

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 W. Washington Street ● Phoenix, AZ 85007 ● Phone: (602) 771-2316

MINOR PERMIT REVISION TO AIR QUALITY CONTROL PERMIT

(As required by Title 49, Chapter 3, Article 2, Section 49-426, Arizona Revised Statutes)

*This air quality control permit does not relieve applicant of responsibility for meeting all air pollution regulations*

1. PERMIT TO BE ISSUED TO (Business license name of organization that is to receive permit) \_\_\_\_\_

**Tucson Electric Power Company**

2. NAME (OR NAMES) OF OWNER OR PRINCIPALS DOING BUSINESS AS THE ABOVE ORGANIZATION \_\_\_\_\_

**Tucson Electric Power Company**

3. MAILING ADDRESS **PO Box 711, Mail Stop: UE204**

**Tucson, AZ 85702**

4. ORIGINAL EQUIPMENT LOCATION/ADDRESS \_\_\_\_\_

**Springerville, Apache County, AZ 85938**

5. FACILITIES OR EQUIPMENT DESCRIPTION **Steam Electric Generating Station**

6. THIS PERMIT ISSUED SUBJECT TO THE FOLLOWING **Conditions as described in attached**

7. ADEQ MINOR REVISION NUMBER **37783** PERMIT CLASS **I**

MINOR REVISION ISSUED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2005

SIGNATURE

**Nancy C. Wrona, Director, Air Quality Division**

TITLE

## MINOR PERMIT REVISION DESCRIPTION

This application for a minor permit revision was submitted to implement the terms of a consent decree issued by the United States District Court for the District of Arizona on June 24, 2005, in the matter of The Grand Canyon Trust v. Tucson Electric Power Company, CV01-2189 PCT EHC (the "Consent Decree" or "Decree"). The Decree was issued in connection with the compromise resolution of that litigation. Section VIII of the Decree requires TEP to integrate requirements in Part III, V, and VI of the Decree with Operating Permit No. 1000105 and Significant Revision No. 1001554 as issued by ADEQ to TEP for the SGS as federally enforceable "applicable requirements". This minor permit revision for Tucson Electric Power Company results in the following changes to Operating Permit No. 1000105 revised by Permit No. 1001554:

### **Addenda (Minor Revision) to Operating Permit No. 1000105 revised by permit no. 1001554 for**

#### **Tucson Electric Power Company**

The following conditions are amendments to the requirements set forth in Attachment "B" of Operating Permit No. 1000105 revised by Permit No. 1001554:

#### **No. 1 Add the following to Attachment "B" General Requirements Definitions I.B.2**

2. "Calendar Day" means any 24-hour period between 12:00 midnight and the following midnight in Arizona. [Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(b)]

#### **No. 2 Renumber Attachment "B" General Requirements Definitions I.B.2- I.B.6 to I.B.3-I.B.7**

#### **Add the following to Attachment "B" General Requirements Definitions 1.B.8**

8. "Major Burner Malfunction" is, for the purposes of complying with the NOx emission limitation in Specific Condition II.A.4.b. of Attachment "B", a Malfunction (as defined in Specific Condition I.B.10 of Attachment "B") that is unanticipated and requires extensive repairs to the low NOx burners and the Secondary Overfire Air dampers that are internal to the boiler at Unit 1 or Unit 2. [Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(f)]

#### **No. 5: Renumber Attachment "B" General Requirements Definitions I.B.7 to I.B.9.**

#### **Add the following to Attachment "B" General Requirements Definitions 1.B.10**

10. "NOx" means total oxides of nitrogen, except nitrous oxide, which are expressed as nitrogen dioxide using EPA Reference Method 7. [Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(g)]

#### **Renumber Attachment "B" General Requirements Definitions I.B.8. & I.B.9 to I.B.11. & I.B.12.**

#### **Add the following to Attachment "B" General Requirements Definitions 1.B.13**

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13. “PM” or “Particulate Matter” mean any airborne, finely divided solid or liquid material, other than uncombined water, with an aerodynamic diameter smaller than 100 micrometers, and which is expressed as PM using EPA Reference Method 5.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(j)]

**Renumber Attachment “B” General Requirements Definitions 1.B.10 to 1.B.14**

**Add the following to Attachment “B” General Requirements Definitions 1.B.15**

15. “SO<sub>2</sub>” means sulfur dioxide. [Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(l)]

**Renumber Attachment “B” General Requirements Definitions 1.B.11 & 1.B.12 to 1.B.16 & 1.B.17**

**Add the following to Attachment “B” General Requirements Definitions 1.B.18-1.B.22**

18. “Unit” means Unit 1, Unit 2, Unit 3, or Unit 4.  
[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(n)]
19. “Unit 1” and “Unit 2” are the existing steam generating units at the Springerville Generating Station.  
[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 3(o)]
20. “Unit 3” and “Unit 4” are the proposed new steam generating units at the Springerville Generating Station. Each of these units is an “affected facility” under 40 CFR part 60, subpart Da, “Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978.”
21. For the purposes of the sulfur dioxide standard in Specific Condition II.A.3.c. of Attachment B and the nitrogen oxide standard in Specific Condition II.A.4.b of Attachment “B”, the following capitalized terms shall be defined as follows.
- a. “Emission Rate” means the total amount of a pollutant emitted from an emission unit during a given time period, expressed in lbs/MMBtu, derived for SO<sub>2</sub> and NO<sub>x</sub> from a SO<sub>2</sub> or NO<sub>x</sub> continuous emission monitoring system and diluent (O<sub>2</sub> or CO<sub>2</sub>) monitoring system consistent with 40 CFR 75.
  - b. “Hourly Average” means the calculated arithmetic average hourly emission rate, expressed in lbs/MMBtu, derived from an SO<sub>2</sub> and/or NO<sub>x</sub> continuous emission monitoring system and diluent (CO<sub>2</sub> or O<sub>2</sub>) monitoring system consistent with 40 CFR 75 collected during an hour, beginning on the hour.
  - c. “Daily Average” means the arithmetic average of the Hourly Averages for a Unit in a day.
  - d. “Combined Daily Average” means the arithmetic average of the Daily Averages of Unit 1 and Unit 2 on a given day. For days when only one Unit has any operating hours, the Combined Daily Average shall be the Daily Average for that unit.
  - e. “Monthly Average” means the arithmetic average of the Combined Daily Average Emission Rates for Units 1 and 2 for a calendar month.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 17(d)]

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22. For the purposes of the sulfur dioxide control efficiency in Specific Condition II.A.3.g. of Attachment “B”, the following capitalized terms shall be defined as follows:

- a. “Hourly Average Stack Outlet Sulfur Dioxide Concentration” means the calculated arithmetic average hourly emission rate, expressed in lbs/MMBtu, derived from an SO<sub>2</sub> and/or NO<sub>x</sub> continuous emission monitoring system and diluent (CO<sub>2</sub> or O<sub>2</sub>) monitoring system consistent with 40 CFR 75, collected during an hour, beginning on the hour, using the SGS’ existing SO<sub>2</sub> Continuous Emission Monitoring System.
- b. “Hourly Average Boiler Inlet Sulfur Dioxide Concentrations” means the calculated hourly inlet sulfur dioxide concentration, expressed in lbs/MMBtu, derived from all valid measurements or data points collected from the monitoring system (referred to in Specific Condition II.A.3.i of Attachment “B”) during an hour, beginning on the hour; provided however, that (A) in the event the monitoring system is not in operation due to maintenance and/or malfunction, the Permittee shall substitute for each hour the average sulfur dioxide concentration from the previous 30 days of data from such monitoring system; and (B) if the monitoring system has not yet been in service for 30 days, the Permittee shall use the previous 30 days of coal analysis as received from the coal vendor.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 18(f)]

## II. UNIT 1 AND UNIT 2 (P1 AND P2)

### A. Emission Limits and Standards (Unit 1 and Unit 2)

#### 2. Particulate Matter Standard

#### Renumber the following to Attachment “B” Unit 1 and Unit 2 Emission Limits and Standards (P1 and P2) II.A.2.a.

- a. The Permittee shall not cause to be discharged into the atmosphere from the stack of Unit 1 and Unit 2 any gases which contain particulate matter in excess of 0.034 lb per million Btu derived from fossil fuel except for periods of startup, shutdown, and malfunction as defined in Specific Conditions II.A.1.a-c of Attachment “B”.

[Approval to Construct of December 21, 1977, Condition XIII]

#### Add the following to Attachment “B” Unit 1 and Unit 2 Emission Limits and Standards (P1 and P2) II.A.2.b.

- b. At all times from and after January 1, 2006, the Permittee shall not cause to be discharged to the atmosphere from the stack of Unit 1 and Unit 2 any gases which contain Particulate Matter in excess of 0.03 lb/MMBtu derived from fossil fuel, except for periods of Start-Up, Shutdown or Malfunction.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), §11]

#### Add the following to Attachment “B” Unit 1 and Unit 2 Emission Limits and Standards (P1 and P2) II.A.3.c-II.A.3.i.

- c. Sulfur Dioxide Emission Standard. At all times from and after December 31, 2006, including periods of Start-up, Shutdown, and/or Malfunction, the Permittee shall not cause to be discharged to the atmosphere from the stack of Unit 1 and Unit 2 any gases which contain sulfur dioxide in excess of 0.27 pounds per million Btu derived from fossil fuels, based on a 12-month rolling average, averaged over Units 1 and 2.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 8]

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d. Monitoring for Sulfur Dioxide. The Permittee's compliance with the SO<sub>2</sub> emission limit as set forth in Specific Condition II.A.3.c of Attachment "B" shall be determined as follows:

- (1) From and after December 31, 2006, the Permittee shall record Hourly Average Emission Rate (as defined in Specific Condition I.B.21.(a)-(b) of Attachment "B") data for SO<sub>2</sub> in lbs/MMBtu for each hour of Unit operation.
- (2) From and after December 31, 2007, each calendar month the Permittee shall calculate a 12-month rolling average emission rate calculated as the arithmetic average of the immediately prior 12 Monthly Averages (as defined in Specific Condition I.B.21.e. of Attachment "B"), in lbs/MMBtu. This calculation shall be made available for review by the fifth working day following the end of each rolling 12-month average period.
- (3) If the calculated 12-month rolling average emission rate exceeds the applicable mass emission limit set forth in Specific Condition II.A.3.c. of Attachment "B", the Permittee shall be in violation of such mass emission limit and shall be deemed to have been in violation for each Day in the last occurring calendar month included in the calculation of such 12-month rolling average emission rate.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 17]

- (4) Unless explicitly specified elsewhere in this Permit, all average emission rates shall:
  - (a) include all periods of Startup, Shutdown, Malfunction, and emergency and
  - (b) exclude (i) data for a Unit on a day that has not operated for at least one hour; (ii) data for a Unit from periods when the Unit is not operating; and (iii) other inappropriate data as specified in the applicable EPA testing regulations at 40 CFR 60, Appendix A, and Part 75 (e.g., from periods of malfunction by the monitoring system).

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 19]

e. Applicability of Sulfur Dioxide Emission Caps. Commencing December 31, 2006, emissions from Units 1 and 2 shall become subject to the sulfur dioxide emission caps set forth in Specific Condition III.A.3.d.(2)(a) of Attachment "B" (the "Two-Unit Caps") issued April 29, 2002. These limits shall expire when the three-unit caps become effective under the terms of operating permit no. 1000105 revised by significant permit revision no. 1001554, as set forth in the Specific Condition III.A.3.d.(2)(b) of Attachment "B".

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 12]

f. SO<sub>2</sub> Control Efficiency. At all times from and after December 31, 2006, except for periods of Startup, Shutdown, and/or Malfunction, SO<sub>2</sub> emission from Unit 1 and Unit 2 shall be limited to 15% or less of the potential boiler inlet SO<sub>2</sub> concentration (85% reduction) based on a 90-day rolling average, averaged over Units 1 and 2.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 9]

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g. Monitoring for SO<sub>2</sub> Control Efficiency. The Permittee's compliance with the SO<sub>2</sub> reduction requirement as set forth in Specific Condition II.A.3.f. of Attachment "B" shall be determined as follows:

- (1) From and after December 31, 2006, except for periods of Startup, Shutdown or Malfunction, the Permittee shall separately record (i) Hourly Average Boiler Inlet Sulfur Dioxide Concentrations (as defined in Specific Condition I.B.22.(bi) of Attachment "B") and (b) Hourly Average Stack Outlet Sulfur Dioxide Concentrations (as defined in Specific Condition I.B.22.(a) of Attachment "B"), for Unit 1 and Unit 2.
- (2) For each Calendar Day, the Permittee shall calculate (i) the arithmetic average of the Hourly Average Boiler Inlet Sulfur Dioxide Concentrations, expressed in lbs/MMBtu, for each of Unit 1 and Unit 2 in a Day (the "Combined Daily Inlet Average", and (ii) the arithmetic average of the Hourly Average Stack Outlet Sulfur Dioxide Concentrations, expressed in lbs/MMBtu, for each of Unit 1 and Unit 2 in that Day (the "Combined Daily Outlet Average").
- (3) For each Calendar Day, the Permittee shall calculate the daily average SO<sub>2</sub> reduction rate for Unit 1 and 2 as follows: (Combined Daily Inlet Average – Combined Daily Outlet Average) ÷ Combined Daily Inlet Average, expressed as a percentage (the "Daily Average Reduction Rate").
- (4) From and after April 1, 2007 (i.e., 91 days after December 31, 2006), each Calendar Day the Permittee shall calculate and record a 90-day rolling average Daily Average Reduction Rate calculated as the arithmetic average of the immediately prior 90 Daily Average Reduction Rates.

If that average is less than the 85% SO<sub>2</sub> reduction requirement set forth in Specific Condition II.A.3.f of Attachment "B", the Permittee shall be in violation of such SO<sub>2</sub> reduction requirement for the last occurring Calendar Day included in the calculation of such 90-day rolling average Reduction Rate.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 18]

- (5) Unless explicitly specified elsewhere in this Permit, all average emission reduction efficiencies shall:
  - (a) Include all periods of emergency, and
  - (b) exclude (i) data for Unit on a day that has not operated for at least one hour; (ii) data for a Unit from periods when the Unit is not operating; and (iii) other inappropriate data as specified in the applicable EPA testing regulations at 40 CFR Part 60, Appendix A, and Part 75 (e.g., from periods of malfunction by the monitoring system.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 19]

h. Early SO<sub>2</sub> Controls. From and after January 1, 2006 through December 31, 2006, except for periods of Startup, Shutdown, or Malfunction and periods where, in the exercise of good engineering judgement and good air pollution control practices, a reduced level of scrubbing is necessary to test, break in or adjust equipment:

- (1) The Permittee shall scrub the entire flue gas stream on each of Unit 1 and Unit 2 using all Spray Dryer Absorber modules unless unit load requires a lesser number

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of Spray Dryer Absorbers in service to maintain the appropriate flue gas flow distribution; provided that, in no event shall any flue gas flow be bypassed around the Spray Dryer Absorbers unscrubbed.

- (2) The Permittee shall operate Units 1 and 2 to achieve 85 percent reduction in SO<sub>2</sub> on a 90-day rolling average over Unit 1 and Unit 2 in accordance with Specific Condition II.A.3.f of Attachment "B".

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 13]

- i. Monitoring system. On or prior to December 31, 2006, the Permittee shall install and certify, and thereafter operate either an in-line elemental coal analyzer upstream of both the Unit 1 and Unit 2 boilers, which will be available to both Units, or an "as-fired" fuel monitoring system (upstream of the coal pulverizers) meeting the requirements of EPA Reference Method 19 in 40 CFR 60 to determine the potential sulfur dioxide inlet concentration.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 7 and A.A.C.R18-2-331.A.3.c]

#### 4. Nitrogen Oxides Emissions Standard.

##### **Renumber the following to Attachment "B" Unit 1 and Unit 2 Emission Limits and Standards (P1 and P2) II.A.4.a.**

- a. The Permittee shall not cause to be discharged into the atmosphere from the stack of Unit 1 and Unit 2 any gases which contain nitrogen oxides, expressed as NO<sub>2</sub>, in excess of 0.697 pounds per million Btu derived from fossil fuel except for periods of startup, shutdown, and malfunction as defined in Specific Condition II.A.1.a-c of Attachment "B".

[Approval to Construct of December 21, 1977, Condition XIII]

##### **Add the following to Attachment "B" Unit 1 and Unit 2 Emission Limits and Standards (P1 and P2) II.A.4.b.-II.A.4.e.**

- b. NOx Mass Emission Limits. At all times from and after December 31, 2006, except for periods of Major Burner Malfunction, the Permittee shall not cause to be discharged to the atmosphere from the Stack of Unit 1 and Unit 2 any gases which contain nitrogen oxides, expressed as NO<sub>2</sub>, in excess of 0.22 lb/MMBtu derived from fossil fuel, based on a 12-month rolling average, averaged over Units 1 and 2. The exception for periods of operation during a Major Burner Malfunction is applicable only if (a) the Permittee reports the Major Burner Malfunction to ADEQ within two (2) business days and, (b) within seven (7) business days, provides the ADEQ with a compliance plan to correct the Major Burner Malfunction as expeditiously as practicable.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 10]

- c. Monitoring for Nitrogen Dioxide

The Permittee's compliance with the NOx emission limit as set forth in Specific Condition II.A.4.b. of Attachment "B" shall be determined as follows:

- (1) From and after December 31, 2006, the Permittee shall record Hourly Average Emission Rate (as defined in Specific Condition I.B.21.(a)-(b) of Attachment "B") data for NOx in lbs/MMBtu for each hour of Unit operation.
- (2) From and after December 31, 2007, each calendar month the Permittee shall calculate a 12-month rolling average emission rate calculated as the arithmetic average of the immediately prior 12 Monthly Averages (as defined in Specific

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Condition I.B.21.(e) of Attachment “B”) in lbs/MMBtu. This calculation shall be made available for review by the fifth working day following the end of each rolling 12-month average period.

- (3) If the calculated 12-month rolling average emission rate exceeds the applicable mass emission limit set forth in Specific Condition II.A.4.b. of Attachment “B”, the Permittee shall be in violation of such mass emission limit, and shall be deemed to have been in violation for each Day in the last occurring calendar month included in the calculation of such 12-month rolling average emission rate.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 17]

- (4) Unless explicitly specified elsewhere in this Permit, all average emissions rates shall:
- (a) include all periods of Startup, Shutdown, Malfunction, and emergency and
  - (b) exclude (i) data for Unit on a day that has not operated for at least one hour; (ii) data for a Unit from periods when the Unit is not operating; and (iii) other inappropriate data as specified in the applicable EPA testing regulations at 40 CFR Part 60, Appendix A, and Part 75 (e.g., from periods of malfunction by the monitoring system).

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 19]

- d. Applicability of Nitrogen Oxides Emission Caps. Commencing December 31, 2006, emissions from Units 1 and 2 shall become subject to the nitrogen oxides emission caps set forth in Specific Condition III.A.4.c.(1)(a) of Attachment “B” (the “Two-Unit Caps”). These limits shall expire when the three-unit caps become effective under the terms of Operating Permit No. 1000105 revised by significant permit revision no. 1001554, as set forth in Specific Condition III.A.4.c.(1)(b) of Attachment “B”.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 12]

- e. Early NOx Controls

- (1) The new Low NOx Burners that were installed on Unit 1 and Unit 2 in connection with operating permit no. 1000105 revised by significant permit revision no. 1001554 shall be operated.
- (2) During the period between January 1, 2006 and December 31, 2006, the Permittee shall operate Unit 1 and Unit 2 to reduce NOx emissions in a manner (to the maximum extent practicable) consistent with achieving the limits in Specific Condition II.A.4.b. of Attachment “B” whenever the Unit is operating, except during periods of Startup, Shutdown, Malfunction, and/or Major Burner Malfunction and where, in the exercise of good engineering judgement and good air pollution control practices, a reduced level is necessary to test, break-in or adjust the new equipment.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 14 and A.A.C.R18-2-331.A.3.e]

## B. Air Pollution Control Equipment (Unit 1 and Unit 2)

**Add the following to Attachment “B” Unit 1 and Unit 2 Air Pollution Control Equipment (P1 and P2) II.B.3.**

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3. Good Air Pollution Control Practices. The Permittee shall at all times, including periods of Startup, Shutdown, and Malfunction, maintain and operate Unit 1 and Unit 2 in a manner consistent with good air pollution control practices for minimizing emissions. Without limiting the Permittee's obligations in the event of a Malfunction, from and after the effective date of this Permit, the Permittee shall address each Malfunction affecting Unit 1 or Unit 2 and take corrective action, when possible, within 24 hours of when the Permittee first learns of the Malfunction. Malfunctions that cannot be corrected within a 24 hour period shall be reported to the ADEQ within two (2) business days and a plan for bringing the affected Unit(s) into compliance shall be submitted to the ADEQ within seven (7) business days, unless the Malfunction can be corrected within seven (7) business days.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), § 15]

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ATTACHMENT "C"

APPLICABLE REQUIREMENTS

**Addenda (Minor Revision) to Operating Permit No. 1000105 revised by permit No. 1001554**

for

**Tucson Electric Power Company**

The following conditions are amendments to the requirements set forth in Attachment "C" of Operating Permit No.: 1000105 revised by permit No. 1001554:

**Add the following to Attachment "C" as federally enforceable "Applicable Requirement"**

Requirements of §§ 7 through 19 of the Consent Decree between the Grand Canyon Trust and Tucson Electric Power Company entered by the United States District Court for the District of Arizona on June 24, 2005 in the matter of The Grand Canyon Trust v. Tucson Electric Power Company, CV01-2189 PCT EHC on June 24, 2005.

[Consent Decree of June 24, 2005 , CV01-2189 PCT EHC (D. Ariz.), Part VIII]

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