

**PERMIT #63088 (Revision to Permit #52639)
PLACE ID #4477**

PERMITTEE: Salt River Project Agricultural Improvement and Power District
FACILITY: Coronado Generating Station
PERMIT TYPE: Significant Revision to Class I Air Quality Permit
DATE ISSUED:
EXPIRY DATE:

SIGNIFICANT PERMIT REVISION DESCRIPTION

This Significant Permit Revision No. 63088 to Operating Permit No. 52639 is issued to the Salt River Project Agricultural Improvement and Power District's (SRP) - Coronado Generating Station (CGS). CGS consists of two coal-fired electric generating units, Unit 1 and Unit 2. This significant permit revision (SPR) authorizes SRP to implement the following Best Available Retrofit Technology (BART) Alternative operating strategies:

The Permittee shall decide, by December 31, 2026, whether to select:

- BART Alternative Operating Strategy-1 (OS-1) install and commence operation of a Selective Catalytic Reduction System (SCR) on Unit 1 by December 31, 2029, or
- BART Alternative Operating Strategy-2 (OS-2) shut down Unit 1 by December 31, 2029.

These two operating strategies are part of the BART Alternative as revised in the Regional Haze Program State Implementation Plan (SIP).

For the period starting on December 5, 2017 and ending no later than December 31, 2029, both of the BART Alternative operating strategies will include a Unit 1 interim operating strategy that will involve four seasonal curtailment options. These options entail varying durations of curtailment of Unit 1 and are dependent on the demonstrated nitrogen oxide (NO_x) emissions rate of Unit 1 and the sulfur dioxide (SO₂) emissions rate of Unit 1 and Unit 2. As part of the SIP revision, SRP has conducted visibility modeling to demonstrate that the BART Alternative represents an improvement in visibility in Class I areas over the BART required by the current Regional Haze FIP and 2016 EPA BART Reconsideration.¹

Attachment "E" is hereby added to Operating Permit No. 52639:

¹ 81 FR 21735, April 13, 2016.

ATTACHMENT “E”: SPECIFIC CONDITIONS

The authority for the conditions in this Attachment is derived from 40 CFR 52.145, unless otherwise specified.

I. GENERAL

- A.** The requirements under this Attachment “E” shall become effective on the date of final action by the U.S. Environmental Protection Agency (EPA), approving Attachment “E” as part of the State Implementation Plan for Arizona, provided that such final EPA action also revokes or rescinds EPA’s Federal Implementation Plan {published in 77 Federal Register 72512 (December 5, 2012), and 81 Federal Register 21735 (April 13, 2016)}, insofar as that Federal Implementation Plan establishes emission limits or other requirements for NO_x, SO₂, and PM₁₀ emissions from Unit 1 of the Coronado Generating Station in 40 CFR § 52.145.
- B.** Where multiple emission limits, standards, or requirements apply to a unit, compliance with the most stringent limit, standard, or requirement shall be deemed compliance with less stringent emission limits, standards, or requirements.

II. COMPLIANCE OPTIONS– BART ALTERNATIVES

A. BART Alternative

[40 CFR 52.145]

The Permittee shall notify the Administrator and Director of the selection of one of the two BART Alternative operating strategies below no later than December 31, 2026:

1. Operating Strategy -1 (OS-1): Seasonal curtailments followed by commencement of operation of SCR on Unit 1 no later than December 31, 2029.
2. Operating Strategy-2 (OS-2): Seasonal curtailments followed by Unit 1 Shutdown no later than December 31, 2029.

The notification shall include the final operating strategy selected and the effective date of the requirements associated with the selected operating strategy.

B. BART Alternative Operating Strategies

[40 CFR 52.145]

1. The Permittee shall comply with the four seasonal curtailment options under the Unit 1 interim BART Alternative operating strategy phase of the BART Alternative requirements listed in Condition II.C beginning no later than December 5, 2017 and continuing until the Permittee has either permanently shut down Unit 1 pursuant to Condition II.B.2.b or has achieved compliance with the NO_x emission limit in Condition III.A.1 by installing SCR system on Unit 1 in accordance with Condition II.B.2.a.
2. The Permittee shall comply with one of the following BART Alternative operating strategies no later than December 31, 2029:

- a. OS-1: Install and operate an SCR system on Unit 1 in accordance with Condition III.
- b. OS 2: Shutdown Unit 1 in accordance with Condition IV.
3. In the event that the construction of the SCR system does not commence within 3 years of issuance of this permit revision, the Permittee shall submit an updated BACT analysis at least 18 months but no more than 24 months prior to the expected start of construction of the SCR system that demonstrates that the emission limits in this attachment still represent BACT for PM₁₀, PM_{2.5}, and H₂SO₄.
[A.A.C. R18-2-402.I.4]

C. Unit 1 Interim BART Alternative Operating Strategy Requirements

[40 CFR 52.145]

1. The Permittee shall not exceed the following NO_x emission rates on a 30-day-boiler-operating day average:
 - a. 0.320 lb/MMBtu for Unit 1.
 - b. 0.080 lb/MMBtu for Unit 2.
2. The Permittee shall not exceed the following SO₂ emission rates on a 30-day boiler operating day average:
 - a. 0.080 lb/MMBtu for Unit 1.
 - b. 0.080 lb/MMBtu for Unit 2.
3. At all times during the operation of Unit 1, the Permittee shall operate the low NO_x burners and overfire air in accordance with manufacturer's specifications and good engineering practices to minimize emissions.
4. At all times during the operation of Unit 2, the Permittee shall operate the low NO_x burners and overfire air, and the SCR system in accordance with manufacturer's specifications and good engineering practices to minimize emissions.
5. For the first compliance year (2017), the Permittee shall shutdown Unit 1 beginning on December 5, 2017 and shall not re-start the unit before January 20, 2018 or January 31, 2018 or April 15, 2018 depending on the selected Interim Operating Strategy (IS) options listed in Table 1.
6. Beginning calendar year 2018 and continuing thereafter until the compliance date for the BART Alternative operating strategies in Condition II.B.2, the Permittee shall select an IS option as outlined in the Table 1 below:

Table 1: Seasonal Curtailment Options under Unit 1 Interim Operating Strategy

Strategies	Unit 1		Unit 2	Unit 1 Curtailment Period
	(lb/MMBtu)(30- boiler-operating-day average)			
	NO _x	SO ₂	SO ₂	
IS 1	0.320	0.080	0.080	Oct. 1 to Apr. 15
IS 2	0.320	0.070	0.070	Oct. 21 to Jan. 31
IS 3	0.320	0.050	0.050	Nov. 21 to Jan. 20
IS 4	0.310	0.060	0.060	Nov. 21 to Jan. 20

- a. To qualify for an IS option, the Permittee must demonstrate that NO_x emissions from Unit 1, and SO₂ emissions from Unit 1 and Unit 2, did not exceed the emission limit specified for the elected IS option in Table 1 during the calendar year.
- b. Beginning no later than October 1, 2018 and by October 1 of each calendar year thereafter, the Permittee shall notify the Administrator and Director of the selected IS option for the calendar year except that in the first compliance year (2017) notification shall be no later than December 5, 2017. This notification shall include the 30-boiler-operating-day average NO_x and SO₂ emissions for each boiler-operating day for each unit during the calendar year up to the date of the notification.
- c. After selecting the IS option, the Permittee shall not allow NO_x emissions from Unit 1 to exceed the emission rate associated with that IS option beginning on October 1 of the calendar year in which the strategy was selected through the start of the Unit 1 curtailment period. In the event the emissions limits are exceeded and the excess emissions provisions of Attachment A shall apply.
- d. After selecting the IS option, the Permittee shall not allow SO₂ emissions from Unit 1 and Unit 2 to exceed the emission rate associated with that IS option beginning on October 1 of the calendar year in which the strategy was selected through the end of the Unit 1 curtailment period. In the event the emissions limits are exceeded the excess emissions provisions of Attachment A shall apply.

D. Permit Shield

[A.A.C R-18-2-325]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 52.145.

III. BART Alternative OS-1 Requirements for Unit 1 SCR Installation

[40 CFR 52.145]

A. Emission Limitations/ Standards

In the event that the Permittee elects BART Alternative operating strategy OS-1 to install a SCR system on Unit 1 pursuant to Condition II.B.2.a, the Permittee shall not exceed the

following emission rates from stack of Unit 1, beginning 180 calendar days after commencing commercial operation of the SCR System or on December 31, 2029, whichever comes first:

1. 0.065 lb/ MMBtu of NO_x on a 30-boiler-operating-day average,
2. 0.080 lb/ MMBtu of SO₂ on a 30-boiler-operating-day average,
3. 0.033 lb/ MMBtu total filterable and condensable particulate matter (as a surrogate for PM₁₀ and PM_{2.5}) as determined by a stack test in accordance with Condition III.C.3, and
[A.A.C. R18-2-406.A.4]
4. 0.005 lb/MMBtu of H₂SO₄ as determined by a stack test in accordance with Condition III.C.4.
[A.A.C. R18-2-406.A.4]

B. Air Pollution Control Requirements

1. At all times during the operation of Unit 1 and until the SCR system is installed on Unit 1, the Permittee shall operate the low NO_x burners and overfire air in a manner consistent with technological limitations, manufacturer's specifications, and good engineering and good air pollution control practices for minimizing emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]
2. The Permittee shall install a Selective Catalytic Reduction (SCR) system on Unit 1 no later than December 31, 2029. At all times during the operation of Unit 1 after the SCR commences operation, the Permittee shall operate the SCR in a manner consistent with technological limitations, manufacturer's specifications, and good engineering and good air pollution control practices for minimizing emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]
3. At all times during the operation of Unit 2, the Permittee shall operate the low NO_x burners and overfire air, and the SCR system in accordance with manufacturer's specifications and good engineering practices to minimize emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]
4. At all times, including during periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate each unit in a manner consistent with good air pollution control practices for minimizing emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]
5. The Permittee shall, at all times when Unit 1 and Unit 2 are operating, continuously operate the Wet Flue Gas Desulfurization and Hot Side Electrostatic Precipitator in accordance with manufacturer's specifications and good engineering practices to minimize emissions.
[40 CFR 52.145 and A.A.C R-18-2-331A.3.c]

[Material Permit Condition indicated by italics and underline]

C. Compliance Determination Requirements

1. Oxides of Nitrogen (NO_x)

- a. *At all times, the Permittee shall calibrate, maintain, and operate a continuous emissions monitoring system for monitoring NO_x emissions in accordance with 40 CFR Part 75 requirements.*

[40 CFR 52.145 and A.A.C R-18-2-331A.3.c]

[Material Permit Condition indicated by italics and underline]

- b. The Permittee shall demonstrate compliance with the NO_x emission limitations specified in Condition III.A.1 in accordance with the following procedure:

[40 CFR 52.145]

- (1) Sum the total pounds of NO_x emitted from the unit during the current boiler-operating day and the previous twenty nine (29) boiler operating days;
- (2) Sum the total heat input to the unit, in MMBtu, during the current boiler-operating day and the previous twenty-nine (29) boiler-operating days; and
- (3) Divide the total number of pounds of NO_x emitted from the unit during the thirty (30) boiler operating days by the total heat input during the thirty (30) boiler operating days. A new 30-boiler-operating-day rolling average NO_x emission rate shall be calculated for each new boiler operating day. Each 30-boiler-operating-day average NO_x emission rate shall include all emissions and all heat input that occur during all periods within any boiler-operating day, including emissions from startup, shutdown, and malfunction.

- c. If a valid NO_x pounds per hour value or a valid heat input value is not available for any hour for a unit in a given boiler operating day, the heat input and NO_x pounds per hour value for that hour shall not be used in the calculation of the 30-boiler-operating-day average.

[40 CFR 52.145]

- d. The Permittee shall maintain records of the 30-boiler-operating-day average NO_x emission rate for each unit for each boiler operating day.

2. Sulfur Dioxide (SO₂)

- a. *At all times, the Permittee shall calibrate, maintain, and operate a continuous emissions monitoring system for monitoring SO₂ emissions in accordance with 40 CFR Part 75 requirements.*

[40 CFR 52.145 and A.A.C R-18-2-331A.3.c]

[Material Permit Condition indicated by italics and underline]

- b. The Permittee shall demonstrate compliance with the SO₂ emission limitations specified in Condition III.A.2 in accordance with the following

procedure:

[40 CFR 52.145]

- (1) Sum the total pounds of SO₂ emitted from each unit during the current boiler-operating day and the preceding twenty-nine (29) boiler-operating days.
 - (2) Sum the total heat input from each unit, in MMBtu, during the current boiler-operating-day and the preceding twenty-nine (29) boiler-operating days.
 - (3) Divide the total pounds of SO₂ emitted during the 30-day period by the total heat input during the 30-day period. A new 30-boiler-operating-day average SO₂ emission rate shall be calculated for each new boiler-operating day. Each 30-boiler-operating-day average SO₂ emission rate shall include all emissions and all heat input that occur during all periods within any boiler-operating day, including emissions from startup, shutdown, and malfunction.
- c. In determining the 30-boiler-operating-day average SO₂ emission rate, the Permittee shall use CEMS in accordance with the procedures of 40 CFR Part 75 except for the following, for which the Permittee shall follow 40 CFR Part 63.10010(e)(4) and (f):
- (1) SO₂ emissions data shall not be bias adjusted,
 - (2) The missing data substitution procedures from 40 CFR Part 75 shall not apply, and
 - (3) Diluent capping (i.e., 5% CO₂) will be applied to the SO₂ emission calculation for any hours where the measured CO₂ concentration is less than 5% following the procedures in 40 CFR Part 63.10007(f).
- d. If a valid SO₂ pounds per hour value or a valid heat input value is not available for any hour for a unit in a given boiler operating day, the heat input and SO₂ pounds per hour value for that hour shall not be used in the calculation of the 30-boiler-operating-day average.
[40 CFR 52.145 and 40 CFR Part 63, Subpart UUUUU]
- e. The Permittee shall maintain records of the 30-boiler-operating-day average SO₂ emission rate for each unit for each boiler operating day.

3. Particulate Matter

- a. The Permittee shall demonstrate compliance with the PM₁₀ emission limitations specified in Condition III.A.3 by conducting stack tests.
[A.A.C. R18-2-312]
- b. Within 180 days of installation and commencing commercial operation of the SCR system on Unit 1, the Permittee shall conduct a performance test to determine compliance with the PM₁₀ emission rate established in Condition III.A.3 using EPA Method 5, in 40 CFR part 60, Appendix A,

and Method 202 in 40 CFR Part 51, Appendix M. Thereafter, the tests shall be conducted annually.

[40 CFR 52.145 and A.A.C. R18-2-312]

- c. A test protocol shall be submitted to EPA and ADEQ a minimum of 30 days prior to the scheduled testing. The protocol shall identify which method(s) will be used to demonstrate compliance.

[40 CFR 52.145 and A.A.C. R18-2-312]

- d. Each test shall consist of three runs, with each run at least 120 minutes in duration, and each run collecting a minimum sample of 60 dry standard cubic feet. Results shall be reported in lb/MMBtu using the calculation in 40 CFR Part 60 Appendix A Method 19.

[40 CFR 52.145 and A.A.C. R18-2-312]

- e. In addition to annual stack tests, the Permittee shall monitor particulate emissions for compliance with the emission limitations in accordance with the applicable Compliance Assurance Monitoring (CAM) plan developed and approved in accordance with 40 CFR Part 64. Compliance with the CAM Plan requirements outlined in Condition II.D.3.1 of Attachment B shall be deemed compliance with this requirement.

[40 CFR 52.145 and A.A.C. R18-2-312]

4. Sulfuric Acid (H₂SO₄) Mist

[A.A.C. R18-2-312]

- a. Within 180 days of commencement of operation of the SCR system on Unit 1, the Permittee shall complete performance tests, conducted using EPA Conditional Test Method 13 (CTM-13) or an alternate test method, to show compliance with the emission limit in Condition III.A.4. Subsequent testing shall be conducted annually.

- b. If the Permittee requests an alternate test method, the Permittee must submit this request for approval to the Director at least 60 days prior to commencing the test program. The Permittee must notify the Director at least 30 days prior to commencing the test program and shall submit the test report to the Director within 60 days of completing the test program.

D. Monitoring Requirements

1. *At all times, the Permittee shall calibrate, maintain, and operate CEMS, in full compliance with the requirements found at 40 CFR Part 75, to accurately measure SO₂, NO_x diluent, and stack gas volumetric flow rate from each unit.*

[40 CFR 52.145 and A.A.C R-18-2-331A.3.c]

[Material Permit Condition indicated by italics and underline]

2. All valid CEMS hourly data shall be used to determine compliance with the emission limitations for NO_x and SO₂ in Condition III.A.

[40 CFR 52.145]

E. Recordkeeping Requirements

The Permittee shall maintain the following records for at least five years:

1. All CEMS data, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.
2. Daily 30-boiler-operating-day rolling emission rates for NO_x and SO₂, when applicable, for each unit, calculated in accordance with Conditions III.C.1 and 2 respectively.
3. Records of quality assurance and quality control activities for emissions measuring systems, including, but not limited to, any records required by 40 CFR Part 75.
4. Records of the relative accuracy test for hourly NO_x and SO₂ lb/hr measurement and hourly heat input measurement.
5. Records of all major maintenance activities conducted on emission units, air pollution control equipment, and CEMS.
6. Any other records required by 40 CFR Part 75.

F. Reporting Requirements

All reports shall be submitted to ADEQ and the EPA.

1. The owner/operator shall notify the Administrator and the Director within ten (10) business days after completion of installation of Selective Catalytic Reduction system on Unit 1 subject to this section.
2. Within 30 days after the applicable compliance date(s) in 40 CFR 52.145 and within 30 days of every second calendar quarter thereafter (i.e., semi-annually), the Permittee shall submit a report that lists the daily 30-boiler-operating-day rolling emission rates for NO_x and SO₂ for each unit calculated in accordance with 40 CFR 52.145 (f)(5). Included in this report shall be the results of any relative accuracy test audit performed during the two preceding calendar quarters.

G. Permit Shield

[A.A.C. R18-2-325]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 52.145.

IV. BART Alternative OS-2 Requirements for Unit 1 Shutdown

A. Emission Limitations/ Standards

[40 CFR 52.145]

1. In the event that the Permittee elects BART Alternative operating strategy OS-2 to shut down Unit 1 pursuant to Condition II.B.2.b by December 31, 2029, the Permittee shall comply with the Unit 1 interim operating strategy requirements in Condition II.C until the date of permanent shutdown of Unit 1.
2. If the Permittee elects to shut down Unit 1 pursuant to Condition II.B.2.b, the Permittee shall permanently shutdown Unit 1 by December 31, 2029.

B. Air Pollution Control Requirements

1. At all times during the operation of Unit 1, the Permittee shall operate the low NO_x burners and overfire air in a manner consistent with technological limitations, manufacturer's specifications, and good engineering and good air pollution control practices for minimizing emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]
2. At all times during the operation of Unit 2, the Permittee shall operate the low NO_x burners and overfire air, and the SCR system in accordance with manufacturer's specifications and good engineering practices to minimize emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.e]
[Material Permit Condition indicated by italics and underline]
3. At all times, including during periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate each unit in a manner consistent with good air pollution control practices for minimizing emissions.
[40 CFR 52.145(f)(10)(ii) and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]
4. The Permittee shall, at all times when Unit 1 and Unit 2 are operating, continuously operate the Wet Flue Gas Desulfurization and Hot Side Electrostatic Precipitator in accordance with manufacturer's specifications and good engineering practices to minimize emissions.
[40 CFR 52.145 and A.A.C R-18-2-331A.3.c]
[Material Permit Condition indicated by italics and underline]

C. Monitoring, Reporting, and Recordkeeping Requirements

The Permittee shall meet all the monitoring, reporting, and recordkeeping requirements listed in Conditions II.D.3, II.D.4, II.E.3, II.E.4, and II.G.3 of Attachment "B" of this permit for PM, NO_x, and SO₂ respectively.

D. Performance Testing

[A.A.C R-18-2-312]

The Permittee shall meet all the testing requirements for PM listed in Condition II.D.5 of Attachment "B".

E. Notification

The Permittee shall notify ADEQ and EPA of the date on which Unit 1 is permanently retired within 30 days of the retirement date.

F. Permit Shield

[A.A.C R-18-2-325]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 52.145.