

**TECHNICAL REVIEW DOCUMENT**  
**For**  
**DRAFT RENEWAL OF OPERATING PERMIT 02OPLI253**

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Tri-State Generation and Transmission Association, Inc.  
Limon Generating Station  
Lincoln County  
Source ID 0730036

Operating Permit Engineer:	Rachel Frisz
Operating Permit Supervisor review:	Matt Burgett
Compliance Unit review:	Jeffrey Bishop

**I. Purpose**

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed Operating Permit for Tri-State Generation and Transmission Association, Inc. – Limon Generating Station. The original Operating Permit was issued April 1, 2004, with the first renewal issued June 1, 2010, and expired on June 1, 2015. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal operating permit is issued and any previously extended permit shield continues in full force and operation.

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application received on April 22, 2014, the Acid Rain Permit Renewal Application received on April 22, 2014, previous inspection reports and various email correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at [www.colorado.gov/cdphe/airTitleV](http://www.colorado.gov/cdphe/airTitleV). This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

## II. Description of Source

This facility consists of two natural gas-fired simple cycle combustion turbines used to generate electric power and is defined under Standard Industrial Classification 4911. The combustion turbines are primarily fueled by natural gas and are designed to burn distillate fuel oil as a back-up fuel source. Each turbine is equipped with dry low NO<sub>x</sub> combustion systems to reduce NO<sub>x</sub> emissions. Water injection is used to reduce NO<sub>x</sub> emissions when burning distillate fuel oil. Each combustion turbine generates approximately 82 MW of power.

The facility is located at 48303 State Highway 71 (approximately 7 kilometers south, southwest of Limon on the west side of State Highway 71). There are no Federal Class I designated areas within 100 kilometers and no affected states within 50 miles of this facility.

This facility is located in an area designated attainment for all pollutants. It is categorized as a major stationary source (Potential to Emit > 250 tons/year for carbon monoxide and nitrogen oxide). Future modifications at this facility resulting in a significant net emissions increase (see Reg 3, Part D, Sections II.A.27 and 44) for any pollutant as listed in Regulation No. 3, Part D, Section II.A.44 or a modification which is major by itself (i.e. a Potential to Emit of > 250 tons/year of any pollutant listed in Regulation No. 3, Part D, Section II.A.44) may result in the application of the PSD review requirements.

Facility-wide emissions are outlined below:

Pollutant	Potential-to-Emit (tons/yr)	Actual Emissions – 2013 (tons/yr)
PM	115.6	4.3
PM <sub>10</sub>	115.6	4.3
SO <sub>2</sub>	49.2	0.6
NO <sub>x</sub>	370.4	22.2
VOC	13.4	0.2
CO	396.4	6.9
HAP	6	Less than reportable levels

Potential emissions are based on permitted emission limits. HAP potential to emit is based on both turbines burning natural gas only, AP-42 (Section 3.1, Table 3.1-3, dated April 2000) emission factors for formaldehyde, xylene and acetaldehyde (3 highest HAP emission factors) and the permitted heat input rate. Actual emissions are based on APENs submitted for data year 2013.

## III. Applicable Requirements

### Hazardous Air Pollutants (HAPs)

This facility is an area source of HAP emissions with no individual HAP PTE over 10 tons per year and total HAPs PTE less than 25 tons per year.

### Accidental Release Program – 112(r)

Section 112(r) of the Clean Air Act mandates a new federal focus on the prevention of chemical accidents. Sources subject to these provisions must develop and implement risk management programs that include hazard assessment, a prevention program, and an emergency response program. They must prepare and implement a Risk Management Plan (RMP) as specified in the Rule

Based on the information provided by the applicant, this facility is not subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act).

### Compliance Assurance Monitoring (CAM)

CAM requirements apply to the turbines when distillate oil is used as fuel, as determined during initial issuance of the Operating Permit.

### 40 CFR Part 72 – Acid Rain Program (ARP)

The Combustion Turbines L001 and L002 of this facility are subject to the Acid Rain Program and the source has certified that they will comply with the applicable Acid Rain Requirements. The appropriate provisions are contained in Section III of the operating permit.

### **New Source Performance Standards (NSPS):**

#### Standards of Performance for Stationary Gas Turbines (40 CFR Part 60, Subpart GG) Applicability:

The affected facilities to which this subpart applies are stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour. The turbines at Tri-State Limon are subject to the Standards of Performance for Stationary Gas Turbines of Subpart GG and the appropriate provisions were included in the operating permit.

#### Standards of Performance for Stationary Combustion Turbines (40 CFR Part 60, Subpart KKKK) Applicability:

The affected facilities to which this subpart applies are stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005. The Tri-State Limon turbines have not been modified or reconstructed after February 18, 2005. Therefore, Tri-State Limon is not subject to NSPS KKKK.

#### National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines (40 CFR Part 60, Subpart YYYY) Applicability:

The affected facilities to which this subpart applies are stationary combustion turbines located at major sources of HAP emissions. The Limon turbines are located at an area

source of HAP emissions. Therefore, the turbines at Tri-State Limon are not subject to this subpart.

### **Colorado Regulation No. 7:**

#### **Regulation 7, Section V.B- Disposal of Volatile Organic Compounds**

This requirement is not applicable since the facility is not a bulk gasoline terminal, bulk gasoline plant or gas dispensing facility as defined in Section VI.C.2., VI.C.3. and XV.A.3

#### **Regulation 7, Section VI.B.1 and VI.B.2- Storage of petroleum liquid in tanks greater than 151,412 liters (40,000 gallons)**

These requirements are not applicable as the liquids stored in tanks greater than 40,000 gallons at the Limon Generating Station are exempt from the provisions of Section VI.B.2 per Section VI.B.1.a.

#### **Regulation 7, Section VII.C- Storage of Crude Oil**

This requirement is not applicable as crude oil is not stored in tanks exceeding 40,000 gallons.

#### **Regulation 7, Section XVII - Statewide Controls for Oil and Gas Operations and Natural Gas-Fired Reciprocating Internal Combustion Engines**

This requirement is not applicable since the facility is not an oil and gas exploration and production operation, well production facility, natural gas compressor station, or a natural gas processing plant.

#### **Regulation 7, Section XVIII - Natural Gas-Actuated Pneumatic Controllers Associated with Oil and Gas Operations**

This section applies to pneumatic controllers that are actuated by natural gas, and located at, or upstream of natural gas processing plants (including: oil and gas exploration and production operations). Tri-State Limon is not an oil and gas facility and does not have any natural gas-actuated pneumatic controllers.

## **IV. Modifications Requested by the Source**

The 2nd renewal application was received by the Division on April 22, 2014. The application requested no changes to the operating permit and a renewal of the acid rain portion of the permit.

## **V. Other Modifications**

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions

identified during inspections and/or discrepancies identified during review of this renewal. These changes are as follows:

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- It should be noted that the monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).
- Modified the language concerning postmarked dates for report submittals to reflect the Division's current standard language.

#### Section I – General Activities and Summary

- Condition 1.4 was revised to reflect current State-only enforceable conditions.
- The following adjustments were made to Condition 2 for the Alternative Operating Scenario (AOS):
  - The Turbine AOS was revised to reflect the current version (1/23/2013)
  - Note that Condition 2.1 (1) is different than the current version language. This language was approved with Renewal 1 of this operating permit to include compressor stator and rotating blades and the turbine shroud block.
  - Language allowing for permanent replacements was removed. Per PS Memo 98-07A, the AOS cannot be used for the permanent replacement of a turbine at any source that is an existing major stationary source for a regulated NSR pollutant unless the turbine has federally enforceable emission limits that are below the significance levels in Regulation No 3, Part D, Section II.A.42. The Division is including the restrictions described above on permanent turbine replacements because there is no method to pre-determine that every possible replacement project (even when limited to the same make and model) will not be subject to major modification requirements under PSD.
- Updated PSD language and Regulation 3 references in Condition 3.1
- Updated CAM language to reflect current version in Condition 5.1

#### Section II – Specific Permit Terms

- Based on EPA’s response on another Title V operating permit, good engineering practices recordkeeping provisions were added for operating and maintenance procedures, schedules for maintenance and/or inspection activities, and records related to the operation and maintenance of the turbines and good engineering practices in Condition **1.2.3.1**
- Made the following changes to Condition **1.2.3.2**:
  - Updated the compliance test language to the most updated Division approved language
  - Clarified that the compliance test shall be conducted when hours of operation on both turbines reaches 3,500 hours in any two consecutive calendar years
  - Clarified that the test should measure filterable PM<sub>10</sub> in accordance with the Technical Review Document from the original operating permit issuance
  - Clarified that the test method shall be Method 5. Method 202 is for condensable PM.
- Added “credible evidence” to Conditions **1.4.2.3** and **1.4.2.4** and took out the phrase “In the absence of credible evidence to the contrary” before 1.4.2.3 to avoid duplicate language.
- For clarification, in Conditions **1.5.1.1.c** and **1.5.1.2.c**, the 60 hours/year for combustion tuning, fuel switching, and testing for both turbines is for each fuel type (i.e. Tri-State is allowed 60 hours for tuning, switching, and testing for natural gas AND 60 hours for tuning, switching, and testing for distillate fuel oil.) No changes have been made to this condition.
- Conditions **1.5.1.5** and **1.6.1.5** were updated to clarify the following: “hours of combustion tuning, fuel switching and/or testing for each turbine when burning natural gas and when burning distillate fuel oil shall be summed together to monitor compliance with the 60 hour limit **for each fuel type.**”
- Updated certified observer opacity language in Condition **1.12.5.5** to the most updated Division approved language

### Section III – Acid Rain Requirement

- Updated Alternate Designated Representative to Barry Ingold
- Revised the table to include calendar years corresponding to the relevant permit term for the renewal.
- Minor changes were made to the standard requirements, based on changes made to 40 CFR Part §72.9.
- Updated Condition 5 to delete “startup and” as Distillate fuel oil is not used for startup when operating natural gas.

#### Section IV – Permit Shield

- Updated the Regulation 3 Citation for the permit shield
- Updated description of Colorado Regulation No. 7 (except for Section V, Paragraphs VI.B.1 and 2, and Subsection VII.C) to include sections XVII and XVIII as they also apply statewide

#### Section IV – General Permit Conditions

- Updated the general permit conditions to the current version (5/22/2012)

#### Appendices

- Added an asterisk to the insignificant activities in Appendix A that are based on the size of the activity, emissions levels from the activity or the production rate of the activity. The individual emission points require recordkeeping verifying that the exemption applies as per Regulation No. 3, Part C, Section II.E
- Updated Appendices B and C (Monitoring and Permit Deviation Reports and Compliance Certification Reports) to the newest versions (8/20/2014).
- EPA's mailing address was revised (Appendix D). Removed the Acid Rain addresses in Appendix D, since annual certification is no longer required and submittal of quarterly reports/certifications is done electronically.