

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

IN THE MATTER OF:)
) PETITION FOR OBJECTION
The Clean Air Act Title V)
Renewal Operating Permit) PERMIT NO. P0007595
For the Aqua Fria)
Generating Station)
Maricopa County, Arizona)

**PETITION FOR OBJECTION TO THE TITLE V
RENEWAL/REVISION PERMIT FOR SALT RIVER PROJECT'S
AQUA FRIA GENERATING STATION PROPOSED FOR ISSUANCE
ON SEPTEMBER 15, 2021 AND FINALIZED ON DECEMBER 9, 2021**

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 Title V Renewal/Revision Operating Permit proposed for issuance by the Maricopa County for Salt River Project’s (“SRP”) Aqua Fria Generating Station (“AFGS”) on September 15, 2021 and issued as final on December 9, 2021 (Renewal/Revision Permit P0007595 (“Permit”)).¹ Sierra Club described the deficiencies in the draft Permit in detailed written comments filed with Maricopa County on October 20, 2021.²

The Salt River Project Agricultural Improvement and Power District (“SRP”) has proposed to install two new natural gas-fired simple cycle combustion turbines (Units 7 and 8) at the existing Agua Fria Generation Station which is located in Glendale, Arizona in Maricopa County. The two new gas-fired simple cycle turbines will have a combined generating capacity of 99 megawatts (“MW”). The existing generating facility at AFGS consists of two steam boilers rated at approximately 113 MW (Units 1 and 2), one steam boiler rated at approximately 181 MW (Unit 3), and three simple cycle

¹ Title V Class I Air Quality Permit No. P0007595, Exhibit 1 hereto.

² Sierra Club comment letter on draft Permit dated October 20, 2021, Exhibit 2 hereto.

combustion turbines (Units 4-6) rated at 87 MW (Unit 4) and 82 MW (Units 5 and 6). The existing facility is a major emitting facility for at least nitrogen oxides (“NOx”) and carbon monoxide (“CO”).³ The AFGS is located in part of Maricopa County that is designated as a serious nonattainment area for PM10, a moderate ozone nonattainment area for the 2008 ozone National Ambient Air Quality Standard (“NAAQS”), and a marginal ozone nonattainment area for the 2015 ozone NAAQS.⁴ The area is designated as attainment or unclassifiable for all other criteria pollutants.

SRP submitted a permit renewal application for the existing units on November 24, 2020 and a significant permit revision application for two new combustion turbines on April 30, 2021. The Maricopa County Air Quality Department (“MCAQD”) has proposed to issue a significant revision to the AFGS Title V permit to install the new simple cycle turbines, as well as a renewal Title V permit on the existing units.⁵

SRP requested enforceable PM 10 and PM 2.5 emission limits for the new units in an attempt to prevent emissions from exceeding the significant emission rates that would trigger NNSR, PSD, and minor New Source Review permitting requirements. The [final] permit contains voluntary emissions limitations for PM 10 and PM 2.5. The Final Permit also imposes annual heat input limits to allow the existing units to be exempt from reasonably available control technology (“RACT”) requirements for nitrogen oxides (“NOx”) and carbon monoxide (“CO”) in MCAQD Reg. 322.⁶

Petition Claim 1:

The Final Permit Fails to Properly Limit Potential to Emit of PM10 and PM2.5 to Enable the New Simple Cycle Turbines to be Exempt from Nonattainment New Source Review and Prevention of Significant Deterioration Permitting Requirements.

Rationale provided by MCAQD as to Why It Exempted the New Simple Cycle Turbines from Nonattainment New Source Review and Prevention of Significant Deterioration Permitting Requirements

³ Technical Support Document (“TSD”), p. 5, Exhibit 3 hereto.

⁴ 40 C.F.R. § 81.303.

⁵ Responsiveness Summary, p. 2, Exhibit 4 hereto.

⁶ Exhibit 1, pp. 15-16, Condition 22 (Final Permit).

MCAQD's Responsiveness Summary provides the following rationale for exempting the two new simple cycle turbines from Nonattainment New Source Review ("NNSR") and Prevention of Significant Deterioration ("PSD"):

"SRP Aqua Fria is a major existing source under both the PSD and NNSR programs. The addition of the two new units is only considered a major modification if the potential emissions from the new units exceed the significant emission rates (SERs) set in 40 CFR §52.21(b)(23) as well as Rule 100 §200.119. SRP has requested enforceable emission limits for the new units that will prevent emissions from exceeding the SERs. The [final] permit contains these voluntary emissions limitations for PM 10 and PM 2.5 and monitoring and record keeping requirements sufficient to readily determine compliance with the emission limitations...the voluntarily accepted limits for both PM 10 and PM 2.5 are both federally enforceable and enforceable as a practical matter as required by applicable permitting regulations, therefore this modification is not subject to PSD or NNSR requirements."⁷

Relevant Conditions in the Final Permit Exempting Exempted the New Simple Cycle Turbines from Nonattainment New Source Review and Prevention of Significant Deterioration Permitting Requirements:

MCAQD alleges that Conditions 22, 26 and 47 are the relevant conditions in the Final Permit that exempt the two new simple cycle turbines from NNSR and PSD permitting requirements.

Detailed Demonstration of Permit Deficiency

MCAQD admits that AFGS is a major stationary source for both PSD and NNSR purposes.⁸ MCAQD's TSD states that SRP requested permit emission limits for the two new simple cycle combustion turbine units "to stay below the applicability thresholds for minor new source review (mNSR) under [Maricopa County] Rule 241."⁹

⁷ Exhibit 4, pp. 2-3.

⁸ Exhibit 4, p. 5.

⁹ Exhibit 3, p. 2 (TSD).

MCAQD Reg. 240 includes the NNSR requirements for modification to existing major sources located in nonattainment areas. MCAQD Reg. 240 § 305 includes requirements to implement the PSD permitting program at new and modified major sources located in attainment or unclassifiable areas, although MCAQD is currently implementing the federal PSD regulations in 40 C.F.R. § 52.21 through a delegation of authority from the U.S. Environmental Protection Agency.¹⁰ The pertinent definitions and legal requirements for applicability to major NSR or PSD permitting are different than the applicability to Maricopa County's mNSR rule.

A review of the Final Permit and the applicability Federal NSR and PSD regulations shows that the two new simple cycle combustion turbines should not be considered exempt from major NSR or PSD. SRP voluntarily requested enforceable limits on the new simple cycle combustion turbines to avoid nonattainment new source review and prevention of significant deterioration review as a major modification, as well as to avoid applicability to minor new source review permitting requirements in Ariz. Admin. Code § R8-2-334(A)(3).¹¹ However, the limitations of the Final Permit are not consistent with County or federal definitions applicable for limiting potential emissions of the new units, and the terms of the Final Permit fail to ensure that the PM10 and PM2.5 are practically enforceable. As a result, the new simple cycle turbines must undergo NNSR for PM10 emissions and PSD for PM2.5 emissions as a major modification for these pollutants.

¹⁰ See 86 Fed. Reg. 10,903, 10,908 (Feb. 23, 2021). In this proposed rulemaking, EPA has proposed to approve Maricopa County's PSD regulations in MCAQD Reg. 240 as part of the Arizona State Implementation Plan ("SIP"). EPA states in this proposed rulemaking that EPA, upon SIP approval of Rule 240, will terminate the existing delegation to Maricopa County to implement the federal PSD regulations and enter a new PSD delegation agreement limited to the issuance of PSD permits that regulate greenhouse gas emissions. To the best of our knowledge, EPA has not yet promulgated final approval of MCAQD Reg. 240 as part of the SIP yet.

¹¹ Exhibit 5 hereto at pp. 4-4, 5-1, and 6-1 (Salt River Project, Title V Significant Permit Revision Application for Title V Permit #V95-010, Salt River Project – Agua Fria Generating Station (Apr. 30, 2021).

a) Legal Background on Limiting Potential to Emit.

To the extent that SRP (and MCAQD) seek to rely on limits on potential to emit of PM10 and PM2.5 to avoid the major NSR or PSD provisions, Federal and County rules make clear that, in order to reduce the potential to emit, limits must be “federally enforceable” and include production or operational limits in addition to emission limits. Specifically, “potential to emit” is defined in both federal NSR and PSD rules, which Maricopa County has incorporated by reference into MCAQD Reg. 240 §§ 202 and 203, as follows:

The maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation of the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation it would have on emissions is federally enforceable....¹²

MCAQD Reg. 201 § 300 “Emissions Caps” also applies to SRP’s proposed request to establish 12-month rolling emission caps on the two new simple cycle combustion turbines. This County rule provides in pertinent part as follows:

A. An applicant, in its application for a new permit, a renewal of an existing permit, a non-minor permit revision (for a Non-Title V source), or a significant permit revision (for a Title V source), may request an emissions cap for a particular pollutant expressed in tons per year as determined on a 12-month rolling average, or any shorter averaging time necessary to enforce any applicable requirement, for any emissions unit, combination of emissions units, or an entire source to allow operating flexibility including emissions trading for the purpose of complying with the emissions cap....

302.1 In order to incorporate an emissions cap in a permit, the applicant must demonstrate to the Control Officer that terms and conditions in the permit will:

¹² 40 C.F.R.52.21(b)(4); 40 C.F.R. 51.166(b)(4); MCAQD Reg. 100 § 200.100.

1. Ensure compliance with all applicable requirements for the pollutant;

2. Contain replicable procedures to ensure that the emissions cap is enforceable as a practical matter and emissions trading conducted under it is quantifiable and enforceable as a practical matter. For the purposes of this rule, “enforceable as a practical matter” shall include the following criteria:

(1) *The permit conditions are permanent and quantifiable;*

(2) *The permit includes a legally enforceable obligation to comply;*

(3) The permit limits impose an objective and quantifiable operational or production limit or require the use of in-place air pollution control equipment;

(4) The permit limits have short-term averaging times consistent with the averaging times of the applicable requirement;

(5) The permit conditions are enforceable and are independent of any other applicable limitations; and,

(6) The permit conditions for monitoring, recordkeeping, and reporting requirements are sufficient to comply with Rule 220, subsections 302.3, 302.4, 302.5, 302.6, and 302.7 of these [Maricopa County] rules.

a. For a Title V permit, include all terms required under Rule 210, subsection 302.1 of these [County] rules and Rule 210, Section 305 of these [County] rules.

To be exempt from PSD or NNSR permitting based on federally enforceable emission limitations, the definition of “potential to emit” requires first that “potential to emit” reflect the maximum capacity to emit a pollutant.

Second, it requires that, to the extent that the applicant or agency claims that maximum capacity to emit is constrained in any way, the constraint must be explicitly set forth in the permit as a physical or operational limit—i.e., a specific limit on fuel, hours of operation, or pollution control equipment operating parameters—that is federally enforceable and practically enforceable.¹³ The Court in *United States v. Louisiana-Pacific Corporation* has interpreted the definition of potential to emit in the federal PSD permitting rules of 40 C.F.R. § 52.21(b)(4), which Maricopa County’s definition mirrors,¹⁴ to require restrictions on operating hours or production levels or types of material combusted, rather than simply imposing limits on tons of pollutants emitted per year. See, *United States v. Louisiana-Pacific Corporation*, 682 F. Supp. 1122, 1133 (D. Colo. 1987) (“blanket” restrictions on actual emissions cannot be considered in determining potential to emit). Of particular relevance here, the Court in *Louisiana-Pacific* held that permit conditions which simply limited carbon monoxide emissions to 78 tpy and volatile organic compound emissions to 101.5 tpy should **not** be considered in determining “potential to emit” because these blanket emission restrictions, unlike limitations on hours of operation, fuel consumption, or production, “would be virtually impossible to verify or enforce.” *Id.*

Courts have emphasized the need to ensure that any constraints assumed on potential to emit are grounded in enforcement reality. *Louisiana-Pacific*, 682 F. Supp. See, *Weiler v. Chatham Forest Products*, 392 F. Supp. 532, 535 (2d Cir. 2004) (“In short, then, a proposed facility that is physically capable of emitting major levels of the relevant pollutants is to be considered a major emitting facility under the Act unless there are legally and practicably enforceable mechanisms in place to make certain that the emissions remain below the relevant levels”). The *Louisiana-Pacific* court described “potential to emit” as “the cornerstone of the entire PSD program,” and observed that allowing illusory and unenforceable limits to curtail potential to emit would create a loophole that could effectively wipe out PSD requirements entirely. *Louisiana-Pacific*, 682 F. Supp. at 1133.

¹³ See 40 C.F.R. § 51.165(a)(1)(iii); 40 C.F.R. § 52.21 (b)(4); MCAQD Reg. 241 §§ 103, 202, 203.

¹⁴ Which Maricopa County is currently operating under pursuant to EPA’s delegation of PSD authority.

Shortly after the *Louisiana-Pacific* decision discussed above, EPA issued policy statements on limiting potential to emit on June 13, 1989.¹⁵ In this final guidance, EPA specified requirements for properly limiting potential to emit, consistent with the *Louisiana-Pacific* decision. EPA made clear that, to be federally enforceable, limitations must be enforceable as a practical matter. EPA stated that proper limits on potential to emit must include a production or operational limitation in addition to an emission limitation “where the emission limitation does not reflect the maximum emissions of the source operating at full design capacity without pollution control equipment.”¹⁶ Restrictions on production or operation would include limitations on the amount of fuel combusted, hours of operation, or conditions which require the source to install and operate air pollution control technology to a specified emission rate or to a specified efficiency level. EPA stated that there are two exceptions to the prohibition on using blanket emission restrictions to limit potential to emit, neither of which apply here for the PM10/PM2.5 emission limits.¹⁷

With respect to operational or emission limitations, EPA requires the compliance period for such limitations be as short as possible and not exceed one month.¹⁸ Specifically, EPA stated “[t]he requirement for a monthly limit prevents the enforcing agency from having to wait for long periods of time to establish a continuing violation before initiating an enforcement action.”¹⁹ EPA stated that a limit spanning a longer timeframe should only be allowed in “rare” cases, such as for sources with “substantial and unpredictable annual variation

¹⁵ Exhibit 6 hereto, 1989 EPA Guidance on Limiting Potential to Emit.

¹⁶ *Id.* at 5-6.

¹⁷ One exception applies when setting operating parameters for control equipment is infeasible. In such cases, a permit that includes “short term emission limits (e.g., lbs per hour) would be sufficient to limit potential to emit, provided that such limits reflect the operation of the control equipment, and the permit includes requirements to install, maintain, and operate a continuous emission monitoring (CEM) system and to retain CEM data, and specifies that CEM data may be used to determine compliance with the emission limit.” *Id.* at 8.

¹⁸ *Id.* at 9; see also Memorandum from Director, Stationary Source Compliance Div. on Time Frames for Determination of Applicability to New Source Review to Bruce Miller, Acting Chief, Air Programs, Region IV (Mar. 13, 1986) (attached as Exhibit 7 hereto).

¹⁹ Exhibit 6, 1989 Guidance on Limiting Potential to Emit at 9.

in production.”²⁰ In such cases, rolling 12-month limits may be acceptable, but “[u]nder no circumstances would a production or operation limit expressed on a calendar year annual basis be considered capable of legally restricting potential to emit.”²¹

MCAQD Reg. 201 is intended to ensure that caps on emissions, intended to provide operational flexibility and avoid otherwise applicable requirements, are consistent with the definition “potential to emit” in the PSD and NNSR permitting programs and to ensure that restrictions on potential to emit are practically enforceable. The County’s incorporation by reference of the federal NNSR and PSD definitions requiring federally enforceable restrictions on production, operating hours, and/or air pollution control equipment is also intended to ensure federal and practical enforceability of emission limits intended to limit potential to emit of an emissions unit or a source to avoid major source permitting. Yet, the proposed emission limits for PM10 and PM2.5 in the Final Permit do not meet these criteria to limit potential to emit of the new simple cycle combustion turbines to below major modification significant levels for PM10 or PM2.5, as will be discussed in the next section.

b) The Final Permit for the AFGS New Simple Cycle Combustion Turbines Does Not Include Limitations on Production or on Operating Hours Which Are Necessary to Limit Potential to Emit PM10 and PM2.5 to Less than Significant Levels.

The Final Permit for the new AFGS simple cycle combustion turbines does not include any limits on the production rate of the new turbines or on the hours of operation of the new turbines. With respect to PM10 and PM2.5, the Final Permit only includes limits on PM10 and PM2.5 emissions from the two new combustion turbines of 4.75 tons per 12-month rolling total sum combined.²² This limit is not consistent with the federal and county definition of “potential to emit” which requires production or operating hour limitations to reduce potential to emit, and it is inconsistent with the *Louisiana-Pacific* court decision finding blanket restrictions on annual emissions inconsistent with the definition of annual emissions and impossible to enforce. *Louisiana-Pacific*, 682 F. Supp. at 1133.

²⁰ *Id.*

²¹ *Id.* at 10.

²² Exhibit 1, Final Permit, p. 12, Condition 20(a).

As discussed above, EPA has taken the position that production or operation limits are necessary to limit the potential to emit. To reiterate, in its June 13, 1989 guidance issued after the *Louisiana-Pacific* decision, EPA stated that proper limits on potential to emit must include a production or operational limitation in addition to an emission limitation “where the emission limitation does not reflect the maximum emissions of the source operating at full design capacity without pollution control equipment.”²³ SRP’s permit application makes clear that the 4.75 ton per year PM10/PM2.5 emission limitation for the two new combustion turbines does not reflect the unlimited potential to emit PM10/PM2.5 of the two new simple cycle turbines which SRP identified as 40.20 tons per year.²⁴ Therefore, to comply with federal regulations and EPA guidance, the Final Permit would need to include a production or operational limit. In a 2002 objection to a Title V permit for the Quebecor World Franklin plant, EPA objected to a Title V permit for imposing a blanket emission limit without operational restrictions like those contemplated here.²⁵

In response, Maricopa County claims that “the emission limits in the permit are not ‘blanket’ restrictions [because]...[b]lanket restrictions are statements that limit emission of a particular pollutant [with no] means of monitoring or enforcing them. In this case, clear methods to monitor and enforce the emission limits are included in the permit.”²⁶ However, the method required by the permit to “monitor” PM10 and PM2.5 emissions is not a clear method to ensure compliance with the blanket restrictions on PM10 and PM2.5 emissions, because it is based on a performance test conducted once every 62 months.²⁷ The performance test will not directly indicate compliance with a 12-month rolling cap on Units 7 and 8 because the performance tests will only measure emissions over a short period of time (the run-time of the performance test) and not continuously monitor emissions. While the permit also has a provision that provides the option of testing annual or every two years,²⁸ such testing is still not frequent enough to ensure the units’ compliance with 12-month rolling caps on emissions.

²³ Exhibit 6, 1989 Guidance on Limiting Potential to Emit, pp. 5-6.

²⁴ See, Exhibit 5, Permit Revision Application at pdf 33 (Appendix B).

²⁵ See, *U.S. EPA Objection to Proposed Title V Permit for Quebecor World Franklin located in Franklin, Kentucky* (Aug. 29, 2002)(attached hereto as Exhibit 8).

²⁶ Exhibit 4, p. 10 (Responsiveness Summary).

²⁷ Exhibit 1, Final Permit, p. 17, Condition 26(c)(i).

²⁸ *Id.*, p. 18, Condition 26(c)(ii).

In addition, the limits in the Final Permit on PM10 and PM2.5 emissions do not comply with the requirement, under MCAQD Reg. 201 § 302.1, that in order to incorporate an emissions cap in a permit, the applicant must demonstrate that terms and conditions will (among other things) “impose an objective and quantifiable operational or production limit or require the use of in-place air pollution control equipment.” This requirement is consistent with EPA guidance and court interpretations of what is required to reduce a potential to emit, as discussed above. Nevertheless, SRP has not proposed any control equipment for PM10 or PM2.5 emissions.²⁹ Thus, to meet MCAQD Reg. 201 § 302.1, the Final Permit must have an operational limit or a production limit in addition to the emissions cap. Yet, the Final Permit omits such a limit.

Maricopa County responds by stating that the permit imposes other “quantifiable operational limits on the sources including the enforceable emission limits for PM 10 and PM 2.5 that are calculated, monitored, and enforced based on actual operating parameters (emission factors, fuel type and usage, and number of start-up shutdown events).”³⁰ As stated herein, the other limits in the permit are not a legal or technical substitute for operational or productions limits.

Further, not only does the Final Permit omit the necessary production or operational limits, but the other pollutant limits on potential to emit imposed in the Final Permit reflect a much higher level of operating hours than reflected by the 4.75 ton per year limit on PM10/PM2.5 emissions from the new turbines. Thus, the County cannot argue that the NOx or CO emission limits, for which compliance is required to be measured by continuous emission monitoring systems (“CEMS”),³¹ would effectively limit hours of operation of the new combustion turbines. Indeed, based on the stated hourly emission rates of the turbines in SRP’s permit application, the PM10 and PM2.5 would effectively be the most restrictive emission limits for the new turbines by a significant amount. This is demonstrated in the Table 3 below, which is from the Conservation Organizations’ October 20, 2021 comment letter.

²⁹ See, Exhibit 5, Permit Revision Application at pp. 3-4 (specifying that the selective catalytic reduction (“SCR”) systems would control NOx emissions and the oxidation catalysts would control CO and VOC emissions).

³⁰ Exhibit 4, p. 12 (Responsiveness Summary).

³¹ Exhibit 1, Final Permit, pp. 30-32, Conditions 46 & 47(a)(iii)(1).

Table 3: Calculation of Average Hours of Operation Per Turbine to Comply with the 12-Month Emission Limits of the Draft Permit³²

Pollutant	Emission Limit in Draft Permit for the Two New Combustion Turbines, tons/12-month period	Normal Operation of One CT, lb/hr	Average Hours of Operation Per Turbine During Normal Operation to Comply with Ton Per Year Emission Limit, hours/year	Average Hours of Operation Per Turbine to Comply with Ton Per Year Limit, Assuming 200 Startup and Shutdown Events Per Year Per Turbine, hours/year ³³
PM10	4.75	4.54	1,046	1,064
PM2.5	4.75	4.54	1,046	1,064
NOx	19	4.0	4,750	4,425
VOC	19	3.94	4,822	4,484
CO	47.5	6.8	6,985	6,640

The average hours of operation at each new turbine that could occur is based on the proposed annual emission limit for the two turbines combined of the Final Permit divided by SRP’s stated hourly emission rate of each turbine (multiplied by two to reflect the hourly emissions from both turbines).³⁴ However, this calculation of average hours of operation that could occur at each turbine based on the ton per 12-month period emission limit does not take into account startup or shutdown emissions, which are higher than normal emissions for most pollutants. Based on SRP’s 200 startup and shutdown events per year listed in its permit application (which we assume was 200 startup and shutdown events per turbine) and, based on SRP’s stated duration of each startup and shutdown (30 minutes and 9 minutes, respectively),³⁵ we calculated a somewhat reduced average hours of operation for most pollutants that the 12-month emission limits of the Final Permit reflect on average at each turbine. Table 3

³² The underlying calculations for this table are provide in Exhibit 9 hereto.

³³ Note that these average hours reflect that startup and shutdown emissions are higher for some pollutants (i.e., NOx and CO) and lower for other pollutants (PM10/PM2.5 and VOCs) compared to the normal operation emission rates of those pollutants. *See*, Exhibit 5, Permit Revision Application at pdf 33 (Appendix B).

³⁴ *See, Id.*

³⁵ *Id.*

above demonstrates why limits on production or on hours of operation, in addition to an emissions limit, must be imposed on the new combustion turbines to effectively limit their potential to emit to less than PSD or NNSR significant levels and to lawfully exempt the new turbines from PSD (for PM2.5 emissions) and from NNSR (for PM10 emissions). Maricopa County never specifically responded to the data in Table 3 and the fact that the NO_x and CO limits do not effectively limit the hours of operation of the new gas turbines. This failure to respond to comments is a separate and independent basis for EPA to object to the Final Permit.³⁶

For all of these reasons, the Final Permit for the AFGS new simple cycle combustion turbines fails to include the necessary and specifically mandated (by MCAQD Reg. 201 § 302.1) limitations on operating hours and/or production, in addition to emission limits, to limit potential to emit PM10 and PM2.5 to less than major modification significant levels.

c) The Final Permit Fails to Ensure that the Proposed PM10 and PM2.5 Emission Limits for the New AFGS Simple Cycle Combustion Turbines Are Practically Enforceable.

For any emission limit to be considered as effectively limiting the potential to emit of the new units to less than major modification significant emission levels, the emission limit must be practically enforceable. EPA states in a 1995 guidance document the following regarding the criteria for 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.³⁷

More specifically, EPA states that potential to emit limitations “must be technically sufficient to provide assurance to EPA and the public that they actually represent a limitation on the potential to emit.”³⁸ The fact that all other

³⁶ 40 C.F.R. § 70.7(h)(6).

³⁷ Exhibit 10 hereto, January 1995 Memo on Potential to Emit Limits at 6.

³⁸ *Id.* at 8.

pollutant emission limits of the Final Permit would allow significantly more hours of operation of the turbines than PM10/PM2.5 limits as demonstrated in Table 3 above does not give assurance to the public that the 4.75 ton per year limits are technically accurate or sufficient. Thus, the 4.75 ton per year limit on PM10/PM2.5 emissions from the new simple cycle combustion turbines does not meet the first criteria for creating practically enforceable limits.

The Final Permit also fails to provide practically enforceable limits because it includes conflicting conditions on how compliance with the emission limits applicable to Units 7 and 8 (the two new simple cycle combustion turbines) will be assessed. Specifically, subsection (s) of Condition 26 (which applies only to Units 7 and 8) states that “[c]ompliance with allowable emission limits and standards shall be determined by the performance tests specified in this permit.”³⁹ For the 12-month rolling total emission limits on tons of PM10/PM2.5 (among other pollutants) of Final Permit Condition 20(a), the performance tests will not directly indicate compliance with a 12-month rolling cap on Units 7 and 8 because the performance tests will only measure emissions over a short period of time (the run-time of the performance test) and not continuously monitor emissions. Despite this provision in Condition 26(a), Condition 47 of the Final Permit explains the recordkeeping that must be done to assess rolling 12-month total emissions of Units 7 and 8, and thus conflicts with Condition 26(a) about how compliance is to be determined. Practical enforceability requires that the source be clearly on notice as to what is expected and how compliance is determined and evaluated by MCAQD.

EPA’s 1995 guidance also states that the test methods and monitoring, recordkeeping, and reporting requirements be specified and that the permit must clarify which methods are used for making a direct determination of compliance with the potential to emit limitations.⁴⁰ The Final Permit does not require continuous emissions monitoring for compliance with the PM10/PM2.5 emission caps, and even if it did, such PM CEMs would not measure condensable PM10/PM2.5 and thus would not accurately account for total PM10/PM2.5 emissions. The Final Permit requires that 12-month total emissions be calculated based on the use of emission factors. Condition 47(a)(ii) of the Final Permit lists PM10/PM2.5 emission factors for non-startup periods that must be used until the initial performance test is conducted and also if annual performance testing is not conducted in accordance with Condition

³⁹ Exhibit 1, Final Permit, p. 20, Condition 26(s).

⁴⁰ Exhibit 10, January 1995 Memo on Potential to Emit Limits, p. 6.

47(A)(ii) and (iii)(2)(a). That PM10/PM2.5 emission factor is 0.011 pounds per MMBtu heat input for non-startup periods, based on information provided by the vendor. SRP's permit application does not include any turbine vendor information to support this assumed emission rate, so the public has no assurances of its accuracy. Pursuant to 40 C.F.R. §70.12(a)(2), this petition raises a claim that "the permit, *permit record*, or permit process is not in compliance with applicable requirements or requirements under this part" (emphasis added). Under 40 C.F.R. §70.13, the administrative record includes, "...all materials available to the permitting authority that are relevant to the permitting decision...." EPA must object to the Final Permit because the permit record does not contain any turbine vendor information to support the assumed emission rate.

The Final Permit further provides that monthly PM10/PM2.5 emissions during normal operation be calculated based on the monthly aggregate fuel flows/heat input for the new combustion turbines and the highest PM10/PM2.5 emission factors established during the most recent annual performance test.⁴¹ This is problematic for several reasons. For example, while the permit specifies the test methods of Part 60, App. A, Ref. Method 5 and Method 202 for condensable PM, the permit also allows the use of an equivalent test method or an alternative method as approved by the Control Officer.⁴² With this director's discretion provision, the permit terms do not ensure that the provisions to assess compliance with the 4.75 ton per year PM10/PM2.5 limit are replicable or verifiable because it allows compliance to be based on a yet to be specified test method. MCAQD Reg. 201 § 302.1(b) requires replicable procedures for creating emission caps. MCAQD Reg. 100 § 200.113 defines "replicable" as "with respect to methods or procedures sufficiently unambiguous such that the same or equivalent results would be obtained by the application of the method or procedure by different users." In this case, the equivalent or alternative test method is not specified in the permit, the procedure for approval of the test method as equivalent is not spelled out in the permit, and the permit does not provide any indication that public or EPA review of any equivalent test method would apply.

Moreover, the Final Permit only requires this performance testing to be done every 62 months.⁴³ While the Final Permit also has a provision that

⁴¹ Exhibit 1, Final Permit, pp. 32-33, Condition 47(a)(iii)(2).

⁴² *Id.*, pp. 18-19, Condition 26(e) and (f).

⁴³ *Id.*, pp. 17-18, Condition 26(c)(i).

provides the option of testing annual or every two years,⁴⁴ such testing is still not frequent enough to ensure the units' compliance with 12-month rolling caps on emissions. Such infrequent testing is wholly inadequate to ensure accurate compliance assessments with the 12-month rolling PM10/PM2.5 cap on emissions from the two new simple cycle turbines that is meant to allow the units to avoid PSD/NNSR permitting. Such infrequent testing is also inconsistent with Maricopa County rules which require "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit..."⁴⁵ For PM10/PM2.5 emissions, there are no other types of monitoring that can be done. The Final Permit states that for PM10/PM2.5 emissions, "[t]he Permittee shall calculate the quantity of emissions monthly during normal operation for PM10/PM2.5 by multiplying the aggregate fuel flows/heat input for Units 7 and 8 by the highest PM10/PM2.5 emission factors established during the most recent annual performance test or if annual performance testing is not conducted the Permittee shall use the normal operation emission factors in Permit Condition 47.a.ii."⁴⁶ This permit provision fails to specifically require that each turbine's PM10 and PM2.5 emission factor be used to multiply by its portion of the aggregate fuel flows/heat input by, given that a PM10/PM2.5 emission factor should be determined for each of the two new simple cycle combustion turbines at the plant. Further, this condition does not address the possibility that stack testing may result in emission factors higher than those listed in Final Permit Condition 47(a)(ii). As stated above, SRP has not provided any manufacturer's emissions guarantee for the assumed PM10/PM2.5 emission factors that are identified as Interim Emission Factors in Final Permit Condition 47(a)(ii). To conservatively ensure compliance with the PM10 and PM2.5 limits, a performance test result with a higher PM10/PM2.5 emission rate than listed in Condition 47(a)(ii) should be required to be used to assess compliance with the emission caps, unless it has been shown to be anomalous by subsequent testing. The lack of clarity in Condition 47(a)(iii)(2) undermines SRP's ability to effectively comply, and more importantly, the County's ability to practically enforce the permit limits because it is confusing as to how SRP should be calculating PM10/PM2.5 emissions. Regardless of the lack of clarity in the permit terms for calculating PM10/PM2.5 emissions, a stack test conducted once every five years is not sufficient to yield reliable data to ensure

⁴⁴ *Id.*, p. 18, Condition 26(c)(ii).

⁴⁵ MCAQD Reg. 210 § 302.1(c)(2).

⁴⁶ Exhibit 1, Final Permit, pp. 32-33, Condition 47(a)(iii)(2)(a).

continuous compliance with the 4.75 ton per year limits on PM10/PM2.5 emissions from the two new simple cycle turbines.

The Final Permit's potential to emit limits also fail because they do not adequately address a key source of emissions: startup and shutdown. For PM10/PM2.5 emissions during startup and shutdown, the permit states that SRP "shall calculate the quantity of emissions monthly for startup and shutdown events for PM10/PM2.5 by multiplying the number of events for Units 7 and 8 by the corresponding PM10/PM2.5 for startup/shutdown emissions in Permit Condition 47.a.ii."⁴⁷ The emission factor listed in the permit per startup and shutdown event combined is 5.1 pounds of PM10/PM2.5.⁴⁸ This is based on emission factors provided by the vendor. Yet, SRP's permit application does not include any turbine vendor information to support this assumed emission rate, so the public has no assurances of its accuracy. Moreover, Final Permit Condition 20(a), which includes the 12-month rolling total emission limits, does not make clear that 12-month rolling total emission limits include emissions due to startup and shutdown emissions. Again, pursuant to 40 C.F.R. §70.12(a)(2), this petition raises a claim that "the permit, *permit record*, or permit process is not in compliance with applicable requirements or requirements under this part" (emphasis added). Under 40 C.F.R. §70.13, the administrative record includes, "...all materials available to the permitting authority that are relevant to the permitting decision...." EPA must object to the Final Permit because the permit record does include any vendor information to support this assumed emission rate.

In addition to these obstacles to determining whether SRP is complying with the permit limits, the Final Permit also fails to establish the consequences for violations. For example, the permit conditions must be clear that, if the limits on potential to emit from the two new simple cycle turbines are exceeded, the violations of the emission limits will constitute violations of the major source permitting requirements.⁴⁹ The Final Permit for the AFGS fails to include any such provision.

MCAQD Reg. 201 § 302.1(b) requires permits with emission caps contain replicable procedures to ensure that the emission cap is enforceable as a practical matter. The terms of the Final Permit do not ensure practical

⁴⁷ *Id.*, pp. 32-33, Condition 47(a)(iii)(2)(b).

⁴⁸ *Id.*, p. 32, Condition 47(a)(ii).

⁴⁹ *See*, Exhibit 10, January 1995 Memo on Potential to Emit Limits at 9.

enforceability of the 4.75 tons per year PM10/PM2.5 emissions cap on the two new simple cycle turbines for the reasons discussed above. Incorporation of limits on hours of operation and/or production that are consistent with the 4.75 ton per year PM10/PM2.5 emission caps, in addition to more frequent performance testing, clearer, more defined recordkeeping and reporting, and a clearer description of how compliance will be determined, would be necessary to ensure that PM10/PM2.5 emissions are sufficiently limited to less than the major modification significance levels of the PSD and NANSR permitting requirements.

Summary: The Final Permit is Deficient Because it Fails to Include Applicable PSD and Nonattainment NSR Provisions Due to the Failure to Properly Create Federally and Practically Enforceable Emission Limits on PM10 and PM2.5.

For the reasons discussed above, the Final Permit does not adequately limit potential to emit PM10 or PM2.5 below major modification significance levels in accordance with County and federal rules. Specifically, the Final Permit fails to include a production or operational limit on potential to emit PM10 and PM2.5 and fails to ensure that its proposed mass emission limits are practically enforceable. Therefore, the County cannot issue a permit for the new simple cycle turbines without addressing the requirements of the major source NNSR rules in MCAQD Reg. 240 § 304 (see also 40 C.F.R. § 51.165) and the federal PSD regulations in 40 C.F.R. § 52.21 which the County is current implementing through a delegation of authority from EPA (see also MCAQD Reg. 241 § 305).⁵⁰

⁵⁰ See, 86 Fed. Reg. at 10,908. In this proposed rulemaking, EPA has proposed to approve Maricopa County's PSD regulations in Rule 240 as part of the Arizona SIP. EPA states in this proposed rulemaking that EPA, upon SIP approval of Rule 240, will terminate the existing delegation to Maricopa County to implement the federal PSD regulations and enter a new PSD delegation agreement limited to the issuance of PSD permits that regulate greenhouse gas emissions. To the best of our knowledge, EPA has not yet promulgated final approval of MCAQD Reg. 240 as part of the SIP yet.

Petition Claim 2:

The Permit Improperly Exempts the Two New Simple Cycle Turbines from Maricopa County’s Minor New Source Review Permitting Requirements.

Rationale provided by MCAQD as to why it Exempted the Two New Simple Cycle Turbines from Maricopa County’s Minor New Source Review Requirements.

MCAQD’s Responsiveness Summary provides the following rationale for its exempting of the two new simple cycle turbines from the minor new source review requirements (“mNSR”):

“The proposed emission limits are enforceable as a practical matter, and for all the reasons noted in the responses to the previous comments, these limits satisfy County Rules. The permit and TSD have been updated to make it clear that Rule 201 applies and that the emissions limits are emission caps....[i]n this case explicit limits on operating hours or production rate are not required to limit operations...[t]he performance test methods and emissions calculations are replicable...[t]he emission limits in the permit are effectively, operational limits, specifically for PM10/PM2.5 and VOC since emissions are based on fuel usage and fuel usage is required to be continuously monitored...Additionally, Permit Condition 20 has been revised to include a requirement to install and operate NOx and CO control equipment consisting of Oxidation catalysts and Selective Catalytic Reduction.”⁵¹

Relevant Conditions in the Final Permit Related to Minor Source Review Requirements

Maricopa County exempted the two new simple cycle turbines from the minor new source review requirements and thus there are no permit conditions in the Final Permit requiring compliance with the requirements.

Detailed Demonstration of Permit Deficiency

In addition to seeking to avoid major modification requirements for PM10/PM2.5, SRP’s permit application requests the limits on potential to emit

⁵¹ Exhibit 4, p. 18 (Responsiveness Summary)

of the two new simple cycle combustion turbines to be under the “Permitting Exemption Thresholds” under MCAQD Reg. 100 § 200.70 for PM10/PM2.5 as well as NO_x, VOCs, and CO.⁵² The permitting exemption thresholds define applicability to Maricopa County’s mNSR permitting requirements in MCAQD Reg. 241. Specifically, MCAQD Reg. 241 applies to any minor NSR modification at an existing source, unless such modification is subject to PSD or NNSR permitting requirements. MCAQD claims that the two new simple cycle combustion turbines to be added to AFGS are exempt from Maricopa County’s mNSR provisions for all pollutants based on the emission limits proposed in the Final Permit on NO_x, VOCs, CO, and PM/PM10/PM2.5. Yet, the emission limits are emission caps on the two new simple cycle combustion turbines (Units 7 and 8) and the terms of the Final Permit do not satisfy the County rule criteria to limit potential to emit in determining whether a minor NSR modification will occur.

In the definition of “minor NSR modification” in MCAQD Reg. 100 § 200.69(e)(1), “potential to emit” is defined as the lower of a “source’s or emission unit’s potential to emit or its allowable emissions.” In MCAQD Reg. 100 § 200.100, “Potential to emit” is defined as:

[T]he maximum capacity of a stationary source to emit pollutants, excluding secondary emissions, under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is legally and practically enforceable by any rule, ordinance, order or permit adopted or issued under A.R.S. Title 49, Chapter 3 or the state implementation plan.

Allowable emissions are defined in MCAQD Reg. 100 § 200.12 as “the emission rate of a stationary source calculated using both the maximum rated capacity of the source, unless the source is subject to federally enforceable limits which restrict the operating rate or hours of operation, and the most stringent of” the applicable standards set forth in 40 CFR Parts 60, 61, or 63; the applicable emission limitations approved into the Arizona SIP, or the

⁵² Exhibit 5, p. 1-1, 4-5 (Permit application)

emission rate specified in any federal rule or federally enforceable permit condition.

The rolling 12-month ton per year emission caps over the two new simple cycle turbines of the Final Permit do not meet the terms of either of these definitions. The emission caps do not reduce the “potential to emit” or “allowable emissions” because there are no limits on operating hours or production rate. In addition, the Final Permit does not require the operation of the NO_x or VOC control equipment at each turbine (i.e., selective catalytic reduction and oxidation catalyst). Although MCAQD did include a new provision in the Final Permit requiring SRP to “provide an operation and maintenance (O&M) plan” for the oxidation catalyst and selective catalytic reduction,⁵³ that permit condition does not require continuous operation of the control equipment. Given that the units will be operated as peaking units as MCAQD made clear in its Responsiveness Summary,⁵⁴ the units will likely startup and shutdown frequently during which selective catalytic reduction and oxidation catalyst would not effectively control emissions.⁵⁵ There is no proposed pollution control equipment for PM₁₀/PM_{2.5}. In addition, EPA has interpreted this same definition of “potential to emit” in the major source permitting rules as requiring practically enforceable emission limitations. There is no continuous monitoring required for PM₁₀/PM_{2.5} or VOCs. As discussed above, the Final Permit has not created practically enforceable limitations on emissions of PM₁₀ or PM_{2.5}. For similar reasons, the Final Permit also fails to create practically enforceable emission limits on VOC emissions.

Beyond these definitional problems, the Final Permit fails to satisfy MCAQD Reg. 201, which also applies to the proposed emissions caps over the two new simple cycle combustion turbines (Units 7 and 8). Neither SRP nor MCAQD has evaluated whether the proposed emission limits comply with these requirements, and a careful review demonstrates that the Draft Permit falls short of meeting them.

⁵³ Exhibit 1, Final Permit, p. 14, Condition 20(h)(i).

⁵⁴ Exhibit 4, p. 10 (Responsiveness Summary).

⁵⁵ This is evident in SRP’s Permit Application, which shows that NO_x and CO emissions over a startup and shutdown (which are stated to last a total of 39 minutes) of 18.2 pounds and 32.3 pounds, respectively, per startup and shutdown are over 4.5 times higher than the normal operation emission factors of 4.00 pounds per hour for NO_x and 6.80 pounds per hour for CO. *See* Exhibit 5, Appendix B (Permit application).

Specifically, the Final Permit does not meet the following requirements of MCAQD Reg. 201 due to many of the same flaws discussed above with respect to major source NSR and PSD:

- The permit lacks “replicable procedures” as required by MCAQD Reg. 201 § 302.1(b). MCAQD Reg. 100 § 200.113 defines “replicable” as “with respect to methods or procedures sufficiently unambiguous such that the same or equivalent results would be obtained by the application of the method or procedures by different users.” The Final Permit would allow equivalent or alternative test methods to be used to measure compliance with the emission limits.⁵⁶ With this director’s discretion provision, the permit terms do not ensure that the provisions to assess compliance with the ton per year emissions limit on PM10/PM2.5, or VOCs are replicable because it allows compliance to be based on a yet to be specified test method. In this case, the alternative test method is not specified in the permit, and the procedure for approval of the test method as equivalent is not spelled out in the permit, and the permit does not provide any indication that public or EPA review of any equivalent test method would apply. In addition, the Final Permit allows the testing to be performed under “representative operating conditions,”⁵⁷ which is not defined. It is not clear what the maximum *practical* production rate is.
- The permit also lacks “an objective and quantifiable operational or production limit,” and it does not specifically “require the use of in-place air pollution control equipment.” Section 302.1(b)(3) of MCAQD Reg. 201 requires that the permit meet one of these requirements. There are no operational or production limits specifically required by the permit. Further, there are no conditions of the permit that definitively require the use of the in-place control equipment such as the SCR system for the control of NOx or the oxidation catalyst for the control of CO or VOCs. MCAQD states in its Responsiveness Summary that the emission limits for PM10/PM2.5 and VOC are “effectively, operational limits” because of the requirement in the permit to continuously monitor fuel usage.⁵⁸ However, MCAQD’s statement implies that emissions of air pollutants

⁵⁶ Exhibit 1, Final Permit, pp. 18-19, Condition 26(g).

⁵⁷ *Id.* at 19, Condition 26(h).

⁵⁸ Exhibit 4, p. 18 (Responsiveness Summary). *See also* Exhibit 1, p. 30, Condition 46(a) (Final Permit).

from burning natural gas are only based on the quantity of gas burned, and that such emissions do not also vary with varying constituents in the natural gas (such as sulfur and PM10/PM2.5) or emissions that vary as a turbine is ramped up or down in capacity (such as NO_x, CO, or VOCs, which can also contribute to condensable PM10/PM2.5). Thus, the ton per rolling 12-month emission limits cannot be considered as “operational” limit simply because fuel usage is required to be monitored. It is imperative for the protection of public health as well as to ensure practical enforceability of the emission limits, that the permit impose limits on operating hours or production and/or definitely require operation of the SCR and oxidation catalyst to meet the level of pollution control assumed in SRP’s permit application.

The permit conditions for monitoring PM10, and PM2.5 as well as VOCs are not sufficient to comply with County Rule 201 because they only require stack testing once every five years.⁵⁹ In addition, the monitoring and recordkeeping requirements are unclear and relevant terms are undefined as discussed above. Those deficiencies undermine the practical enforceability of the emission limits.

For all of these reasons as well as for the reasons provided in this section and in Claim 1, the proposed limits on potential to emit NO_x, CO, VOCs, and PM10/PM2.5 do not meet Maricopa County criteria to properly limit potential to emit, nor do the rules meet the requirements of MCAQD Reg. 201. Therefore, the limits on these pollutants are not sufficient to exempt the units from Maricopa County’s mNSR permitting provisions in MCAQD Reg. 241. The Final Permit is therefore deficient for failing to address those requirements including meeting reasonable available control technology or ensuring compliance with the ambient air quality standards.

⁵⁹ Exhibit 1, Final Permit, pp. 17-18, Condition 26(c).

Petition Claim 3:

The Permit Fails to Ensure that the Modified Agua Fria Generating Station Won't Interfere with Attainment or Maintenance of the Ambient Air Quality Standards.

Rationale provided by MCAQD as to why the Modified Aqua Fria Generating Station will not Interfere with Attainment or Maintenance of the Ambient Air Quality Standards.

MCAQD's Responsiveness Summary provides the following rationale for the modified AFGS will not interfere with attainment or maintenance of ambient air quality standards:

“As discussed in the responses to the previous comments, this is not a major modification that would require an Ambient Air Quality Assessment... The [] permit includes federally and practically enforceable emission limits which prevent emissions from the modifications from exceeding the minor New Source Modification thresholds, therefore Rule 241 is not applicable and the Department has not requested an Ambient Air Quality Assessment to be performed.”⁶⁰

Relevant Conditions in the Final Permit Related to Minor Source Review Requirements

Maricopa County exempted the two new simple cycle turbines from the minor new source review requirements and thus there are no permit conditions in the Final Permit requiring compliance with the requirements.

Detailed Demonstration of Permit Deficiency

Neither SRP nor MCAQD provided any meaningful analysis of the modified AFGS's impacts on attainment or maintenance of the NAAQS. MCAQD's Technical Support Document for the Final Permit for the new simple cycle combustion turbines only states that a NAAQS analysis is not necessary.⁶¹ As discussed above, the Final Permit does not adequately limit potential to emit to ensure that a significant emission increase of PM10 or

⁶⁰ Exhibit 4, p. 20 (Responsiveness Summary).

⁶¹ Exhibit 3, p. 3 (TSD).

PM2.5 will not occur as a result of the new combustion turbines. Accordingly, an air quality analysis is required for issuance of this permit pursuant to MCAQD Reg. 240 § 303.5(b), as well as §§ 304.15, 305.3(b), and 40 C.F.R. § 52.21(k). Note that 40 C.F.R. § 52.21(k)(1) requires that an air impact analysis be done by the permit applicant in order to:

...demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of:

- (i) Any national ambient air quality standard in any air quality control region; or
- (ii) Any applicable maximum allowable increase over the baseline concentration in any area.

The pollutants for which maximum allowable increases (i.e., PSD increments) have been established including PM2.5, PM10, SO2, and NOx. Thus, if the addition of the two new simple cycle turbines at AFGS triggers PSD permitting for PM2.5, a modeling analysis would be required for NOx, PM10, and SO2, in addition to PM2.5.

In addition, as discussed above, the Final Permit does not adequately limit potential to emit to ensure that the County's mNSR rules do not apply. MCAQD Reg. 241 § 303 requires that SRP conduct an ambient air quality assessment be done to demonstrate that the emissions from the minor NSR modification will not interfere with attainment or maintenance of the ambient air quality standards as requested by the Control Officer. The Control Officer "shall make such request, if there is reason to believe that a new source or minor NSR modification could interfere with attainment or maintenance of a national ambient air quality standard," pursuant to MCAQD Reg. 241 § 303. Even if the new units truly maintain annual emissions to less than the minor modification emission thresholds, the fact is that startup and shutdown emissions from simple cycle turbines, which will occur frequently at a peaking plant and during which the pollution controls such as selective catalytic reduction and oxidation catalyst will not work as effectively (if at all), can cause elevated short term average concentrations of NO2 which can threaten compliance with the 1-hour average NO2 NAAQS, among other pollutants. Given that there is an existing major source of NOx emissions from the existing AFGS boilers and simple cycle turbines which, according to MCAQD's TSD,

had actual NO_x emissions of 738 tons per year,⁶² it is imperative that MCAQD require that the AFGS, as proposed to be modified, will not cause or contribute to a violation of any ambient air quality standard.

Even assuming that the permit adequately limits the potential to emit of the new turbines to less than a significant emission increase and less than the minor NSR thresholds, MCAQD is nonetheless required to ensure that the modified facility will not violate any NAAQS. Applicable County rules require assurance that the ambient air quality standards will not be violated in order for a permit to be issued for the modified source. Specifically, under MCAQD Reg. 200 § 401.1, the MCAQD must deny a permit revision:

...if the applicant does not demonstrate that every such source for which a permit or permit revision is sought is so designed, controlled, or equipped with such air pollution control equipment that the source may be expected to operate without emitting or without causing to be emitted air contaminants in violation of these rules or applicable State Implementation Plan (SIP) requirements.

The Maricopa County rules incorporate the NAAQS in 40 C.F.R. Part 50 by reference in Appendix G, Section 1(a), of the Maricopa County Air Pollution Control Regulations. In addition, the Arizona SIP includes ambient air standards that are, for the most part, the same as the NAAQS. Specifically, Arizona has adopted the NAAQS into the Arizona Administrative Code at R18-2-201 to R18-2-205 for all pollutants, except that Arizona has not adopted the annual PM_{2.5} NAAQS that was reduced in 2013 from 15.0 µg/m³ to 12.0 µg/m³.⁶³ Ariz. Admin. Code § R18-2-201(B)(1)(a) identifies the annual PM_{2.5} ambient standard as 15.0 µg/m³. EPA approved these rules as part of the Arizona SIP in 2014. See 40 C.F.R. § 52.120(c). See also 79 Fed. Reg. 56,655 (Sept. 23, 2014). The reduced annual PM_{2.5} NAAQS still must be addressed by MCAQD in issuing the AFGS permit because it was a provision enacted 40 C.F.R. Part 50, which MCAQD has incorporated by reference into Appendix G of its Air Pollution Control Regulations. Thus, MCAQD has a duty pursuant to MCAQD Reg. 200 §401.1 to ensure that the AFGS source is designed, controlled, and operated in a manner that it will not cause air contaminants to be emitted in violation of any ambient air standard in the Arizona SIP or the

⁶² Exhibit 3, TSD, p. 6 tbl.1.

⁶³ See, 78 Fed. Reg. 3,277 (Jan. 15, 2013); 40 C.F.R. § 50.18(a).

NAAQS. Yet, MCAQD has not address this substantive limitation in issuing the Final Permit.

Not only did the Final Permit fail to conduct the requisite NAAQS modeling, SRP's application failed to provide the requisite information for such a review—an omission which MCAQD has not acknowledged. Under MCAQD Reg. 210 § 301.1, SRP was required to provide the information necessary for MCAQD to be able to conduct such an analysis, but such information is missing from SRP's permit application. Specifically, MCAQD Reg. 210 § 301.1 states that “[t]o apply for a permit, applicants shall complete the ‘Standard Permit Application Form’ and supply all information required by the ‘Filing Instructions’ as shown in Appendix B of these rules.” The Filing Instructions in Appendix B of the Maricopa County Rules require significant information that would be necessary for an air modeling analysis, including stack information (identification, description, building dimensions, exit gas temperature, exit gas velocity, height, inside dimensions), a site diagram (including property boundaries, adjacent streets or roads, directional arrow, elevation, closes distance between equipment and property boundary, equipment layout, relative location of emission sources/points, location of emission points and non-point emission areas, and location of air pollution control equipment), and air pollution control information (including, among other things, “evidence that operation of the new or modified pollution control equipment will not violate any ambient air quality standards or maximum allowable increases”). SRP's permit application for the new simple cycle combustion turbines at AFGS does not include any of this information. Thus, SRP's permit application is significantly incomplete. To the extent that MCAQD waived submittal of any of this information, such a waiver would be entirely inconsistent with the mandate of MCAQD Reg. 200 § 401.1, that MCAQD not issue a permit if it does not find that the AFGS is designed, controlled, and operated such that it will not cause a violation of any County rule (which include the NAAQS and PSD increments) or the Arizona SIP.

Notably, assurance of compliance with ambient air standards also applies under MCAQD Reg. 210. Specifically, under MCAQD Reg. 210 § 301.8, a permit may only be issued, revised, or renewed if, among other things, “the conditions of the permit require compliance with all applicable requirements.” MCAQD Reg. 100 § 200.16 defines “applicable requirement” as “any of the following: a. Any federal applicable requirement as defined in Section 200.50 [of the Maricopa County rules]. b. Any other requirement established under the Maricopa County Air Pollution Control Regulations or ARS Title 49, Chapter

3, Articles 1, 3, 7, and 8. As stated above, MCAQD has incorporated by reference the NAAQS in 40 C.F.R. Part 50 into the MCAQD Reg. in Appendix G, Section 1(a).

For these reasons, MCAQD should not have issued a Final Permit for the two new simple cycle turbines without an analysis indicating the modified facility would not cause or contribute to a violation of any ambient air quality standard.

Petition Claim 4:

The Permit Fails to Include a BACT Requirement for Greenhouse Gas Emissions from the Two New Simple Cycle Turbines.

Rationale provided by MCAQD Refusal to Include a BACT Requirement for the Two New Simple Cycle Turbines.

MCAQD's Responsiveness Summary provides the following rationale for its refusal to include a best available control technology ("BACT") requirement for the two new simple cycle turbines:

"Since the source is not subject to PSD for another regulated NSR pollutant as discussed in response to previous comments, the GHG emissions from the proposed project are not subject to PSD review and are therefore exempt from BACT requirements."⁶⁴

Relevant Conditions in the Final Permit Related to Minor Source Review Requirements

There are no greenhouse gas ("GHG") BACT requirements in the Final Permit because Maricopa County found that the two new simple cycle turbines are exempt from BACT requirements.

Detailed Demonstration of Permit Deficiency

As noted above, because the two new simple cycle turbines are subject to major modification requirements, the Final Permit is also deficient for failure to include a best available control technology ("BACT") requirement for GHG emissions pursuant to EPA's currently effective delegation of authority to

⁶⁴ Exhibit 4, p. 16 (Responsiveness Summary).

implement the federal PSD permitting regulations including the federal PSD requirements for GHG permitting.⁶⁵ See 40 C.F.R. § 52.144(a) and the provisions of 40 C.F.R. § 52.21, except paragraph (a)(1), for greenhouse gas emissions. Neither SRP nor MCAQD quantified the potential to emit GHG emissions from the two simple cycle turbines to be installed.

The potential to emit greenhouse gas emissions for the two new simple cycle turbines can be calculated based on the allowable emissions under Table 2 of 40 C.F.R. Part 60, Subpart TTTT. SRP has proposed to keep its annual net electric sales to less than the design efficiency of the turbines multiplied by the net electrical output in order to be subject to the less stringent greenhouse gas emission standard of NSPS Subpart TTTT of 120 lb CO₂/MMBtu.⁶⁶ Based on vendor information available for the GE LM6000 PC turbines proposed to be used at AFGS, we calculated the net annual sales that each new simple cycle combustion turbine would need to be subject to be allowed to comply with the less stringent CO₂ limit of NSPS Subpart TTTT as 179,054 net MW-hours/year per turbine. Based on the net heat rate of each turbine identified by SRP as 8,651 Btu/kW-hr which equates to 8.651 MMBtu/MW-hr,⁶⁷ the potential to emit of the two new simple cycle combustion turbines under these NSPS restrictions would be as follows:

120 lb CO₂/MMBtu x 179,054 net MW-hours/year x 8.651 MMBtu/MW-hr
x (1 ton/2000 lb) = 92,940 tons CO₂/year per turbine or 185,880 tons per
year for both turbines.

These potential emission rates allowed under Subpart TTTT of the NSPS are well over the 75,000 ton per year significant emission threshold of the PSD permitting regulations. Thus, because the new turbines should be considered subject to PSD permitting for PM_{2.5} emissions due to the lack of federally and practically enforceable limits on the potential to emit PM_{2.5}, the new simple cycle turbines should be also subject to BACT for GHG emissions pursuant to 40 C.F.R. § 52.21(b)(49)(iii).

⁶⁵ Exhibit 11 hereto (EPA Delegation Agreement).

⁶⁶ Exhibit 5, Permit Revision Application at 5-6. *See also*, 40 C.F.R. pt 60, subpt. TTTT, tbl. 2, §§ 60.5520, 60.5525.

⁶⁷ Exhibit 5, Permit Revision Application at 3-3.

Petition Claim 5

MACQD Revised the Final Permit to Include HAP Limits That Were Never Subject to Public Review or Comment.

Rationale provided by MCAQD as to Why it Included HAP Limits in the Final Permit Without Subjecting the Limits to Public Review and Comment.

Maricopa County's Responsiveness Summary stated that it "revised the permit to include a Federally and practically enforceable facility wide single HAP emission limit of 9.0 tons/yr and combined HAP limit of 22.5 tpy" but fails to provide a rationale why these HAP limits were never subject to public review or comment.

Relevant Conditions in the Final Permit Related to HAP Limits.

The following conditions in the Final Permit contain HAP limits and monitoring requirements that were never subject to public review or comment: Final Permit, p. 12, condition 18.d. & e.; and p. 36, condition 51.a.vii.

Detailed Demonstration of Permit Deficiency

The public comment version of the draft permit published by Maricopa County is attached hereto as Exhibit 12. The HAP limits in the Final Permit are not contained in the public comment draft permit. The HAP limits first appeared after close of public comment.

The Draft Technical Support Document issued with the Draft Permit stated that the requirements in 40 C.F.R. Part 63, Subpart YYYY do *not* apply to the new combustion turbines because SRP's Agua Fria Generating Station is an area source of HAPs.⁶⁸ In its review of this matter, Sierra Club did not find any support in the permit record for this statement, particularly when the underlying permit record indicated that the existing Agua Fria facility was a major source of HAPs. Specifically, SRP's permit renewal application quantified the potential to emit of one HAP – formaldehyde – as totaling 10.89

⁶⁸ Exhibit 13 hereto, Draft Technical Support Document at 4. See also 40 C.F.R. §63.6085 and Table 1.

tons per year,⁶⁹ which would qualify the Agua Fria facility as a major source of HAPs and *not* an area source due to having the potential to emit a single HAP of 10 tons per year or more. 40 C.F.R. §63.2 (definition of “major source”). SRP’s permit renewal application did not quantify potential to emit of any other HAP. Further, MCAQD’s Draft Technical Support Document for the Draft Permit did not quantify the existing facility’s emissions of any HAPs.⁷⁰

Given that there was no support in the permit record for MCAQD’s claim that the existing Agua Fria facility was an area source of HAPs, Sierra Club speculated in its comments that MCAQD may be relying on the capacity factor limitations it imposed in Condition 22 of the Draft Permit (“Partial Exemption for NOx and CO from Units 1-6”) which states as follows:

The Permittee shall operate electric generating units 1-6 at or below 10 percent calendar year annual capacity factor... in order to qualify for the exemptions of subsection [b] of this Permit Condition....⁷¹

MCAQD’s response to this comment was as follows:

MCAQD revised the permit to include a Federally and practically enforceable facility wide single HAP emission limit of 9.0 tons/yr and combined HAP limit of 22.5 tpy. Associated Monitoring, recordkeeping and reporting requirements are included in permit conditions. This limit prevents HAP emissions from exceeding the major source threshold, therefore SRP Agua Fria is an area source of HAP and is not subject to the requirements of 40 CFR 63 Subpart YYYY.⁷²

Neither the Draft Permit/draft Technical Support Document nor SRP’s permit renewal application provides any support or technical justification for these HAP limits. These new HAP limits could not be considered a logical outgrowth of the original draft permit. At best, one could only assume that

⁶⁹ Exhibit 2, p. 28, Table 4 (Sierra Club Comment Letter). See also Exhibit 5, SRP’s November 24, 2020 Title V Renewal Application, Appendix A.

⁷⁰ Exhibit 13.

⁷¹ Exhibit 2, p. 26 (Sierra Club Comment Letter). See also Exhibit 12, p. 15 (Condition 22).

⁷² Exhibit 4 at 23 (Responsiveness Summary).

MCAQD was relying on the 10% capacity restrictions in Condition 22 of the Draft Permit to limit potential to emit of HAPs from the existing Agua Fria facility. If that were the case, however, then a logical outgrowth emission limit on a single HAP would be 10% of SRP's stated potential to emit formaldehyde from the existing Agua Fria units of 10.89 tons per year – or a limit on a single HAP of 1.09 tons per year (not 9.0 tons per year, as was imposed in the Final Permit). However, MCAQD has made clear in its Responsiveness Summary that it was not considering the 10% capacity restrictions of Condition 22 to limit the existing Agua Fria facility's potential to emit.⁷³ The facts of this permit change are very similar to the facts of EPA's decision to object to a Title V permit in *In re Orange Recycling and Ethanol Production Facility*.⁷⁴ In that order, EPA found that the final permit adopted “a fundamentally different approach to limit the source's [potential to emit (PTE)] than the one found in the draft permit.” For that reason, EPA required a new public review period for the new PTE limits. See, Exhibit 14 at p. 9.

In addition, EPA has previously stated “the unavailability during the public comment period of information needed to determine applicability of or to impose an applicable requirement may also result in a deficiency in the permit's content.” *In re Cash Creek Generation, LLC*, Petition No. IV-2010-4, Order on Petition (June 22, 2012), at 9; see also *In re Louisiana Pacific Corporation*, Petition No. V-2006-3, Order on Petition November 5, 2007); *In re WE Energies Oak Creek Power Plant*, Order on Petition (June 12, 2009); *In re*

⁷³ Sierra Club contended in its comment letter that the 10% capacity limits in Permit Condition 22 would not constitute a permanent limit on potential to emit, because the limits are written as an “either-or” manner (either comply with the 10% capacity limit or meet the emission limitations of Maricopa County Rule 322). Exhibit 2, p. 5 (Sierra Club Comment Letter). MCAQD's responsiveness summary makes clear that it did not intend the 10% capacity restrictions of Condition 22 of the Permit to constitute a limit on the Agua Fria facility's potential to emit of any pollutant. Exhibit 4, p. 5 (Responsiveness Summary) (“Section 8 of the TSD clearly explains how actual and potential emissions were calculated by the MCAQD. MCAQD acknowledges that its calculations include the 10% capacity factor that is consistent with how the units are currently operated. The department also recognizes that the existing facility is a major source under both PSD and NNSR.”)

⁷⁴ Exhibit 14 hereto, *In re Orange Recycling and Ethanol Production Facility, Pencor-Masada Oxynol, LLC*, Petition No. 11-2000-07, Order on Petition, at 9 (May 2, 2001).

Alliant Energy-WPL Edgewater Generating Station, Petition No. V-2009-02, Order on Petition (August 17, 2010).

Sierra Club was denied an opportunity to comment on these HAP limits and could not have submitted meaningful comments during the public comment period. Because these HAP permit limits were never disclosed or discussed in the draft permit or draft TSD and because the underlying permit record provides no support for these limits, they are not a logical outgrowth of those documents or in response to comments. EPA must object to the Agua Fria Title V permit for MCAQD's failure to provide proper public notice and opportunity to comment on the HAP emission limits and associated monitoring and recordkeeping requirements that were intended to limit the PTE HAP from the Agua Fria facility to less than major source levels.

Further, there is no basis in the permit record to support these HAP limits. Because the existing source is a major source of HAPs, the two new turbines should be subject to 40 C.F.R. Subpart YYYY. As such, there simply is no technical basis for the HAP limits in the underlying permit record.

In summary, for the reasons stated herein we request that EPA object to Maricopa County's AFGS Title V permit.

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EXHIBITS TO PETITION

1. Final Permit.
2. Sierra Club comment letter dated 10/20/2021.
3. Final Technical Support Document.
4. Responsiveness Summary.

5. SRP Revision Permit Application.
6. EPA Memo dated 6/13/1989.
7. EPA Memo dated 3/13/1986.
8. Quebecor World EPA Objection.
9. Stamper calculations Table 3.
10. EPA Memo dated January 1985.
11. EPA GHG Delegation Agreement
12. Public Comment version of draft permit.
13. Draft Technical Support Document.
14. *In re Orange Recycling and Ethanol Production Facility*
Objection.

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