

PM₁₀ SIP/Maintenance Plan Evaluation Report:
Bountiful City Light and Power

Salt Lake County Nonattainment Area

Utah Division of Air Quality

Major New Source Review Section

October 1, 2015

PM10 SIP/MAINTENANCE PLAN EVALUATION REPORT

Bountiful City Light and Power

1.0 Introduction

This evaluation report (report) provides Technical Support for Section IX, Part H.1 and Section IX, Part H.2 of the Utah Implementation Plan (SIP); to address the Salt Lake County PM₁₀ Nonattainment Area (SLCNA). This document specifically serves as an evaluation of the Bountiful City Light and Power operated power plant.

Note on document identification: The intention of the Utah Division of Air Quality is to develop a Maintenance Plan to address PM₁₀. As part of this effort, SIP Subsections IX.H.1 Emission Limits and Operating Practices – General Requirements, IX.H.2 Source-Specific Particulate Emission Limitations in Salt Lake and Davis Counties and IX.H.3 Source-Specific Particulate Emission Limitations for Utah County will be repealed and replaced. Subsection IX.H.4 will be repealed and replaced with Interim Emission Limits and Operating Practices. This subsection provides interim limits, consistent with the limits codified in the PM_{2.5} SIP, until future controls have been implemented within timeframes identified in Section IX Part H.2.

This evaluation report references the SIP version originally dated June 28, 1991 and made effective by EPA on August 8, 1994. This SIP version is often referred to as the “original SIP.” The Utah County portion of the SIP was further updated on June 5, 2002 and made effective by EPA on January 22, 2003. Additional SIP revisions were adopted by the Air Quality Board on July 6, 2005 and became state law on August 1, 2005. However, this version of the SIP was not adopted by EPA and therefore never became federal law. In order to distinguish between the various documents in this report, the following coding scheme will be used:

- Since Sections IX.H.1-4 of the 2005 State-only SIP will be repealed entirely, there is no need to refer to that document version within this report.
- When referencing the original SIP with an effective date of August 8, 1994 the qualifier ^(OS) will follow any citation from that document.
- In reference to the updated Utah County SIP with an effective date of January 22, 2003 the qualifier ^(UC) will follow any citation from that document.
- When referencing any new Maintenance Plan/SIP condition or requirement, the citation will be left blank.

Therefore, a particular sentence of this document might read as follows:

SIP Subsection IX.H.1.c – Stack Testing supersedes 2.a.A^(OS) from the original SIP.

1.1 Facility Identification

Name: Bountiful City Light and Power – Power Plant
Address: 253 South 200 West, Bountiful, Utah, Davis County
Owner/Operator: Bountiful City Light and Power
UTM coordinates: 425,450 East 4,526,400 North Zone 12

1.2 Facility Process Summary

Bountiful City Light and Power (BCLP) operates a power plant consisting of two 13.5 MW natural gas-fired turbines, one 5.3 MW natural gas-fired turbine, and one 250 kW natural gas-fired emergency generator. There are also three small cooling towers. The power plant is operated as a peaking and supplemental power plant to provide electrical power to municipal power customers in and around the City of Bountiful. The plant is defined as a Title V major source located in Davis County, and was included in the 1994 SIP as affecting the SLCNA.

An Approval Order (AO) for the two 13.5 MW turbines was issued in September 2010, the AO for the emergency generator was issued March 2013. Aside from the emergency generator, operation of the plant is dependent on local demand and cost of utility power.

1.3 Facility Criteria Air Pollutant Emissions Sources

As previously discussed the facility contains the following emission sources:

- 5.3 MW LoNO_x natural gas-fired turbine (GT #1)
- 13.5 MW LoNO_x natural gas-fired turbine (GT #2)
- 13.5 MW LoNO_x natural gas-fired turbine (GT #3)
- 250 kW natural gas-fired emergency generator (Em Gen)
- Cooling Tower #1
- Cooling Tower #2
- Cooling Tower #3

1.4 Facility 2011 Baseline Actual Emissions and Current PTE

In 2011, BCLP’s baseline actual emissions were determined to be the following (in tons per year):

Table 1: Actual Emissions

Pollutant	Actual Emissions (Tons/Year)
PM ₁₀	0.0894
SO ₂	0.0155
NO _x	0.3183

The current PTE values for BCLP, as established by the most recent AO issued to the source (DAQE-AN101200003-13) are as follows:

Table 2: Current Potential to Emit

Pollutant	Potential to Emit (Tons/Year)
PM ₁₀	36.9
SO ₂	6.7
NO _x	160.0

However, please see Table 3 below for further details on BCLP’s true PTE value.

2.0 Modeled Emission Values

Unlike the base year inventory, which used only the 2011 actual emissions for each source to set the baseline for modeling, a modified version of the PTE values was used for the modeled attainment demonstration. Beginning with the PTE values listed in Table 2 (from the most recent approval order issued to BCLP in 2013), these emissions were then “trued-up” by including the

expected effects from implementation of RACT from the PM_{2.5} SIP. This true-up yields a 2019 Projected Emission Value for each of the pollutants of concern. Where necessary, these values were further corrected for condensable particulates using simple correction factors based on fuel consumed or process type.

Where gaseous fuels such as natural gas were combusted, filterable-only emissions were converted to a filterable+condensable emission value by multiplying the filterable rate by 4. For natural gas, AP-42 lists the various emission factors as:

Filterable PM: 1.9 lb/106 scf
 Condensable PM: 5.7 lb/106 scf
 Total PM: 7.6 lb/106 scf

In other words, the total PM is almost exactly four times the filterable emission value. Liquid fuels, such as diesel fuel #2, were also converted using the latest AP-42 emission factors. Processes such as cooling towers, which emit largely filterable-only emissions, were not adjusted. Other processes were adjusted, as needed, on a case-by-case basis using the best data available – primarily the latest stack test information.

For BCLP, the true-up and correction results in the following modeled emission values – summarized in Table 3.

Table 3: Modeled Emission Values

Pollutant	Potential to Emit (Tons/Year)
PM ₁₀	36.9
SO ₂	6.7
NO _x	100.0

Although a specific application of new RACT is not a requirement of the maintenance plan, the limitations found within this maintenance plan are based on the December 3, 2014 PM_{2.5} Section of the SIP (IX.H.11-13). This section of the SIP required the application of RACT above and beyond the existing controls already required of most listed PM₁₀ SIP sources – including the BCLP power plant. The conditions, requirements and emission limitations contained within this maintenance plan are based on those in Sections IX.H.11-13 – which comprise the PM_{2.5} sections of the SIP, and include this additional RACT application. All requirements from the original PM₁₀ SIP that have not been superseded or replaced, and which are still necessary, will also be retained. By necessary, meaning: significant from the standpoint of PM₁₀ control, or in demonstrating that no backsliding in the application of RACT has taken place. This is discussed in greater detail in Item 3 below.

3.0 Comparison of Requirements – Original SIP and New Maintenance Plan

BCLP is a previously listed SIP source. In the original PM₁₀ SIP, BCLP was listed in Subsection IX.H.2.b.D^(OS) as Bountiful City Light and Power. As a listed source there were several requirements and conditions that applied to the facility.

In addition, BCLP is also a listed source in the PM_{2.5} Section of the SIP (see SIP Section IX.H.12.c). As was discussed above in Item 2.0, all limits in this maintenance plan are based on the limits in the December 3, 2014 PM_{2.5} SIP; either in the general requirements of subsection IX.H.11 or the source specific requirements of IX.H.12.c. Therefore, a comparison between the

original SIP requirements, and those found in this new maintenance plan can be found below:

3.1 Original SIP General Requirements

IX.H.2.a General Requirements^(OS)

The original SIP was a divided document, having two separate sets of General Requirements. The requirements found at IX.H.1.a^(OS) applied to the listed sources found in Utah County, while those found at IX.H.2.a^(OS) applied to the listed sources found in Salt Lake and Davis County. As the BCLP power plant was (and is) located in Davis County, only the general requirements of IX.H.2.a^(OS) applied.

2.a.A. Stack Testing^(OS) – this subsection covered the general methods and procedures for conducting stack testing, including the establishment of a pretest protocol, pretest conference, and the use of specific EPA test methods. This subsection has since been updated and superseded by SIP subsection IX.H.1.e which serves the same purpose.

2.a.B. Visible Emissions^(OS) – covered the establishment of designated opacity limitations for specified process units and/or process equipment. This subsection has since been superseded by SIP subsection IX.H.1.f which incorporates equivalent language.

2.a.C. Visible Emissions (cont.)^(OS) – covered the procedure by which visible emission observations would be conducted. This subsection has since been superseded by SIP subsection IX.H.1.f which incorporates equivalent language.

2.a.D. Annual Emission Limitations^(OS) – established that annual emissions would be determined on a rolling 12-month basis, and that a new 12 month emission total would be calculated on the first day of each month using the previous 12 months data. This subsection is no longer needed as the annual PM₁₀ standard no longer exists, and no source-specific annual SIP Caps appear in either IX.H.2 or IX.H.3 of the new maintenance plan.

2.a.E. Recordkeeping Requirements^(OS) – established that records need to be kept for all periods that the plant is in operation, for a period of at least two years, and provided upon request. This subsection has since been superseded by SIP subsection IX.H.1.c which incorporates equivalent language.

2.a.F. Approval Orders^(OS) – established that this subsection of the SIP superseded any previously issued AOs. No longer applicable, as this subsection of the SIP will be superseded, and no previously issued AOs are still in existence.

2.a.G. Proper Maintenance^(OS) – established that all facilities need to be adequately and properly maintained. Not needed. This is inherent in the NSR permitting program, under R307-401-4(1).

2.a.H. Future Modifications^(OS) – established that future modifications to the approved facilities were also subject to the NSR permitting requirements. Not needed. This is inherent in the NSR permitting program, under R307-401-3(1)(b).

2.a.I. Unpaved Operational Areas^(OS) – established rules for treating fugitive dust with water sprays or chemical dust suppression. This requirement has been superseded by the fugitive dust rules of R307-205 and R307-1-4.5, or the most recent federally approved fugitive dust rule.

2.a.J. Actual Emissions^(OS) – established that the actual emissions included for each listed source in subsection IX.H.2.b would not be used for compliance purposes. This subsection is no longer needed as a listing of individual source actual emissions are no longer included in the requirements of subsections IX.H.1-4 of the SIP. This requirement is outdated and obsolete.

2.a.K. Test if Directed^(OS) – established a definition of this term. No longer needed as this term is no longer used and the condition itself no longer applies. UDAQ has a minimum test frequency established under R307-165-2. This same rule also allows for (and requires) any additional testing to demonstrate compliance status as deemed necessary by the Director.

2.a.L. Definitions^(OS) – established that the definitions contained in R307 apply to subsection IX.H.2. This subsection has since been superseded by SIP subsection IX.H.1.b which incorporates equivalent language.

2.a.M. Petroleum Refineries^(OS) – This is a fairly lengthy subsection pertaining only to the petroleum refineries. This subsection has its own sub-subsections, owing to the overall length and complexity. This subsection has been replaced generally by the new maintenance plan requirements found at IX.H.1.g; however, as this source is not a petroleum refinery, this subsection does not apply.

2.a.N. Specific Fuel Requirements for Coal and/or Oil^(OS) – established that specific rules for the sulfur content of these fuels also existed and applied. This subsection has since been superseded by the individual source requirements found in IX.H.2 and IX.H.3 (see specifically the sources Kennecott and BYU). This requirement is now largely irrelevant as few sources have the ability or authority to burn coal, and the rules on the sulfur content of fuel oil have been updated with lower sulfur requirements – specifically the requirements on the sulfur content allowed in diesel fuel found under 40 CFR 80.510(c) for off-highway diesel and 40 CFR 80.520(a) for on-highway diesel. None of the listed sources have the ability to burn any other fuel oils.

3.3 Original SIP Source Specific Requirements

Individual source requirements:

2.b.D.1.^(OS) This subsection was a listing of the equipment at the power plant – this subsection has been superseded and is irrelevant. A simple listing of equipment does not constitute an emission limitation, does not impose any restriction on daily emissions, and rapidly becomes out of date as well as impossible to enforce. The original listing found in this subsection does not match the current equipment installed and operating at the plant and would represent a significant step backwards in emission control and power generating technology.

2.b.D.2.^(OS) Emissions limitations on engine #8. This subsection was unusual for the original SIP in that it not only included an emission limit on NO_x (a PM₁₀ precursor pollutant), but it also included emission limits on CO and VOC – which are not PM₁₀ precursors. This subsection is no longer relevant as engine #8 has been removed from the site and is no longer in service. It has been superseded by new maintenance plan subsection IX.H.2.b.i – which establishes limits on NO_x emissions from the remaining equipment at the site.

2.b.D.3.^(OS) Stack testing on engine #8. As with the previous condition, this subsection has been superseded and is no longer relevant. Engine #8 has been removed, so any requirement to conduct emissions testing would be superfluous. It has been replaced with new maintenance plan subsection IX.H.2.b.ii – which outlines the compliance methodology to be used in association

with the limits established in IX.H.2.b.i.

2.b.D.4.^(OS) Stack testing on engines #1-7. Another unusual condition, this subsection established a stack testing methodology on engines 1-7 to demonstrate compliance with NO_x and CO limits that did not actually appear in the original SIP. It is not known whether these limits were simply left out of the original SIP conditions by accident, or whether this condition was supposed to set these limits through an initial stack test.

This condition also limited the fuel types available for use in all “furnaces, ovens and boilers” and that fuel oil could only be used as a pilot fuel or during natural gas curtailments. As the source never had any furnaces, ovens or boilers, this condition was badly worded. The obvious intention was to limit the dual fuel engines to only operating on natural gas for steady-state operation, with fuel oil as a startup fuel except during curtailment periods.

Finally, a requirement to install and operate a CEM if total emissions of NO_x were to ever exceed 200 tpy within a given 12-month consecutive period.

However, this condition is also no longer relevant as the equipment in question (engines 1-7) has been removed and is no longer in service. The condition has not been directly superseded, although; condition IX.H.2.b.ii of the new maintenance plan is the most direct comparison. The new turbines installed at the facility are natural gas-fired only, and cannot operate on any other fuel, so no allowance for fuel switching needs to be preserved. The requirement to install and operate a CEM has been removed, as total facility emissions of NO_x on an annual basis are estimated at only 100 tpy with the removal of all the original dual-fuel engines.

2.b.D.5.^(OS) Total power generation restriction. This condition limited the total power generation from the facility. As the emissions from the original eight engines were limited only by total operation – hence total power generation, this original SIP limitation kept total emissions in check. However, this requirement is no longer necessary or valid. Total emissions from the facility are not based on the operation of the dual fueled engines as none of the original 8 engines remains in operation at the facility. Instead, the facility now operates three natural gas fired combustion turbines. At full load, the facility’s PTE has decreased from 250 tpy to a maximum of 160 tpy of NO_x (the primary pollutant of concern). Limiting total power production would unnecessarily restrict BCLP’s ability to inexpensively produce power without any net positive benefit to the environment. Therefore, this requirement has been dropped.

2.b.D.6.^(OS) Operating parameters on engine #8. This condition established several parameters for purposes of demonstrating compliance in the operating of engine #8. As with the other conditions which formerly applied to engine #8, this condition is also no longer relevant and has been dropped. The removal of engine #8 from the facility renders the usefulness of this condition highly questionable. Although the original condition has not been directly superseded, condition IX.H.2.b.iii of the new maintenance plan is similar. This new condition details startup and shutdown procedures to minimize emissions during those two periods.

Table 4 shows a comparison of the original SIP emission values, to the new maintenance plan expected emission rates. The original SIP established annual values for each of the three pollutants; however, the new maintenance plan includes only direct emission limits on NO_x. This is because the source has removed all of the original dual-fueled IC engines and replaced them with three natural gas-fired combustion turbines. As emissions of direct PM₁₀ and SO₂ are so low from this type of equipment, only the emissions of NO_x warrant specific limitations under Section IX.H.2. Therefore, the emissions for both PM₁₀ and SO₂ are estimates based on the PTE values

from BCLP's most recent permit. Emissions of NO_x include only the remaining emitting units still installed at the site; namely: the three combustion turbines, the single emergency generator, and three cooling towers.

Also worth noting is the single NO_x daily value. This value is also a derived value, as the limits from the new maintenance plan are expressed as (lbs/hr) and (grams/kW-hr). Therefore, a maximum potential emission was taken based on the highest output of the turbine and the number of hours of operation (24-hours in this case). For comparison purposes, the estimate of daily NO_x emissions from the original SIP was determined by simply dividing the annual value by 365 days. This provides a value which can be used to compare with the new maintenance plan, but serves no other useful purpose.

Table 4: Comparison Table – Old SIP Emissions vs New Maintenance Plan Emissions

All values in tons	SO ₂	SO ₂	NO _x	NO _x	PM ₁₀	PM ₁₀
	Original	New	Original	New	Original	New
Annual	5.97	6.7*	250.0	100.0*	1.06 [§]	36.9 ^{&}
Daily (24-hr)	-	-	0.685 [#]	0.264*	-	-

* includes only emissions from turbines GT #1, #2, #3 and the emergency generator

[§] filterable emissions only

[&] includes condensable emissions and particulate emissions from three cooling towers

[#] estimate of daily emissions provided for comparison purposes only

Direct comparison between the two PM10 values is somewhat problematic. The original SIP's emission value of 1.06 tpy included only filterable emissions, while the new maintenance plan takes condensable emissions into account. As was discussed in Item 2.0 above, this results in an emission value four times as large as if only filterable emissions are considered. To make a comparison only between filterable emissions, one must first subtract out the contribution from the cooling towers (emission sources which do not contribute condensable particulate). The cooling towers account for approximately 3.3 tpy of direct PM10 emissions. Dividing the remaining 33.6 tons by 4 yields the approximate contribution from the three natural gas turbines and emergency generator. If a comparison of only filterable emissions is made, the value for the new maintenance plan would then be listed as 11.7 tpy (filterable only).

However, there is a second problem to consider. When reviewing the emissions from the original SIP, it became apparent that the PM10 potential emission value was very likely in error – based on the potential NO_x emissions, comparison with similar equipment installed at other operating plants (Payson City Power, Provo City Power, Springville City Power), comparison with AP-42 emission factors, and the source's own stack testing. Although the dual-fuel engines have since been removed, the PM10 emission factor for each of the engines was 0.044 g/kW-hr; while the emission factor for NO_x for the engine with the highest number of hours used was 7.44 g/kW-hr – a ratio of 0.006. Simply multiplying the original SIP's estimate of annual NO_x emissions by this ratio would have yielded a PM10 value of 1.5 tpy. And with an average emission factor for NO_x closer to 5.0 g/kW-hr, that ratio increases to 0.009 – for an estimated annual PM10 value of 2.2 tpy. This error in estimating PM10 emissions has prevented UDAQ from issuing a Part 70 Operating Permit for BCLP as the extremely low estimate of emissions prevented BCLP from operating the dual-fuel engines at their capacity, and eventually led the source to replace the engines with new natural gas-fired turbines.

4.0 New Maintenance Plan – General Requirements

The general requirements for all listed sources are found in SIP Subsection IX.H.1. These serve as a means of consolidating all commonly used and often repeated requirements into a central location for consistency and ease of reference. As specifically stated in subsection IX.H.1.a below, these general requirements apply to all sources subsequently listed in either IX.H.2 (Salt Lake County) or IX.H.3 (Utah County), and are in addition to (and in most cases supplemental to) any source-specific requirements found within those two subsections.

IX.H.1.a. This paragraph states that the terms and conditions of Subsection IX.H.1 apply to all sources subsequently addressed in the following subsections IX.H.2 and IX.H.3. It also clarifies that should any inconsistency exist between the general requirements and the source specific requirements, then the source specific requirements take precedence.

IX.H.1.b States that the definitions found in State Rule R307-101-2, Definitions, apply to SIP Section IX.H. Since this is stated for the Section (IX.H), it applies equally to IX.H.1, IX.H.2 and IX.H.3.

IX.H.1.c This is a recordkeeping provision. Information used to determine compliance shall be recorded for all periods the source is in operation, maintained for a minimum period of five (5) years, and made available to the Director upon request. As the general recordkeeping requirement of Section IX.H, it will often be referred to and/or discussed as part of the compliance demonstration provisions for other general or source specific conditions.

IX.H.1.d Statement that emission limitations apply at all times that the source or emitting unit is in operation, unless otherwise specified in the source specific conditions listed in IX.H.2 or IX.H.3.

This is the definitive statement that emission limits apply at all times – including periods of startup or shutdown. It may be that specific sources have separate defined limits that apply during alternate operating periods (such as during startup or shutdown), and these limits will be defined in the source specific conditions of either IX.H.2 or IX.H.3.

Conditions 1.a, 1.b and 1.d are declaratory statements, and have little in the way of compliance provisions. Rather, they define the framework of the other SIP conditions. As condition 1.c is the primary recordkeeping requirement, it shall be further discussed under item 4.2 below.

IX.H.1.e This is the main stack testing condition, and outlines the specific requirements for demonstrating compliance through stack testing. Several subsections detailing Sample Location, Volumetric Flow Rate, Calculation Methodologies and Stack Test Protocols are all included – as well as those which list the specific accepted test methods for each emitted pollutant species (PM₁₀, NO_x, or SO₂). Finally, this subsection also discusses the need to test at an acceptable production rate, and that production is limited to a set ratio of the tested rate.

These stack testing requirements supersede those found in IX.H.1.a.A^{OS} and IX.H.2.a.A^{OS} of the original SIP.

IX.H.1.f This condition covers the use of CEMs and opacity monitoring. While it specifically details the rules governing the use of continuous monitors (both emission monitors and opacity monitors), it also covers visible opacity observations through the use of EPA reference method 9.

These requirements specifically supersede those found in IX.H.1.a.C^(OS) and IX.H.2.a.C^(OS) of the original SIP. The original SIP requirements of IX.H.1.a.B^(OS) and IX.H.2.a.B^(OS), both of which addressed individual equipment opacity, will be superseded as necessary by the particular source specific limitations found in IX.H.2 or IX.H.3.

Both conditions 1.e and 1.f serve as the mechanism through which sources conduct monitoring for the verification of compliance with a particular emission limitation. All conditions in these subsections are strictly in accordance with EPA approved methods and guidelines.

4.1 Monitoring, Recordkeeping and Reporting

As stated above, the general requirements IX.H.1.a through IX.H.1.f primarily serve as declaratory or clarifying conditions, and do not impose compliance provisions themselves. Rather, they outline the scope of the conditions which follow in the source specific requirements of IX.H.2 and IX.H.3.

For example, most of the conditions in those subsections include some form of short-term emission limit. This limitation also includes a compliance demonstration methodology – stack test, CEM, visible opacity reading, etc. In order to ensure consistency in compliance demonstrations and avoid unnecessary repetition, all common monitoring language has been consolidated under IX.H.1.e and IX.H.1.f. Similarly, all common recordkeeping and reporting provisions have been consolidated under IX.H.1.c.

4.2 Discussion of Attainment Demonstration

As is discussed above in Items 4.0 and 4.1, these are general conditions and have few if any specific limitations and requirements. Their inclusion here serves three purposes. 1. They act as a framework upon which the other requirements can build. 2. They demonstrate a prevention of backsliding. By establishing the same or functionally equivalent general requirements as were included in the original SIP, this demonstrates both that the original requirements have been considered, and either retained or updated/replaced as required. 3. When a general requirement has been removed, careful consideration was given as to its specific need, and whether its retention would in any way aid in the demonstration of attainment with the 24-hr standard. If no argument can be made in that regard, the requirement was simply removed.

5.0 New Maintenance Plan – BCLP Specific Requirements

The BCLP specific conditions in Section IX.H.2 address those limitations and requirements that apply only to the BCLP Power Plant in particular.

IX.H.2.b.i This condition lists the specific NO_x limitations applicable to the three combustion turbines operating at BCLP. For combustion turbine #1 (designated GT #1), that limit is expressed as 0.6 g NO_x per kW-hr. For turbines #2 and #3 (GT #2 and GT #3) the limits are 7.5 lb/hr.

The limits are differently expressed because the three turbines were installed at different times

and operated differently by the source. The two larger turbines (GT #2 and #3) are used in more of a base load capacity as high demand warrants, while the smaller turbine can be cycled on and off to deal with more rapid fluctuations in local demand.

IX.H.2.b.ii This condition establishes the stack testing frequency requirement to demonstrate compliance with the limits in IX.H.2.b.i. Each turbine shall be tested at least once per year.

As BCLP's total emissions of NO_x only reach 100 tons per year, annual stack testing is more than sufficient to demonstrate compliance. To include a requirement for installation of CEMs, such as is required on other similarly sized power plants would be excessive. That requirement includes language which activates the installation and operation of a CEM once emissions of NO_x reach a specific threshold. In this case, any reasonably selectable threshold (such as 100 tpy) is already equal to or greater than the total emissions of NO_x released by the source. In addition, this is the same testing frequency required by the original SIP.

IX.H.2.b.iii This condition outlines a turbine startup/shutdown emission minimization plan. The terms "startup" and "shutdown" are both defined, and the length of time each turbine can operate in either mode is outlined.

However, neither mode is given a separate emission limitation. The emission limits outlined in IX.H.2.b.i still apply at all times, including startup and shutdown.

5.1 Monitoring, Recordkeeping and Reporting

Monitoring for IX.H.2.b.i is specifically outlined in IX.H.2.b.ii. Stack testing for NO_x emissions is required on each turbine at a minimum of once each year. Stack testing will follow the procedures otherwise outlined in IX.H.1.e for all stack testing and reporting requirements. Recordkeeping is subject to the requirements of IX.H.1.c.

5.2 Discussion of Attainment Demonstration

Both in the original SIP and in the new maintenance plan, BCLP was primarily a source of NO_x emissions. While some direct PM₁₀ and SO₂ emissions added to the overall contribution from BCLP, it remains a listed source because of NO_x. Total emissions of NO_x have dropped from 250 tons per year in the original SIP to an estimated 100 tons in the new maintenance plan. While direct PM₁₀ emissions have increased slightly, this is due primarily to the contribution of condensable particulates, which were not included in the original SIP. Some direct PM₁₀ is also provided from the new cooling towers. Emissions of SO₂ have remained roughly equal.

6.0 Implementation Schedule

For the most part, the requirements imposed on BCLP are effective immediately. While some provision was made for sources generally to implement the RACT requirements of the PM_{2.5} SIP (and which were included as part of the modeled emission values for each source as discussed in that section above), the BCLP plant did not have any required RACT modifications. The source removed the last remaining dual-fuel engine (engine #8) in 2014, leaving only the three combustion turbines and an emergency "black start" generator at the site. The emission limits listed in IX.H.2.j can be applied immediately. Similarly, the provisions of IX.H.1.a-f (the General Requirements) can also be applied immediately.

7.0 References

Evaluation Report – BCLP Power Plant

UTAH PM₁₀ SIP

Salt Lake County Nonattainment Area

Supporting Information