SRP sought to justify opting to use older data from the now defunct Coolidge monitoring site instead of the more current Eleven Mile Corner data. Specifically, for two out of three years the Eleven Mile Corner monitoring data are considerably higher than the Coolidge monitoring data, with the applicable three-year average preceding the application (2018-2020) of **143.7** micrograms per cubic meter (" μ g/m³").

⁷⁶ David Keen, RTP Environmental Associates, Email to Kristin Watt, SRP, Re: Coolidge Modeling Protocol (Aug. 27, 2021, 4:02 pm) (emphasis added), attached as Exhibit 18 hereto.

⁷⁷ Exhibit 3 (Sierra Club Comment Letter) at 37.

In contrast, SRP instead used the much lower three-year average for 2017-2019 from Coolidge Monitor 2 of **96.0** μ g/m³,⁷⁸ cherry-picking even among the two monitors instead of using either the higher or the average of the two monitors (102 and 99 μ g/m³, respectively).

SRP's 2021 Modeling Report attempts to justify the use of Coolidge monitor data as follows:

"The Coolidge monitor sampling frequency of once every six days is consistent with 40 CFR § 58.12(e). Among monitoring sites satisfying the requirements of 40 CFR part 58, sampling frequency is not a pertinent factor listed in the Monitoring Guidelines as a factor to be considered in evaluating whether the proposed monitoring data are representative."⁷⁹

While monitors with a one-in-six day sampling frequency can sometimes be acceptable under 40 CFR § 58.12(e) (depending on monitored concentrations relative to the NAAQS), this "justification" entirely skirts the issue of how to justify choosing an inferior data set from a monitor site that was discontinued during the three years before submittal of the application over a continuous monitor that operated during the applicable timeframe application. There is no justification for the use of this inferior data.

The 2021 Modeling Report further claims regarding the Coolidge monitor site:

This is the closest monitor to the SRP site and there has been no significant residential or industrial growth in the area since 2019 that would significantly influence current PM10 concentrations in the area. The population in Pinal County decreased by approximately 37,000 in 2020 as compared to 2019.⁸⁰

This statement is both incorrect and not supported. As discussed before, according to EPA's map for air quality monitors, the Eleven Mile Corner monitor is at least as close, if not closer, to the Project site as the Coolidge

⁷⁸ SRP, Air Dispersion Modeling Protocol for the Proposed Expansion of the Coolidge Generating Station at 4-9, Table 1 (Aug. 2021), attached as Exhibit 19 hereto.

⁷⁹ Exhibit 7 (SRP's 2021 Modeling Report) at 4-8.
⁸⁰ *Id.*

monitor. Both the Applicant and the District fail to acknowledge that the Coolidge Generating Station is located immediately adjacent to the unincorporated residential community of Randolph, which is much closer to the plant than residential areas of the City of Coolidge.

For the cited population counts, the Applicant relies on U.S. Census Bureau data for 2019 and on a Pinal County news article for 2020 (web link broken):

7. United States Census Bureau, population in 2019 was 462,789. https://www.census.gov/quickfacts/fact/table/pinalcountyarizona/PST045219.

Pinal County, population in 2020 was 425,264. https://www.pinalcountyaz.gov/News/Pages/Article.aspx?myID=1632

The Applicant provides no justification for using population data from two different sources and provides no discussion whether these two data points are based on the same methodology (e.g., 1-year or 5-year average estimate) and, thus, comparable. The cited 2019 population of Pinal County of 462,789 is the one-year American Community Survey ("ACS") estimate from the U.S. Census Bureau based on the most recent decennial census.⁸¹ The agency did not provide a one-year ACS estimate for Pinal County for the year 2020. As such, the population count of 425,264 for the year 2020 from the Pinal County news article must have relied on a different source/methodology. As such, the provided data points are not comparable because they do not rely on the same methodology.

The U.S. Census Bureau also provides annually updated annual resident population estimates for 10-year periods.⁸² (These population estimates are used for federal funding allocations, as controls for major surveys including the Current Population Survey and the ACS, for community development, to aid business planning, and as denominators for statistical rates. Overall, the

⁸¹ U.S. Census Bureau, Table for Pinal County, Population Total, B01003 Total Population, 2019: ACS 1-Year Estimates Detailed Tables, *available at* <u>https://data.census.gov/table/ACSDT1Y2019.B01003?q=United+States&t=Pop</u> <u>ulation+Total&g=050XX00US04021_060XX00US0402190816</u>.

⁸² U.S. Census Bureau, Datasets, Annual Resident Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for States and Counties, *available at* <u>https://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-total.html</u>.

estimate for time series was very accurate.) Table 6 from Sierra Club's comment letter summarizes estimates of population, year-over-year population increase, and the year-over-year percent change for Pinal County and Coolidge City.

	2017	2018	2019	2020
Pinal County				
<i>Population^a</i>	431,490	446,524	461,640	476,349
Year-over-year population change		15,034	15,116	14,709
Year-over-year percent change		3.5%	3.4%	3.2%
Coolidge City			72	
Population ^b	12,702	12,925	13,136	13,624
Year-over-year population change		223	211	488
Year-over-year percent change	-	1.8%	1.6%	3.7%

Table 6: Pinal County and Coolidge City resident population estimates (2017-2020)

a U.S. Census Bureau, Datasets/2010-2020/Counties/Totals, available at https://www2.census.gov/programs-surveys/popest/datasets/2010-2020/counties/totals/coest2020.csv

b U.S. Census Bureau, Datasets/2010-2020/Cities; available at: <u>https://www2.census.gov/programs-surveys/popest/datasets/2010-2020/cities/SUB-EST2020_ALL.csv</u>

Based on these datasets, from 2019 through 2020 the population in Pinal County grew by 14,709 (3.2%) and in Coolidge City by 448 (3.7%).

In sum, there is no justification whatsoever to choose background data from the Coolidge monitoring site over data from the Eleven Mile Corner monitor.

c. The Expansion Project Results in PM₁₀ NAAQS Exceedances.

Since the maximum hourly emission rates for PM_{10} for each combustion turbine have not changed between the 2021 and 2023 Revised Application, Sierra Club prepared a simplified analysis of modeled ambient air concentrations to account for the reduction in the number of combustion turbines from 16 to 12, as summarized in Table 7 from Sierra Club's comment letter,⁸³ reproduced below.

⁸³ Exhibit 3 (Sierra Club Comment Letter) at 40.

Table 7: Estimated PM10 concentrations for 28 and 24 combustion turbinescompared to the 2018-2020 average ambient PM10 background concentration from Eleven MileCorner and the 24-hour PM10 NAAQS (in μ g/m³)

Number of Combustion Turbines	PM10 Concentration	2018-2020 Average Ambient PM ₁₀ Background Concentration ^c	Total PM10 Concentration	1987 24-hour PM ₁₀ NAAQS	Exceeds NAAQS?	Percent Exceeded
28 (12+16)	41.1ª	1427	184.8	150	YES	23%
24 (12+12)	35.2 ^b	145./	178.9	150	YES	19%

a Modeled PM10 concentration in ambient air from Exhibit 4 (TSD) at 5, and Exhibit 7 (SRP's 2021 Modeling Report) at 6-3, Table 5, NAAQS Analysis.

b Estimated PM10 concentration in ambient air for 24 turbines = (PM10 concentration for 28 turbines) / 28×24

c Eleven Mile Corner monitoring data from Table 6

As shown in Table 7, even with only 24 turbines, the sum of modeled ambient PM_{10} concentrations and the 2018-2020 background concentration from the Eleven Mile Corner monitor, **178.9 µg/m³**, would result in exceedance of the 1987 24-hour PM_{10} NAAQS of **150 µg/m³** by 19 percent and would thus hinder West Pinal County's progress towards attainment of the PM_{10} NAAQS. Further, this approach is conservative-- given that the 12 existing combustion turbines have higher PM_{10} emission rates than the 12 new combustion rates. The above analysis underestimates emissions from 24 turbines and is thus conservative.

Regardless of whether the Applicant was legally required to submit NAAQS compliance modeling for this permit application, the Applicant chose to do so, and that information is before the County and EPA. SRP provided cumulative modeling analysis, and the County reviewed and provided feedback on that analysis. The initial modeling provided by SRP showed that the original iteration of the Expansion Project would exceed the SIL for PM₁₀, as the County acknowledges.⁸⁴ SRP did not provide updated modeling for the Expansion Project when it submitted its revised application in 2023, continuing to rely on the 2021 modeling. That modeling relied on outdated background monitoring data and inappropriately cherry-picked monitoring data, as discussed above in subsections (a) and (b). When appropriate background data from Eleven Mile Corner monitoring station is used, the results show substantial exceedances of the PM₁₀ NAAQS for 12 new combustion turbines, just as it does for 16 turbines. The County had a responsibility to base its decision on the information before it. Pinal County and EPA cannot ignore the

⁸⁴ Exhibit 9 (PCAQCD Responsiveness Summary) at 14.

evidence before them that the Expansion Project would cause or contribute to interference with the NAAQS.

Pursuant to A.A.C. § R18-2-334(F)⁸⁵ and PCAQCD Reg. § 3-1-070,⁸⁶ it is unlawful to grant a permit if ambient air quality modeling demonstrates that a project would interfere with attainment or maintenance of the NAAQS. Here, EPA must object to the Final Permit because air modeling shows that the Expansion Project would result in a violation of the NAAQS.

Conclusion

EPA must object to the Final Permit because the County did not require ambient PM_{10} data for the most recent three year period from the closest monitoring site, and the cumulative modeling analysis is therefore inadequate. Further, the evidence before the EPA demonstrates that the Expansion Project will cause or contribute to a violation of the PM_{10} NAAQS.

⁸⁵ A.A.C. § R18-2-334(F) ("The Director shall deny an application for a Class I permit or permit revision or a Class II permit or permit revision subject to this Section, if an assessment conducted pursuant to subsection (C)(2) demonstrates that the source or modification will interfere with attainment or maintenance of a national ambient air quality standard.").

⁸⁶ PCAQCD Reg. § 3-1-070 ("The Control Officer shall deny a permit or permit revision if: 1. At a minimum, the Control Officer does not find that every such source described within the purview of the application, the use of which may cause or contribute to air pollution, or the use of which may eliminate or reduce or control the emission of air pollutants, is so designed, controlled, or equipped with such air pollution control equipment that it may be expected to operate without emitting or without causing to be emitted air contaminants in violation of the provisions of this Code, Arizona Revised Statutes as amended by the Arizona Session Laws 1992, Chapter 299, the Clean Air Act (1990), and the Arizona State Implementation Plan as set forth in 40 C.F.R. Part 52, Subpart D...").

Petition Claim 3: The Federally Enforceable Provisions are Not Enforceable Because of the Failure to Include Operational Limits.

Sierra Club's comment letter stated that the Federally Enforceable Provision ("FEPs") emission limits in the Final Permit were not enforceable, or not enforceable as a practical matter, because Pinal County failed to impose operational limits during normal operating hours and operational limits on the number of startups and shutdowns.⁸⁷

Rationale provided by Pinal County as to Why it Did Not Impose Operational Limits During Normal Operating Time or Operational Limits on the Number of Startups/Shutdowns

In its Responsiveness Summary, PCAQCD states:

Such restrictions are unnecessary as the permit already contains federally-enforceable conditions that limit overall emissions; e.g., Condition 5.C restricts emissions for the existing equipment (CT01-12 plus the fire water pump) and Condition 5.D restricts emissions for the proposed new equipment (CT13- 24 and WSAC 1-6). These limits have the effect of limiting equipment operation. In order to meet the enforceable emissions limits, the subject equipment will not be able to operate without restriction. However, the number of operating hours and the number of startups will be allowed to fluctuate provided that the overall emission limits are achieved.⁸⁸

Relevant Conditions in the Final Permit

There are no relevant conditions in the Final Permit because PCAQCD did not impose operational limits during normal operating time nor did it impose operational limits on the number of startups/shutdowns.

Detailed Demonstration of Permit Deficiency

Sierra Club's comment letter explained why the Final Permit's Federally Enforceable Provisions must impose operational limits during normal operating

⁸⁷ Exhibit 3 (Sierra Club Comment Letter) at 24-27.

⁸⁸ Exhibit 9 (PCAQCD Responsiveness Summary) at 12.

time and operational limits on the number of startups/shutdowns.⁸⁹ The applicable rules for creating federally enforceable limits on the potential to emit of a source are found in A.A.C. § R18-2-306.01 and PCAQCD Reg. § 3-1-084. PCAQCD Reg. § 3-1-084 provides as follows:

A permit may, for the purpose of creating federally enforceable conditions that limit the potential emissions of a source, designate as a "federally enforceable provision" ("FEP Limit") <u>any emission limit in conjunction with a production limit and/or operational limit</u> expressed in the permit. A FEP Limit must be permanent, quantifiable and enforceable as a practical matter, and shall be at least as stringent as otherwise applicable limitations and requirements under either the SIP or pertinent provision of the Clean Air Act (1990), and shall not operate to relieve any other legal restriction on emissions.⁹⁰

A.A.C. § R18-2-306.01(A) defines "enforceable as a practical matter" to mean that "specific means to assess compliance with an emissions limitation, control, or other requirement are provided for in the permit in a manner that allows compliance to be readily determined by an inspection of records and reports."

EPA has stated the following regarding the criteria for emission limits to be enforceable as a practical matter:

In general, practical enforceability for a source-specific permit term means that the provision must specify (1) a technically accurate limitation and the portions of the source subject to the limitation; (2) the time period for the limitation (hourly, daily, monthly, annually); and (3) the method to determine compliance including appropriate monitoring, record keeping and reporting.⁹¹

⁸⁹ Exhibit 3 (Sierra Club Comment Letter) at 24-27.

⁹⁰ PCAQCD Reg. § 3-1-084(1) (emphasis added).

⁹¹ See Kathie Stein, Director, Air Enforcement Division, EPA, Memorandum re: Guidance and Enforceability Requirements for Limiting Potential to Emit though SIP and §112 Rules and General Permits at 6 (Jan. 25, 1995), *available at* <u>https://www.epa.gov/sites/default/files/2015-08/documents/potoem.pdf</u>, attached as Exhibit 20 hereto.

The Final Permit contains federally enforceable emission limits for the Expansion Project pursuant to PCAQCD Reg. 3-1-084 and A.A.C. § R18-2-306.1(A) and (B) as combined emissions limits for the twelve new combustion turbines (CT13-CT24) and six new WSACs (WSAC1-WSAC6), both on a rolling 12-month basis and combined for normal operation and startup/shutdown,⁹² as summarized in Table 4 from Sierra Club's comment letter:

Pollutant	CT13-CT24 and WSAC1-WSAC6 ^{a,b}
PM10	69.9
PM _{2.5}	69.9
NO _x	249.5
VOC	249.5
CO	249.5
SO ₂	(none)
HAPs single	9.0
HAPs total	22.5

Table 4: Permit limits for Expansion Project for all pollutants combined for normal operation and startup/shutdown duration (in tons/12-month rolling total sum)

a For criteria pollutants and precursors: Exhibit 1, Final Permit V20676.R02, Conditions 4.D.1 through 4.D.4

b For HAPs: Exhibit 1, Final Permit V20676.R02, Condition 4.F

As discussed below, the Final Permit does not contain enforceable permit conditions for the combustion turbines and control equipment.

a. Combustion Turbines

SRP's permit application states that emissions estimates for the Expansion Project's 12 combustion turbines are based on the following assumptions:

In accordance with definition of PTE under A.A.C. R18-2-101(110), SRP used the manufacturer's emissions data to estimate PTE of each regulated NSR pollutant for the proposed CTs. For this purpose, we are using the CTs' emissions information for the

⁹² Exhibit 1 (Final Permit) at 9, Conditions 5.C (criteria pollutants and precursor emissions from CT1-CT12), 5.D (criteria pollutants and precursor emissions from CT13-CT24), and 5.F (facility-wide hazardous air pollutant emissions).

site conditions at 59 °F ambient temperature, which corresponds to the worst-case emission rates of regulated NSR pollutants.⁹³

SRP assumed that each unit would have 1,800 hours per year of normal operation and startup and shutdown would occur a maximum of 730 times per unit per year.⁹⁴

b. <u>Number of Normal Hours and Startup/Shutdown Events</u> For startup and shutdown, SRP states:

The post-combustion air pollution control systems—SCR and oxidation catalysts—are not operational during the startup and shutdown of the aeroderivative combustion turbines because the exhaust gas temperatures are too low for these systems to function as designed. Water injection is used to reduce NOx emissions from these CTs. The earlier that water injection can be initiated during the startup process, the lower NOx emissions will be during startup. However, if injection is initiated at very low loads, it can impact flame stability and combustion dynamics, and it may increase CO emissions. These concerns must be carefully balanced when determining when to initiate water injection. During a startup, once the CT achieves minimum emissions compliance load ("MECL"), the CT post-combustion emissions controls reduce the stack emission rates of NOx and CO below the emission rates listed below (in Table 4-2) for normal operation.

For simple cycle CTs, the time required for startup is much shorter than CTs used in combined cycle applications. The aeroderivative CTs are able to achieve full capacity within 10 minutes but the SCR requires a warm-up of up to 20 minutes to achieve optimum temperature for emissions control. Therefore, the unit achieves MECL in 30 minutes and for purposes of this permit application, emissions calculations have been conducted using the full 30 minutes for a startup cycle. The length of time for a normal shutdown, that is, the time from the MECL to the time when the

⁹³ Exhibit 8 (2023 Revised Permit Application) at 4-4 (internal citations omitted).

⁹⁴ *Id.* at 4-4, and Appx. B, Emissions Calculations, Table 1, Operating Scenario Inputs.

flame out occurs, is normally 9 minutes. Therefore, the normal duration for a startup and a shutdown cycle is 39 minutes. The startup and shutdown annual emissions are calculated using the maximum number of startup and shutdown cycles per year per aeroderivative CT. Particulate matter, NO_x , CO, and VOC emission rates during startup and shutdown, in terms of pounds per event, were provided by GE.⁹⁵

The Final Permit contains neither an operational limit on the number of hours for normal operation per unit per 12-month rolling period nor a limit on the number of startups and shutdowns allowed per unit per 12-month rolling period. As noted by SRP, the air pollution control systems, including SCR and oxidation catalyst, do not operate during startup and shutdown. In addition, SRP noted that, while water injection could be used to control NO_x during startup, it has to be balanced because it can increase CO emissions during startup.

Because emissions of pollutants such as NO_x , CO, and VOCs are so much higher during startup/shutdown than during normal operations, emissions during these periods contribute significantly to the ability of the facility to comply with the tons per 12-month FEP limits. For example, assuming 950 startup/shutdown events per unit per year would increase emissions from the new combustion turbines alone beyond the major source thresholds for PM_{10}^{96} and CO.⁹⁷

Conclusion

EPA must object to the Final Permit because PCAQCD failed to impose operational limits on the number of startups and shutdowns as well as hours of normal operation allowed per 12-month period to ensure the validity of the specified ton per 12-month FEP emission limits for the Expansion Project. As previously stated, PCAQCD Regulation § 3-1-084 requires both an emission limit and an operational or production limit to create an FEP limit. Failure to

(730 events/year)] /(2000 lbs/ton) = **266.2 tons CO/year.**

⁹⁵*Id.* at 4-4, 4-5 (internal citations omitted).

 $^{^{96}}$ Total annual PM20 emissions from 12 combustion turbines = [normal

operation: $(4.19 \text{ lb/hour PM}_{10}) \times (1,800 \text{ hours/year})] + [startup/shutdown:$

 $^{(5.1 \}text{ lb/event}) \times (730 \text{ events/year})] / (2000 \text{ lbs/ton}) = 74.3 \text{ tons } PM_{10}/\text{year}.$

⁹⁷ Total annual CO emissions from 12 combustion turbines = [normal operation:

 $^{(7.6 \}text{ lb/hour CO}) \times (1,800 \text{ hours/year})] + [\text{startup/shutdown: } (2.7 \text{ lb/event}) \times (1,800 \text{ hours/year})]$

impose the operational limits requested makes the FEPs unenforceable and unenforceable as a practical matter.

Petition Claim 4: The Federally Enforceable Provisions are Not Enforceable Because of the Failure to Impose Short-Term Emission Limits.

Sierra Club's comment letter stated that the Federally Enforceable Provision emission limits in the Final Permit were not enforceable, or not enforceable as a practical matter, because Pinal County failed to impose shortterm emission limits (in pounds per hour per pollutant) to ensure compliance with the relevant short-term NAAQS.⁹⁸

Rationale provided by Pinal County as to Why it Did Not Impose Short Term Emission Limits

In its Responsiveness Summary, PCAQCD states:

This comment requested short-term emission limits in units of lbs. per hour. Short-term emission limits are provided by the applicable New Source Performance Standards (NSPS). NSPS Subparts KKKK covers NO_x and SO₂ emissions, and Subpart TTTT covers CO2 emissions at the combustion turbines.⁹⁹

Relevant Conditions in the Final Permit

There are no relevant conditions in the Final Permit because PCAQCD did not impose short-term emission limits. For the reasons stated below, NSPS Subparts KKKK and TTTT do not establish enforceable short-term emission rates to ensure compliance with the relevant NAAQS as requested by Sierra Club.

Detailed Demonstration of Permit Deficiency

PCAQCD's response to Sierra Club's comment is neither adequate nor responsive because the cited NSPS Subparts a) do not address all emission sources that were modeled for determining compliance with short-term NAAQS; b) do not address all pollutants that were modeled for determining

⁹⁸ Exhibit 3 (Sierra Club Comment Letter) at 27.

⁹⁹ Exhibit 9 (PCAQCD Responsiveness Summary) at 12.

compliance with short-term NAAQS; c) do not correlate with modeled emissions at various load scenarios; d) are not established on an hourly basis as modeled; and, e) are considerably higher than modeled emission rates.

a. <u>Pinal County's Response Does Not Address all Sources.</u>

NSPS Subpart KKKK contains standards of performance for stationary combustion turbines and Subpart TTTT contains standards of performance for electric generating units. Neither NSPS Subpart addresses emissions from the Project's wet surface air coolers ("WSACs"). Thus, compliance with NSPS Subparts KKKK and TTTT do not ensure compliance with the modeled hourly PM₁₀ emission rates from the WSACs.

b. <u>Pinal County's Response Does Not Address All Modeled</u> <u>Pollutants.</u>

NSPS Subpart KKKK contains emission limits for NO_x and SO₂ and Subpart TTTT contains emission limits for CO₂. Subpart TTTT is irrelevant to Sierra Club's comment because there is no established NAAQS for CO₂. Moreover, the Final Permit provisions for the combustion turbines do not include any monitoring or reporting requirements to ensure compliance with Subpart TTTT. Further, neither NSPS Subpart KKKK nor TTTT contains emission limits for NO₂, CO, PM_{2.5}, or PM₁₀ for which compliance with the respective short-term NAAQS were modeled. Thus, compliance with NSPS Subparts KKKK or TTTT does not ensure compliance with the modeled hourly NO₂, CO, PM_{2.5}, or PM₁₀ emission rates and can therefore not ensure compliance with the 1-hour NO₂ NAAQS, 1-hour and 8-hour CO NAAQS, the 24-hour PM_{2.5} NAAQS, or the 24-hour PM₁₀ NAAQS. As such, the FEPs are not enforceable, or not enforceable as a practical matter, to ensure compliance with modeled short-term NAAQS.

c. <u>The cited Subparts do not correlate with modeled emissions at</u> various load scenarios.

Citing to NSPS Subpart KKKK §60.4320, Table 1, §60.4350(g), §60.4350(h), and §60.4380(b)(1), the Final Permit contains two emission limits for NO_x exhaust concentrations for the project's combustion turbines, depending on operating load:

• <u>Operating at greater than or equal to 75% of peak load</u>: 2.5 ppm NO_x at 15 percent oxygen or 150 ng/J (1.2 lb/MWh) of useful output on a four (4) hour rolling average basis.

• <u>Operating at less than 75% of peak load</u>: 96 ppm NO_x at 15 percent oxygen or 4.7 lb/MWh of 590 ng/J (4.7 lb/MWh) of useful output on a four (4) hour rolling average basis.¹⁰⁰

In contrast, the Revised Application, Appendix B, Table 3, assumes a NO_x concentration of 2.5 ppm at 15 percent oxygen for loads between 50 and 100 percent.¹⁰¹ Thus, compliance with NSPS Subpart K cannot ensure compliance with the modeled hourly NO₂ emission rates between 50% and 75% of peak load and can therefore not ensure compliance with the 1-hour NO₂ NAAQS. (Also, NSPS Subpart KKKK §60.4350(h) is not applicable to simple cycle units but rather to combined cycle and combined heat and power units, so the Final Permit's citation to that subsection is inapplicable.)

d. <u>The NSPS Subparts are not established on an hourly basis as</u> <u>modeled.</u>

NO_x emission limits for compliance with NSPS Subpart KKKK are not established on an hourly basis (in lb/hour), as modeled, but rather on a concentration basis (in parts per million) corrected to 15% oxygen or on a gross output basis (in lb/MWh) and compliance is determined based on a four-hour rolling average. Thus, even assuming NO₂ emission limits are equivalent to NO_x emission limits (for which there is no specification in the regulation) compliance with NSPS Subpart KKKK does not ensure compliance with the modeled hourly NO₂ emission rates without establishing a procedure to determine the latter and can therefore not ensure compliance with the 1-hour NO₂ NAAQS.

Likewise, SO₂ emission rates for compliance with NSPS Subpart KKKK are not established on an hourly basis (in lb/hour) as modeled but rather on a gross output basis (in lb/MWh) or on a total heat input basis (in lb SO₂/MMBtu) (Final Permit Condition 5.G.3). Thus, compliance with NSPS Subpart KKKK does not ensure compliance with the modeled hourly SO₂ emission rates without establishing a procedure to determine the latter.

¹⁰⁰ Exhibit 1 (Final Permit) at 10.

¹⁰¹ Exhibit 8 (2023 Revised Permit Application), Appendix B at 3, Table 3.

e. <u>The NAAQS are considerably higher than modeled emission rates.</u>

NSPS Subpart KKKK establishes the following maximum NO_x emission limit for new turbines firing natural gas (heat input greater than 50 MMBtu/hour and less than or equal to 850 MMBtu/hour): 25 ppm at 15 percent oxygen or 1.2 lb/MWh on a four-hour rolling average basis at peak load.¹⁰²

In contrast, the Project's GE LM6000PC simple-cycle combustion turbines (490 MMBtu/hour) were assumed to operate at a NO_x concentration of 2.5 ppm at 15 percent oxygen at peak load,¹⁰³ i.e., ten times lower than required for compliance with Subpart KKKK.

Based on the gross output power for the Project's GE LM6000PC simple-cycle combustion turbines at site elevation of 49.5 MW,¹⁰⁴ maximum NO_x emissions for compliance with Subpart KKKK can be calculated at 59.4 lb/hour, i.e., almost four times higher than NO_x emission rate of 16.5 lb/hour assumed by the 2021 modeling.

Conclusion

In sum, compliance with Subpart KKKK does not ensure compliance with the assumed emission rates and the conclusions of compliance with shortterm NAAQS. Subpart TTTT is not relevant to Sierra Club's comment. As such, the provisions of the Final Permit are not enforceable, nor enforceable as a practical matter, to ensure compliance with short-term NAAQS.

Petition Claim 5:

The Combined PM₁₀ Emission Limits for the WSACs and combustion Turbines Specified are Not Enforceable or Not Enforceable as a Practical Matter.

Sierra Club's comment letter stated that the PM_{10} emission limits from the combined WSACs and combustion turbines were not enforceable, or not enforceable as a practical matter, because there was not sufficient monitoring and recordkeeping of the total dissolved solids ("TDS") in the WSAC recirculating water.¹⁰⁵ Sierra Club requested that TDS monitoring be conducted

¹⁰² See 40 C.F.R. part 60, NSPS Subpart KKKK, Table 1.

 ¹⁰³ See Exhibit 8 (2023 Revised Permit Application), Appendix B at 3, Table 3.
 ¹⁰⁴ See id. at 1-1.

¹⁰⁵ Exhibit 3 (Sierra Club Comment Letter) at 30-31.

daily or monthly, not quarterly as stated in the draft permit. Sierra Club also requested that assumptions be adopted as enforceable conditions, including the maximum circulating water flow rate per WSAC of 10,600 gallons per minute; the TDS in circulating water of 5,000 parts per million; the design drift loss rate for the drift eliminators of 0.0005%; the particle size multipliers for PM₁₀ and PM_{2.5} (0.2 and 0.001 respectively); and the maximum annual hours of operation for each WSAC (1,800 hours/year).¹⁰⁶ Sierra Club also requested that the Final Permit state the method for determining TDS and/or require that any subsequently submitted plan be subject to public notice and comment.¹⁰⁷

Rationale provided by Pinal County regarding the enforceability of the PM10 emissions from the combined WSACs and combustion turbines

In its Responsiveness Summary, PCAQCD states:

The TDS concentrations of the recirculated water in the WSAC equipment is needed for the compliance emission calculations for PM-10 and PM-2.5 emissions. The draft permit stipulates that the TDS be collected pursuant to a plan approved by PCAQCD (Condition 6.C.7.n.ii). The permit already requires that equipment be operated and maintained in good working order (See Condition 9.B.2) which should cover the operation and maintenance of the drift eliminators. The draft permit has been amended to reflect that a permit application be submitted to revise the permit to reflect the conductivity/TDS monitoring methods that end up being approved by PCAQCD. If the source chooses to measure conductivity, a valid methodology to convert the conductivity measurement to TDS will be required as part of the plan.¹⁰⁸

¹⁰⁶ *Id.* at 31.

¹⁰⁷ Sierra Club also commented that any subsequent alternative performance test method submitted by the operator pursuant to Draft Permit Condition 6.B must be subject to public notice and comment. Exhibit 3 at 27. The Final Permit fails to specifically state that any such subsequent performance test method proposed by the operator will be subject to public notice and comment. Because of this deficiency, EPA must object to the Final Permit. *See* EPA Order Granting in Part and Denying in Part Title V Petition, Agua Fria Station, Petition No. IX-2022-04 (July 28, 2022).

¹⁰⁸ Exhibit 9 (PCAQCD Responsiveness Summary) at 12-13.

Relevant Conditions in the Final Permit

There are no relevant conditions in the Final Permit because PCAQCD did not specify the methods to determine TDS in the re-circulated water, did not adopt any of the assumptions requested by Sierra Club for determining TDS and PM_{10} emissions from the combined WSACs and combustion turbines, and did not specify that any subsequently submitted plan for determining TDS in the re-circulating water and PM_{10} emissions from the WSACs will be subject to public notice and comment.

Detailed Demonstration of Permit Deficiency

For the following reasons, Pinal County's Final Permit is deficient.

a. <u>Lack of public comment.</u>

First, the Final Permit does not specify that any subsequently submitted plan for determining TDS and PM emissions from the combined WSACs and combustion turbines will be subject to public notice and comment. Specifically, Permit Condition 6.E.7.n.ii requires: "If any change to the test methods and procedures specified in this permit condition are approved, the Permittee shall submit an application to revise the permit to reflect the approved alternate test methods."¹⁰⁹ This response improperly fails to require public notice and comment for the permit revision.¹¹⁰

b. <u>Need for more frequent TDS monitoring.</u>

The Final Permit calls for measurements of conductivity or TDS for WSAC recirculation water to be taken once per quarter.¹¹¹ The TDS content in the re-circulating water can be highly variable depending on the cycles of concentration. Thus, one measurement per quarter is not frequent enough. Generally, permits for similar sources typically require daily or at least monthly measurements, sometimes as a combination of TDS and conductivity measurements.¹¹² The Final Permit does not require sufficiently frequent monitoring, and EPA must object on that ground.

¹⁰⁹ Exhibit 1 (Final Permit) at 20.

¹¹⁰ See EPA Order Granting in Part and Denying in Part Title V Petition, Agua Fria Station, Petition No. IX-2022-04 July 28, 2022.

¹¹¹ Exhibit 1 (Final Permit) at 27, Permit Condition 6.E.7.n.ii.

¹¹² See, e.g., Revised Kyrene Permit No. P0007598 at 33, Condition 20.d.i (Jan.

^{11, 2022),} excerpt attached as Exhibit 21 hereto ("The Permittee shall daily

c. <u>Need for enforceable assumption conditions.</u>

The Final Permit also ignores Sierra Club's request to incorporate certain assumptions in the Applicant's emission calculations for PM_{10} emissions from the WSACs into enforceable permit conditions, including the maximum circulating water flow rate "Q" per WSAC of 10,600 gallons per minute ("gpm"); the maximum TDS in circulating water "CTDS" of 5,000 parts per million ("ppm"); and the design drift loss rate "DL" for the drift eliminators of 0.0005 percent; the particle size multipliers "k" for PM_{10} and $PM_{2.5}$ (0.3 and 0.001, respectively); and the maximum annual hours of operation "t" for each WSAC (1,800 hours/year). Absent specification of these parameters in the permit, the combined emission limits for the WSACs and combustion turbines specified in Condition 5.D are not enforceable, or not enforceable as a practical matter, because the equation in Condition 6.E.7.n. can not be accurately calculated.

d. <u>Reliance on Condition 9.B.2. is not adequate.</u>

Pinal County's responds that requiring "that equipment be operated and maintained in good working order (See Condition 9.B.2)... should cover the operation and maintenance of the drift eliminators."¹¹³ This response is inadequate. Because drift eliminators degrade with age and composition of the circulating water, the Final Permit must require periodic inspection of the WSAC units, preferably by an inspector with recognized expertise in this field, to ensure that every unit has a complete set of panels of drift eliminators and require replacement of those that are damaged to ensure the continued operation of the drift eliminators at the specified design rate.¹¹⁴ Degradation of drift eliminators can have significant impacts on particulate matter emissions. For example, if drift eliminators would degrade to an overall effective drift loss rate of 0.005%, emissions would be higher by a factor of 10, i.e., instead of 0.21 tons/year PM₁₀ emissions as calculated by the 2023 Revised Application, PM₁₀

monitor and record the conductivity of the Unit K-7 Cooling Tower water and shall monthly monitor and record the Total Dissolved Solids (TDS) content of the Unit K-7 Cooling Tower water. The conductivity readings of the cooling water do not need to be taken on a particular day if the cooling tower fans have not been in operation during that day.").

¹¹³ Exhibit 9 (PCAQCD Responsiveness Summary) at 13.

¹¹⁴ See Exhibit 3 (Sierra Club Comment Letter) at 31.

replacement of drift eliminators, at least annually, is typically incorporated into permits.

Conclusion

For the reasons stated above, EPA must object to the Final Permit because the combined PM_{10} Emission Limits for the WSACs and combustion turbines are not enforceable or not enforceable as a practical matter.

Petition Claim 6: Pinal County Failed to Require Modeling of Secondary Impacts Due to Emissions of the PM_{2.5} Precursors NO_x and SO₂.

Sierra Club's comment letter stated that Pinal County must require SRP to model secondary impacts due to emissions of the $PM_{2.5}$ precursors NO_x and SO_2 .¹¹⁵

Rationale provided by Pinal County as to Why it Did Not Require Modeling of Secondary Impacts Due to Emissions of the PM_{2.5} Precursors

In its Responsiveness Summary, PCAQCD states that "[t]he NO2 and PM-2.5 background concentrations used in the 2021 Coolidge modeling study were the same as the background concentrations used by PCAQCD in current modeling studies. The background concentrations are based on the most recent monitoring data available."¹¹⁶

Relevant Conditions in the Final Permit

There are no relevant conditions in the Final Permit because PCAQCD did not require SRP to model secondary impacts due to emissions of the $PM_{2.5}$ precursors NO_x and SO₂.

Detailed Demonstration of Permit Deficiency

Pinal County's response is entirely non-responsive and incorrect. SRP modeled primary impacts due to direct $PM_{2.5}$ emissions from the facility but declined to model secondary impacts due to emissions of the $PM_{2.5}$ precursors NO_x and SO_2 . The Applicant reasoned as follows:

¹¹⁵ Exhibit 3 (Sierra Club Comment Letter) at 41-42.

¹¹⁶ Exhibit 9 (PCAQCD Responsiveness Summary) at 14.

On February 10, 2020, the EPA issued draft guidance for assessing ozone and fine particulate matter modeling. The guidance addresses both primary and secondary PM2.5 impacts. Primary $PM_{2.5}$ impacts refer to the impacts due to direct emissions of $PM_{2.5}$. Secondary impacts refer to the PM2.5 impacts attributable to nitrates and sulfates formed due to precursor NO₂ and SO₂ emissions. The EPA outlines four cases for assessing the primary and secondary PM2.5 impacts. The appropriate case to use depends on the magnitude of direct PM2.5 and precursor NO₂ and SO₂ emissions. Case 1 is applicable if the emissions increase of both direct PM2.5 and secondary NO2 and SO2 emissions are below the PSD significant emission rates (SER). Case 2 is applicable if the direct PM2.5 emissions increase is greater than the SER and the NOx and/or SO_2 emissions increase is less than the respective SER. Case 3 is applicable if both the direct PM2.5 and NOx and/or SO₂ emissions are greater than the SER. Case 4 is applicable to direct PM2.5 emissions of less than the SER and NOx and/or SO₂ emissions in excess of the SER. While Case 2 is technically not applicable to the Coolidge Expansion Project because the PM2.5 emissions increase is less than the SER, SRP modeled the direct PM2.5 emissions and compared the results to the significant impact levels. Secondary PM2.5 impacts were not assessed since precursor NO_2 and SO_2 emissions are less than the SER.¹¹⁷

The applicant's reasoning is erroneous for two reasons. First, the restricted potential to emit for direct $PM_{2.5}$ emissions from the 12 additional combustion turbines alone, 67.6 tons/year, exceeds the applicable SER for $PM_{2.5}$ of 10 tons/year by a factor of almost seven, and second, the restricted potential to emit for the $PM_{2.5}$ precursor NO_x , 127.2 tons/year for the 12 additional combustion turbines alone, exceeds the applicable SER for NO_x of 40 tons/year by a factor of more than three. Total restricted potential to emit from the existing facility plus the Expansion Project are 139.8 tons/year $PM_{2.5}$ and 494.5 tons/year NO_x . Thus, the Applicant should have identified Case 3—both the direct $PM_{2.5}$ and NO_x and/or SO_2 emissions are greater than the SER—as applicable and, consequently, should have included NO_x emissions as precursors to $PM_{2.5}$ formation in its modeling analysis.

¹¹⁷ Exhibit 7 (SRP's 2021 Modeling Report) at 5-3, 5-5 (internal citations omitted, emphasis added).

Further, EPA issued the final Guidance for Ozone and Fine Particulate Matter Permit Modeling on July 29, 2022.¹¹⁸ This final guidance provides only two cases for assessing primary and secondary $PM_{2.5}$ impacts, as shown in the excerpted table¹¹⁹ below:

/A N/A
ndix W red or roved native on model HI.2. • Tier 1 Approach (e.g., MERPs) • Tier 2 Approach (e.g., Chemical Transport Modeling)

As shown, the Final Modeling Guidance condenses Cases 2 through 4 from the draft guidance into Case 2: Primary and Secondary Air Quality Impacts. This does not change the conclusion that the facility's restricted potentials to emit for direct $PM_{2.5}$ emissions and NO_x emissions exceed the applicable SERs, requiring inclusion of $PM_{2.5}$ precursor emissions in the modeling analysis.

In sum, SRP's modeling for determining whether the emissions from the facility will interfere with attainment or maintenance of the $PM_{2.5}$ NAAQS is

¹¹⁸ Richard Wayland, Director Air Quality Assessment Division, and Scott Mathias, Director Air Quality Policy Division, EPA, Memorandum to Regional Air Division Directors, Regions 1-10, Re: Guidance for Ozone and Fine Particulate Matter Permit Modeling (July 29, 2022), *available at* <u>https://www.epa.gov/scram/guidance-ozone-and-fine-particulate-matter-permit-modeling</u>, excerpt attached as Exhibit 22 hereto [hereinafter "Final Modeling Guidance"].

¹¹⁹ Final Modeling Guidance at 25, Table III-2: EPA Recommended Approaches for Assessing Primary and Secondary PM_{2.5} Impacts by Assessment Case. significantly flawed and its conclusions are not supported. PCAQCD must require SRP to revise its ambient air quality modeling to account for secondary impacts from $PM_{2.5}$ precursor emissions at the facility using the two-tiered demonstration approach outlined in EPA's 2017 Guidelines.¹²⁰

Further, as discussed above, the 2021 Coolidge modeling study relies on monitoring data from 2017-2019 (for PM_{10}) and 2018-2020 (for all other pollutants); these three-year periods are not the most recent monitoring data available, as claimed, and do not correspond to the most recent three-year period preceding the 2023 permit application as required by EPA's Ambient Monitoring Guidelines for New Source Review preconstruction modeling. The applicable three-year period for this permit application is 2020-2022 and that period must be used for the background data for all modeled pollutant concentrations, including NO₂, PM_{2.5}, PM₁₀, and CO.¹²¹

Conclusion

EPA must object to the Final Permit because the County failed to require modeling of secondary impacts due to emissions of the $PM_{2.5}$ precursors NO_x and SO_2 and because SRP did not use data from the most recent three-year period preceding the application date.

OVERALL CONCLUSION

In summary, for the reasons stated above, we request that EPA object to Pinal County's CGS Construction/Title V Operating Permit.

¹²⁰ *Id.* at 25.

¹²¹ Corresponding monitoring data are available on the EPA's website *at* <u>https://www.epa.gov/outdoor-air-quality-data/monitor-values-report.</u>

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<u>s/ John Barth</u>

Attorney at Law P.O. Box 409 Hygiene, CO 80533 (303) 774-8868 <u>barthlawoffice@gmail.com</u> *Counsel for Sierra Club*

s/ Patrick Woolsey

Sierra Club Environmental Law Program 2101 Webster St., Suite 1300 Oakland, CA 94612 patrick.woolsey@sierraclub.org

Matthew Gerhart

Sierra Club Environmental Law Program 1536 Wynkoop St., Suite 200 Denver, CO 80202 matt.gerhart@sierraclub.org

EXHIBITS TO PETITION

- 1. Coolidge Generating Station Final Permit No. V20676.R02 (Mar. 26, 2024)
- Coolidge Generating Station Draft Permit No. V20676.R02 (Oct. 2, 2023)
- 3. Sierra Club Comments on Draft Permit No. V20676.R02 for Expansion Project at SRP's Coolidge Generating Station (Nov. 15, 2023)
- PCAQCD Final Technical Support Document for Permit No. V20676.R02 (Mar. 26, 2024)
- Coolidge Generating Station Previous Permit No. V20676.A01 (Oct. 1, 2019)
- PCAQCD Technical Support Document for Previous Permit No. V20676.A01 (Oct. 15, 2019)
- 7. SRP 2021 Air Dispersion Modeling for the Proposed Expansion of the Coolidge Generating Station (Sept. 2021)
- 8. SRP 2023 Revised Permit Application for Coolidge Expansion Project (Aug. 2023)
- 9. PCAQCD Summary and Response to Public Comments (Mar. 26, 2024)
- 10. Algoe-Eakin, EPA Region VII, Letter to Iowa DNR (Sept. 1, 2021)
- 11. EPA Region 9 Comments on Refuse, Inc. Lockwood Regional Landfill (LRL)—Class I (Title V) Significant Revision (Mar. 29, 2011)
- 12. EPA Region 2 Letter to PSE&G Fossil LLC, Re: Request for PSD Applicability Determinations for Burlington 12 and Kearny 12 Generating Stations (Feb 11, 2009)
- Massey, ADEQ, Letter to Blumenfield, EPA Region IX, Re: 2012 New Source Review State Implementation Plan (Oct. 29, 2012), Attachment State Implementation Plan Revision (Oct. 2012) (Excerpt)
- 14. Neeley, EPA Region 4 Response to Questions from van der Vaart, North Carolina DNR (Aug. 8, 2001)
- 15. Arizona Power Plant and Transmission Line Siting Committee Proceeding for Coolidge Expansion Project, Feb. 8 Hearing Transcript, Vol. 11, No. L-00000B-21-0393-00197 (Ariz. Corp. Comm'n Feb 22, 2022) (Excerpt)
- 16. EPA Ambient Monitoring Guidelines for Prevention of Significant Deterioration (May 1987) (Excerpt)
- 17. Michael Sundblom, Pinal County, Email to Kristin Watt, SRP, Re: Coolidge Modeling Protocol (Sept. 3, 2021, 11:13 am)
- 18. David Keen, RTP Environmental Associates, Email to Kristin Watt, SRP, Re: Coolidge Modeling Protocol (Aug. 27, 2021, 4:02 pm)

- 19. SRP Air Dispersion Modeling Protocol for the Proposed Expansion of the Coolidge Generating Station (Aug. 2021)
- 20. Stein, EPA Memorandum re: Guidance and Enforceability Requirements for Limiting Potential to Emit through SIP and §112 Rules and General Permits (Jan. 25, 1995)
- 21. Revised Kyrene Permit No. P0007598 (Jan. 11, 2022) (Excerpt)
- 22. Wayland and Mathias, EPA Memorandum, Re: Guidance for Ozone and Fine Particulate Matter Permit Modeling (July 29, 2022) (Excerpt)
- 23. Technical Support Document for Permit No. V20635.A01 (Mar. 31, 2010)
- cc: By email: airquality@pinal.gov
 Pinal County Air Quality Control District
 31 N. Pinal Street, Building F
 Florence, AZ 85132

By email: corporatesecretary@srpnet.com Corporate Secretary Salt River Project Agricultural Improvement and Power District 1500 N. Mill Avenue Tempe, AZ 85281