I. Applicant Information

Company Name	Colorado Springs Utilities – Ray Nixon Power Plant
Permit Number	10EP325
Source Location	700 South Conejos Street Colorado Springs, El Paso County, Colorado
AIRS ID	041-0030-001
Date	December 22, 2016
Review Engineer	Danielle Walker

II. Facility Description & Description of Project

Colorado Springs Utilities (CSU) Ray Nixon Power Plant operates a steam and power generation facility consisting of one (1) coal fired boiler and the associated equipment for coal and ash handling, two (2) natural gas fired simple cycle turbines, two (2) natural gas fired combined cycle turbines at the Front Range Power Plant, and one (1) natural gas/fuel oil fired auxiliary boiler. The coal fired boiler typically utilizes low-sulfur, sub-bituminous coal and the boiler (Unit 1) will use a Lime Spray Dryer (LSD) scrubber control system to reduce SO_2 emissions. The goal is for construction of the LSD to be completed by 2017 with tuning to begin in June 2017 and to complete testing in September 2017.

CSU requested a Construction Permit modification for the Ray Nixon Power Plant on June 10, 2016, with an application update on August 22, 2016 to incorporate a facility wide sulfur dioxide (SO_2) emission limitation required by 40 CFR Part 51, Subpart BB, Data Requirements Rule (DRR) for the 2010 1-hour Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS).

The requested changes are being made to construction permit 10EP325, which covers Unit 1 (Point 001) only with the exception of an additional facility-wide SO_2 emission limit requirement. Construction Permit 10EP325 was first issued on December 17, 1973 as Construction Permit C-10325. In the second permit issuance the permit was renamed as 10EP325. This is the sixth issuance for Construction Permit 10EP325.

This facility is currently operating under Title V Operating Permit 95OPEP106 which was last renewed on April 1, 2013 and under Construction Permits 12EP622, 15EP0840, 15EP0841, and 15EP0842.

The following table summarizes general information for the boilers and turbines operating at the Ray Nixon Power Plant:

	Unit 1	Unit 2	Unit 3	Auxiliary Boiler
Fuel	Coal	Natural Gas	Natural Gas	Natural Gas/Fuel Oil
Placed in Service	1980	1999	1999	1980
Boiler Rating – MMBtu/hr	2,049 (coal)	330 (natural gas)	330 (natural gas)	61 (No. 2 Fuel Oil)
Electrical Power Rating, Gross Megawatts	227	35	35	--
Pollution Control Device	Baghouse (PM, PM_{10}, & $PM_{2.5}$) Lime Spray Dryer Absorber (LSD) (SO_x) Activated Carbon Injection (ACI) (Hg) Ultra Low NO_X Burners and Over Fire Air[1]	None	None	None

Note: [1] The Ultra Low NO_X burners began instillation in Fall 2016.

The Ray Nixon Power Plant is considered a single source with three other facilities: Colorado Springs Utilities – Clear Spring Ranch Solids and Handling Disposal Facility (SHDF) (AIRS ID: 041-0091, OP: 95OPEP152), Colorado Springs Utilities – Front Range Power Plant (AIRS ID: 041-0030, OP: 96OPEP106), and Western Resources (AIRS ID: 777-1205, CP: 98PO0149, Portable Screen). The collection of the four facilities is referred to as the Clear Springs Ranch.

III. Application Completeness Review

The application for this modification was received on June 10, 2016 with additional information received on August 22, 2016. The Division worked with the applicant following the submittals to develop acceptable SO_2 emission limitations. The initial application is determined complete on the date it was received.

IV. Emissions Summary

The Potential to Emit and actual emissions of SO_2 at the Clear Springs Ranch **before** this modification, are as follows:

Unit	SO_2 Emissions (tpy)	
	PTE	**2014 Actual Emissions**
Ray Nixon Power Plant		
Nixon Unit 1	5,550.0	3,315.4
Nixon Auxiliary Boiler	2.23	0.008
Nixon Unit 2	1.0	0.0
Nixon Unit 3	1.0	0.0
Ray Nixon Power Plant Total	**5,554.23**	**3,315.41**
Front Range Power Plant		
FRPP Unit 1	10.1	2.26
FRPP Unit 2		2.01
Front Range Power Plant Total	**10.1**	**4.27**
Solids and Handling Disposal Facility		
Four Digester Gas Boilers and two flares	**52.5**	**23.6**
Western Resources (portable screen occasionally located at Ray Nixon Power Plant)	*No SO_2 Sources at this facility	
Clear Springs Ranch Total	**5,616.5**	**3,343.28**

The Potential to Emit (PTE) values in the table above are based on the original Title V permit applications and current SO_2 limits in the Operating Permits associated with each facility. The 2014 actual emissions are from the Division's Inventory system for the year 2014.

The emission limits of SO_2 **after** the Construction Permit modification for Clear Springs Ranch are as follows:

Unit	SO_2 Emissions (tpy)	
	2017 PTE	**2018 PTE**
Ray Nixon Power Plant		
Nixon Unit 1	n/a	0.11 lbs/MMBtu -or- 990[1]
Nixon Auxiliary Boiler	2.23	2.23
Nixon Unit 2	1.0	1.0
Nixon Unit 3	1.0	1.0
Ray Nixon Power Plant Total	**n/a**	
Front Range Power Plant		
FRPP Unit 1	10.1	10.1
FRPP Unit 2		
Front Range Power Plant Total	**10.1**	**10.1**
Solids and Handling Disposal Facility		
Four Digester Gas Boilers and two flares	**52.5**	**52.5**
Western Resources (portable screen occasionally located at Ray Nixon Power Plant)	*No SO_2 Sources at this facility	
Clear Springs Ranch Total	**1,995.0**	**1,995.0**

Note: [1] This value is estimated based on maximum design input, 100% operating hours and values provided in the application.

The emission limitation of 1,995 tons of SO_2 per year requested in the modification is a facility wide SO_2 limit and applies to all emission units at Clear Springs Ranch.

This permit action results in a decreased amount of SO_2 emissions for the year 2017 (about 40% decrease) and future years when compared to the facility 2014 actual emissions.

V. Applicable Requirements

HAP Emissions

This facility is a major source of Hazardous Air Pollutants (HAP). This facility is a major source of HAP emissions for the purpose of 40 CFR Part 63, Subpart UUUUU.

Prevention of Significant Deterioration (PSD)

This facility is located in an area designated attainment/maintenance for carbon monoxide (CO). Under that classification, all SIP approved requirements for CO will continue to apply to prevent backsliding under the provisions of Section 110(1) of the Federal Clean Air Acts.

It is categorized as a major stationary source (Potential to Emit > 100 Tons/year for CO, NO_X, SO_2, PM, and PM10). 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 > 100 TPY of any pollutant listed in Regulation No. 3, Part D, Section II.A.44) may result in the application of the PSD review requirements.

Note that this modification results in a decrease of SO_2 emissions and is not subject to PSD review requirements.

VI. New Requirements

The Division has included the following new requirements in the Construction Permit. The following requirements were not previously included in the Title V Operating Permit 95OPEP106 for the Ray Nixon Power Plant.

<u>40 CFR Part 51, Subpart BB – Data Requirements for Characterizing Air Quality for the Primary SO_2 NAAQS</u>

The Data Requirements Rule (DRR) was published in the Federal Register on August 21, 2015. The DRR was established for air agencies to characterize the air quality around large SO_2 sources that emit 2,000 tons per year or greater. Air agencies were required to identify applicable sources based on the most recently available annual SO_2 emissions data for each source. Under the DRR, states have three options to characterize the current air quality in areas with large SO_2 sources: (1) establish a federally enforceable requirement to limit SO_2 to under 2,000 tons per year by January 13, 2017, (2) conduct air quality modeling by January 13, 2017, (3) begin operating an appropriate monitoring network by January 1, 2017.

The DRR required the Division to submit a list of sources to EPA by January 15, 2016 that identifies all the applicable SO_2 sources. Colorado Springs Utilities, Ray Nixon Power Plant had emissions that exceeded 2,000 tons per year of SO_2 in 2014 and was included in the January 15, 2016 submittal to EPA. To demonstrate compliance with the DRR, the Division is establishing a facility wide, federally enforceable limitation to less than 2,000 tons per year of SO_2 for the Clear Springs Ranch point sources which will be federally enforceable by January 13, 2017.

Under Colorado Regulation No. 3, Part B, Section II.A.7 it states: “A source that is voluntarily applying for a permit to create state-only or federally enforceable permit conditions, as appropriate, to limit the potential to emit criteria, pollutants, GHG or hazardous air pollutants may request to obtain such limits in a construction permit.” Colorado Springs Utilities voluntarily requested a facility wide SO_2 emission limit for Clear Springs Ranch below 2,000 tons per year on June 10, 2016 with an application update submitted on August 22, 2016. The Division is establishing the federally enforceable limitation through issuance of this Construction Permit 10EP325.

By July 1, 2016, the Division was required to submit to EPA “a description of the planned emission limitation, including identification of the level of the limitation being planned”. This submittal included the SO_2 emission limitation for Clear Springs Ranch.

Colorado Springs Utilities, Clear Spring Ranch will be taking a federally enforceable facility-wide emission limitation for SO_2 of 1,995 tons per year. This limitation will be effective starting January 13, 2017 and thereafter. This emission limitation will result in about 40% less actual SO_2 emissions based on the 2014 actual emissions and about 64.5% less potential to emit emissions in the future.

To ensure compliance with the emission limitations, monthly and annual records of the emission rates shall be maintained by the applicant and made available to the Division for review upon request. *Note that the monthly emission limitations are only required for the first twelve (12) months of operation while the annual limit is effective for calendar year 2017 and thereafter.* Monthly limitations do not directly correspond to the annual limitation and should be considered separately; the Clear Springs Ranch cannot exceed either the monthly or annual limitations. Compliance with the monthly and annual emissions of SO_2 shall be determined by recording the facilities annual emissions for SO_2 on a rolling twelve (12) month total that will begin on January 1, 2017. After twelve (12) months of data are collected, i.e. at the end of December 2017, the twelve (12) month rolling average will be compared to the 1,995 tons per year SO_2 limit. By the end of each month thereafter a new twelve month total shall be calculated based on the previous twelve month's data.

Note that the rolling twelve month total requirement will start January 1, 2017. The calculation shall not include emissions data prior to January 1, 2017 because the emission limit does not apply to emissions prior to January 2017 and the new LSD used to comply with the new emission limit will not be operational until after January 1, 2017.

Compliance with the SO_2 emission limitation for Unit 1 at the Ray Nixon Power Plant will be monitored using the Continuous Emission Monitoring System (CEMS). The CEMS requirements are referenced in Construction Permit 10EP325, Condition 19 and are specified in the Title V Operating Permit 98OPEP106 in Section II, Condition 1.10 and 9.

The Division has determined that it is appropriate to reference the Title V Operating Permits for compliance demonstration rather than include the specific details on how other SO_2 emission units will specifically calculate actual SO_2 emissions from the Colorado Springs Utilities – Solids Handling and Disposal Facility, Colorado Springs Utilities – Front Range Power Plant, and the other SO_2 emission units at the Colorado Springs Utilities – Ray Nixon Power Plant.

Colorado Springs Utilities – Solids Handling and Disposal Facility is currently operating under Operating Permit No. 95OPEP152. The four digester boilers and the two flares have a combined annual SO_2 emission limitation of 52.5 tons per year and an hourly SO_2 emission limitation of 168.4 lbs per hour. The facility is required to determine compliance with the annual emission limitation on a rolling twelve month basis and is required to determine compliance with the hourly limitation each calendar day. Appendix G of the Operating Permit contains an Emission Compliance Calculation Procedures to calculate criteria pollutant emissions, including SO_2 from the Digester Gas and the Distillate Oil. Emissions of SO_2 from the Digester Gas are based on the volume of digester gas combusted through the boilers, the volume of digester gas combusted through the flares, and the concentration of H2S in the digester gas. Emissions of SO_2 from the Distillate Oil are based on the volume of distillate oil combusted and the percent sulfur by weight in the distillate oil. All information used and the calculations performed for the compliance demonstrations with the SO_2

emission limitation at the SHDF is required to be retained and made available to the Division review upon request.

Colorado Springs Utilities – Front Range Power Plant is currently operating under Operating Permit No. 95OPEP106. The two natural gas fired combustion turbines have a combined annual SO_2 emission limitation of 10.1 tons per year. The facility is required to determine compliance with the annual emission limitation using the monitoring method specified in 40 CFR Part 75, Appendix D on a rolling twelve month basis.

Colorado Springs Utilities – Ray Nixon Power Plant is currently operating under Operating Permit No. 95OPEP106. The Nixon Auxiliary Boiler has an annual SO_2 emission limitation of 2.23 tons per year. The facility is required to determine compliance with the annual emission limitation on a rolling twelve month total using the emission factor established from AP-42, Chapter 1.3 (No. 2 distillate fuel oil) and Chapter 1.4 (natural gas) and the monthly fuel consumption. The Nixon Unit 1 and 2 natural gas combustion turbines have a combined annual SO_2 emission limitation of 1.0 ton per year. The facility is required to determine compliance with the annual emission limitation using the monitoring method specified in 40 CFR Part 75, Appendix D on a rolling twelve month basis.

40 CFR Part 63, Subpart A – General Provisions

Since Unit 1 is subject to 40 CFR Part 63, Subpart UUUUU, Unit 1 is subject to the 40 CFR Part 63 Subpart A General Provisions. The applicable general provisions are discussed in detail in Table 9 to 40 CFR Part 63, Subpart UUUUU.

Colorado Regulation No. 6, Part B, Section VIII – Standards of Performance for Coal-Fired Electric Steam Generating Units

On October 18, 2007 mercury requirements for electric utility steam generating units were adopted by the Colorado Air Quality Control Commission (AQCC), the requirements were included in the Colorado Regulations under Colorado Regulation No. 6, Part B, Section VIII to specify mercury emission limitations for coal fired utility steam generating units. On February 19, 2015, the Division adopted revisions to the Colorado Regulation No. 6, Part B, Section VIII requirements that align the state-only mercury requirements with the federal mercury requirements for coal-fired electric steam generating units (EGUs). In 2012 EPA promulgated the Mercury and Air Toxics Standards (MATS) (40 CFR Part 63, Subpart UUUUU) which addresses mercury emission limits, work practice standards, monitoring, recordkeeping, and reporting requirements for new and existing affected coal-and oil-fired EGUs. The Commission has aligned the state-only provisions of Colorado Regulation No. 6, Part B, Section VIII with the related provisions in Subpart UUUUU. Please note that the Operating Permit 95OPEP106 contains the Colorado Regulation No. 6, Part B, Section VIII requirements prior to the February 19, 2015 adoption and the requirements that reflect the revisions from February 19, 2015 have been included in this Construction Permit.

Colorado Regulation No. 6, Part B, Section VIII is a state only mercury requirement for electric steam generating units. Unit 1 is considered an existing low emitter under Section VIII. An existing unit is defined in Section VIII.B.4 as “an Hg Budget Unit that commenced operation prior to January 1, 2007”. Unit 1 commenced operation in 1980. A low emitter is defined under Section VIII.B.10 as “an Hg budget unit with actual Hg emissions of no more

than 29 pounds per year, as determined by data collected through the required Hg monitoring pursuant to 40 CFR Part 63, Subpart UUUUU as incorporated by reference into Colorado Regulation No. 8, Part E". Unit 1 has actual Hg emissions lower than 29.0 pounds per year at the time of this permit issuance.

Low emitter status is demonstrated through the required Hg monitoring pursuant to 40 CFR Part 63, Subpart UUUUU. Low emitter units are required to comply with the Hg monitoring and recordkeeping requirements of 40 CFR Part 63, Subpart UUUUU. The owner or operator is required to submit quarterly reports to the Division demonstrating the pounds per year of Hg emitted and the operating hours of the boiler.

Operating and Maintenance (O&M) Plan

An O&M plan is required for the LSD and ACI control systems. O&M plans are required for all control equipment and control practices at major sources (Colorado Regulation No. 3, Part B, Section III.G.7.a).

Incorporation into Operating Permit

Colorado Springs Utilities is required to incorporate the requirements of this construction permit into the existing operating permit for the facility. The application to modify the operating permit in relation to Issuance #6 is due within one year of the issuance date of the of this modified construction permit. Additional information on application due dates can be found on the Division's PS Memo 09-01 "Title V Operating Permit Application Due Dates".

Please note that the application to modify the operating permit in relation to Issuance #5 of this Construction Permit which was issued on December 9, 2015 is due within one year of commencement of operation and completion of the testing period of the Lime Spray Dryer Absorber (LSD) and the Activated Carbon Injection (ACI) control devices.

VII. Existing Requirements

The Division has incorporated the following requirements into this construction permit for Unit 1. Please note the following requirements are already applicable requirements under the current Title V Operating Permit for this facility.

Title IV Acid Rain Requirements

This facility is subject to the Acid Rain Requirements of Title IV of the Clean Air Act. The Title IV permit can be found in Section III of the Title V Operating Permit 95OPEP106.

VIII. Modeling/Public Notice Requirements

When determining modeling applicability for the incorporation of the facility wide federally enforceable SO_2 emission limitation, the net emission increase in facility wide emissions of SO_2 is analyzed. Incorporation of the SO_2 emission limitation results in a decrease of SO_2 emissions from the facility and does not exceed the SO_2 or any other pollutant's modeling threshold.

This facility is voluntarily asking for a federally-enforceable SO_2 emission limitation. As per Colorado Regulation No. 3, Part B, Section III.C public notice is required for this permit

action. This Public Notice is specific to the portions of the construction permit affected by the modification.