Huntington Power Plant

Notice of Intent

Submitted to the Utah Division of Air Quality
And Prepared by

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1.0 Introduction

PacifiCorp Energy proposes to add new air pollution control devices that will significantly lower unit-specific emissions for particulate matter (PM_{10}), sulfur dioxide (SO_2) and nitrogen oxides (NO_X) at the Huntington Power Plant located near Huntington, in Emery County, Utah. The installation of this pollution control equipment, along with planned maintenance activities in 2010, requires an analysis of the air quality impacts of the projects and submittal of this construction permit application to the Utah Division of Air Quality. Through this Notice of Intent application, PacifiCorp Energy is seeking to:

- Obtain an Approval Order for proposed Huntington Plant projects including the installation of new pollution control devices on Unit 1.

- Establish plantwide applicability limits for nitrogen oxides (NO_X) and sulfur dioxide (SO_2). The plantwide applicability limits (PALs) will allow the facility to conduct ongoing plant maintenance while ensuring the facility remains in compliance with New Source Review requirements. The requested PALs include:

    - Establishing a NO_X PAL of 11,395.5 tons/year following completion of the Unit 1 low-NO_X project.
    - Establishing an SO_2 PAL of 5,260.2 tons/year following completion of the Unit 1 flue gas desulfurization system (SO_2 scrubber) upgrade projects.

- Obtain a lower particulate matter emission rate limit for Unit 1 following the completion of the fabric filter baghouse installation. The requested PM_{10} limit includes:
    - Establishment of a Unit 1 PM_{10} limit of 74 lb/hour following installation of the fabric filter baghouse.

- Obtain a lower NO_X emission rate limit for Unit 1. The requested NO_X limit includes:
    - Establishment of a Unit 1 NO_X limit of 1,290 lb/hour (0.26 lb/MMBtu) on a 30-day rolling average following installation of the Unit 1 low-NO_X system.

- Obtain a lower SO_2 emission rate limit for Unit 1. The requested SO_2 limit includes:
    - Establishment of a Unit 1 SO_2 limit of 595 lb/hour (0.12 lb/MMBtu) on a 30-day rolling average basis following completion of the scrubber upgrade projects.

- Because the installation of the Unit 1 low-NO_X control systems may increase emissions of carbon monoxide, and because the emissions evaluation indicates that the future potential CO emissions increase is above the PSD significance threshold of 100 tons/year, PacifiCorp requests that a CO limit be established for Huntington Unit 1. The requested limit is based on carbon monoxide emission rates utilizing good combustion control methods on Unit 1 following the low-NO_X control system installation. The requested carbon monoxide limits include:

- Establishment of a Unit 1 CO limit of 1,686 lb/hour (0.34 lb/MMBtu) on a 30-day rolling average following completion of the Unit 1 low-NO_X control project.

The planned Huntington pollution control equipment projects are identified in the following table:

Table 1.0: Huntington Pollution Control Equipment Projects

Unit 1
Replacement of the electrostatic precipitator with a fabric filter baghouse
Upgrade of the flue gas desulfurization system (scrubber) to increase sulfur dioxide removal efficiency
Installation of a low-NO_X control system

1.1 Existing Operations

PacifiCorp owns and operates the Huntington Power Plant which consists of two 480 net MW (nominal) coal-fired electric generating units designated as Unit 1 and Unit 2. Unit 1 went into commercial operation in 1973 with Unit 2 commencing operation in 1970. The Huntington Power Plant is an existing major stationary source of air emissions under both the New Source Review and Title V programs. Units 1 and 2 each have a maximum boiler heat input rate of 4,960 MMBtu/hour.

1.2 Emissions Analysis

The emission control projects proposed in this Notice of Intent permit application include the installation of a low-NO_X control system on Unit 1; an upgrade of the Unit 1 flue gas desulfurization system (scrubber); and the replacement of the existing Unit 1 electrostatic precipitator with a new fabric filter baghouse. These projects will result in an improved particulate matter removal rate, reduced SO_2 emission rate and reduced NO_X emission rate for Unit 1.

To establish a clear baseline for determining when PSD requirements may be triggered in the future, PacifiCorp is proposing to establish plantwide applicability limits for SO_2 and NO_X that would limit plantwide emissions of these pollutants at the facility to the "past actual baseline emissions" as defined by the Environmental Protection Agency's (EPA) "past actual to future actual emissions test." The plantwide applicability limits would be in addition to the new, lower unit-specific limits to be established as a result of adding the proposed air pollution control devices. Establishing plantwide limits for SO_2 and NO_X will ensure that any proposed project will not cause an associated emissions increase of these specific pollutants.

1.3 Prevention of Significant Deterioration Review

The Huntington Plant is located in an area classified as attainment for all criteria pollutants and is a listed PSD Source Category; therefore, the requirements of the federal PSD program, as administered by the Utah Division of Air Quality will apply to the projects specified in this Notice of Intent.

As a result of the PSD review described in more detail below, PacifiCorp has concluded that there will not be a "significant net emissions increase" as defined in 40 CFR Part 52 for SO_2, NO_X, PM_{10}, lead, hydrogen fluoride, sulfuric acid, or VOCs; therefore, a BACT review for these pollutants will not be required. PacifiCorp has included a BACT review for carbon monoxide.

1.4 Compliance with National Ambient Air Quality Standards for Class I and Class II Areas and NSPS

The facility, after completing the planned projects, will continue to meet all National Ambient Air Quality Standards (NAAQS) and the Class I and Class II PSD increments in the vicinity of the plant. A dispersion modeling analysis has been performed for CO, which has the potential of a significant net emissions increase. Unit 1 will continue to meet the applicable New Source Performance Standards (NSPS) defined in the federal regulations at 40 CFR 60 Subpart D.

2.0 Project Description

PacifiCorp plans to install pollution control equipment and implement other plant projects between September and December 2010 as reflected in the project timeline shown in Table 2.1. These projects are listed in Appendix A. The projects identified are based on current plans and may be refined as overhaul schedules and equipment status change. Additional information will be provided to the Utah Division of Air Quality as PacifiCorp further refines the project schedule and scope.

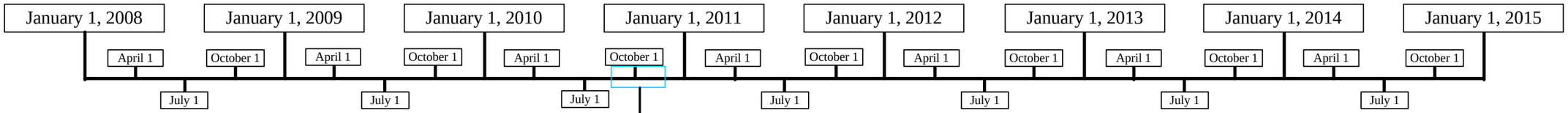
The planned Huntington Plant projects are summarized as follows:

Huntington Unit 1

- Installation of a fabric filter baghouse to replace an existing electrostatic precipitator
- Upgrade of an existing flue gas desulfurization system (SO_2 scrubber)
- Installation of a boiler low-NO_X control system
- Plant projects listed in Appendix A

Table 2.1 contained on the following page identifies the planned Huntington Power Plant project schedule from 2008 through 2014. Table 2.1 includes major plant maintenance projects as well as pollution control equipment installations.

Table 2.1: Huntington Project Schedule



2010 Huntington Unit 1 Outage: September 18 - November 22

Replace ESP with fabric filter baghouse
Install low-NO_X control system
Upgrade flue gas desulfurization system
HP/IP/LP turbine upgrade
Install submerged drag chain conveyor
Boiler economizer replacement
Boiler finishing superheater replacement
Mercury controls
Boiler rear reheater replacement
Boiler waterwall nose arch replacement
Boiler coutant slope replacement
Boiler radiant low temperature reheater replacement (50%)
Boiler superheater platens partial replacement
Boiler burner corner/transition tube replacement
Replace four boiler sootblower waterwall panels
Replace 1-7 feedwater heater
Replace 1-6 feedwater heater
Replace 1-2 feedwater heater
Replace 1-1 feedwater heater
Boiler feed pump turbine rotor replacement
Coat circulating water line

3.0 List of Potential Air Emission Points and Air Contaminants Emissions Summary

The Huntington Power Plant operates under Title V operating permit #1501001002 and has incorporated all applicable requirements contained in Approval Order DAQE-AN0238012-05 dated March 30, 2005 and Approval Order DAQE-AN0238014-06 dated August 14, 2006. The facility's Title V permit identifies the facility's emission points and potential air contaminants. The existing permitted emissions points and potential air contaminants as identified in the facility's current Title V operating permit do not change as a result of these projects.

4.0 Evaluation of Historic and Future Emission Rates

4.1 Project Description

This section presents the method for conducting various PSD evaluations, including:

- A determination of baseline actual emissions for SO_2, NO_X, PM_{10}, CO, ozone (as non-methane VOCs), fluoride (as hydrogen fluoride), lead, and sulfuric acid.
- A determination of projected actual emissions of SO_2, NO_X, PM_{10}, CO, VOCs, fluorides, lead, and sulfuric acid.
- A comparison between the CO, PM, VOCs, fluorides, lead, and sulfuric acid past actual baselines and future potential emissions to determine if PSD significance levels are triggered.

This section also sets forth the proposed plantwide applicability limits for SO_2 and NO_X.

The evaluation of historic (baseline) and future potential pollutant emission rates are contained in Appendix B of this permit application.

4.2 Baseline Actual Emissions

The pollutants of interest for this review are SO_2, NO_X, PM_{10}, CO, VOCs, fluorides, lead, and sulfuric acid.

4.2.1 Calculation of Baseline Actual Emissions

40 CFR 52.21(b)(48)(i) describes baseline actual emissions for the Huntington Power Plant as follows:

Baseline actual emissions means the rate of emissions, in tons per year, of a regulated NSR pollutant, as determined in accordance with paragraphs (b)(48)(i) through (iv) of this section.

(i) For any existing electric utility steam generating unit, baseline actual emissions means the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding when the owner or operator begins actual construction of the project. The Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

(*a*) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(*b*) The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable during the consecutive 24-month period.

(*c*) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period can be used for each regulated NSR pollutant.

(*d*) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraph (b)(48)(i)(*b*) of this section.

To identify and calculate baseline actual emissions, PacifiCorp has used data from the EPA Clean Markets Division's emissions database and annual emissions inventories. In order to comply with the EPA's acid rain program, PacifiCorp utilizes continuous emissions monitors (CEMs) to report hourly SO_2 and NO_X emissions for each unit at the Huntington facility. CEMs are also used to obtain and report the hourly heat input rates into each unit's boiler. The hourly emissions and heat input data is submitted to the EPA on a quarterly basis and is readily available on the EPA's website located at http://cfpub.epa.gov/gdm/. For purposes of this review the 5-year evaluation period is from January 2003 through December 2007. The baseline actual emissions are summarized in Table 4-1.

SO_2 Emissions

Appendix B, Table HUN-1 identifies the monthly SO_2 emissions for the relevant time period. This data was obtained from the Environmental Protection Agency's (EPA) Acid Rain Emissions database for the Unit 1 and Unit 2 stack emissions and from the Huntington Plant's annual emissions inventory for non-stack emissions. The monthly data and emissions inventory data was used to calculate the maximum past actual annual plant SO_2 emission rate of 19,141.2 tons/year.

NO_X Emissions

Appendix B, Table HUN-3 identifies the monthly NO_X emissions for the relevant time period. This data was obtained from the Environmental Protection Agency's (EPA) Acid Rain Emissions database for the Unit 1 and Unit 2 stack emissions and from the Huntington Plant's annual emissions inventory for non-stack emissions. The monthly data were used to calculate the maximum past actual Unit 1 NO_X emission rate of 6,194.8 tons/year; the Unit 2 baseline emission rate of 5,648.4 tons/year was calculated on a potential to emit basis based on the 0.26 lb/MMBtu limit which was implemented following the 2006 Unit 2 low-NO_X control projects; and emissions inventory data was used to calculate the maximum past actual non-stack emission rate of 58.6 tons/year. These individual values were used to obtain a baseline NO_X emission rate of 11,901.9 tons/year.

Particulate Matter Emissions

Appendix B, Table HUN-7 identifies the monthly PM_{10} emissions for the relevant time period. The facility PM_{10} emission rates are based on annual stack test data, in units of lb/MMBtu multiplied by the Unit-specific monthly boiler heat input values identified in the EPA's Acid Rain Emissions database to calculate the Unit 1 and Unit 2 stack emission rates. The Huntington Plant's annual emissions inventory database was used to identify the maximum non-stack emission rate. As indicated in Table HUN-7, the Huntington Plant had a maximum past actual 5-year PM_{10} emission rate of 1,759.4 tons/year.

Carbon Monoxide

Carbon monoxide emissions for Unit 1 and Unit 2 have been determined by multiplying the past annual coal consumption (Appendix B, Table HUN-6) by the AP-42 emission factor for carbon monoxide emissions from coal fired boilers. The maximum non-stack carbon monoxide emission rates were obtained from the Huntington Plant's annual emissions inventory database. The maximum past actual total Huntington CO emission rate was 784.2 tons/year. The result of the past actual CO emissions evaluation is contained in Appendix B, Table HUN-15.

Volatile Organic Compounds

Volatile organic compound emissions for Unit 1 and Unit 2 have been determined by multiplying the past annual coal consumption (Appendix B, Table HUN-6) by the AP-42 emission factor for volatile organic compounds emissions from coal fired boilers. The maximum non-stack VOC emission rates were obtained from the Huntington Plant's annual emissions inventory database. The maximum past actual total Huntington Plant VOC emission rate was 93.8 tons/year. The result of the past actual VOC emissions evaluation is contained in Appendix B, Table HUN-17.

Lead Emissions

Lead emissions have been determined from the average past annual lead concentrations in the coal burned, the average past annual coal ash concentrations, the annual particulate matter emission rates, the annual boiler heat input rates (Appendix B, Table HUN-5) and the Method specified in AP-42 for determining lead emissions from coal fired boilers. The maximum past actual total Unit 1 and Unit 2 lead emission rate was 0.13 tons/year. The result of the past actual lead emissions evaluation is contained in Appendix B, Table HUN-13.

Fluoride Emissions

Fluoride emissions, as hydrogen fluoride, have been determined from the 5-year average annual fluorine concentrations contained in coal burned at the Huntington Plant and from the past actual annual coal burn rates as indicated in Table HUN-6. The Electric Power Research Institute (EPRI) LARK-TRIPP method for the determination of hydrogen fluoride (HF) emissions was used to calculate the maximum past actual annual HF emission rate of 231.7 tons/year as indicted in Table HUN-9.

Sulfuric Acid Emissions

Sulfuric acid emissions are calculated using past actual annual coal sulfur concentrations, past actual annual heat input rates (HUN-5) and Electric Power Research Institute's *Estimating Total Sulfuric Acid Emissions from Stationary Power Plants, Technical Update, April 2007* method for calculating H_2SO_4 emissions. The maximum past actual total Unit 1 and Unit 2 sulfuric acid emission rate was 16.4 tons/year. The result of the past actual sulfuric acid emissions evaluation is contained in Appendix B, Table HUN-11.

Table 4.2 indicates the annual past actual baseline emission rates for the Huntington Plant pollutants identified above.

Table 4.2: Summary of Huntington Baseline Emissions

Huntington	SO_2 tons/year	NO_X tons/year	PM_{10} tons/year	HF tons/year	H_2SO_4 tons/year	Lead tons/year	CO tons/year	VOC tons/year
Units 1 and 2 Stack Emissions	19,135.0	11,843.2	1,465.3	231.7	16.4	0.13	759.4	91.1
Non-Stack Emissions[1]	6.2	58.6	294.1	0.0	0.0	0.00	24.8	2.7
Baseline Actual Emissions	19,141.2	11,901.9	1,759.4	231.7	16.4	0.13	784.2	93.8

4.3 Projected Actual Emissions for Prevention of Significant Deterioration Pollutants

The next step in the emission rate evaluation is to project actual emission rates for each pollutant. This is accomplished by determining the projected actual emissions based on coal quality, unit utilization, addition of pollution controls and expected emission rates.

Projected actual emissions are defined as follows:

> 40 CFR 52.21(b)(41)(i) *Projected actual emissions* means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source.
>
> (ii) In determining the projected actual emissions under paragraph (b)(41)(i) of this section (before beginning actual construction), the owner or operator of the major stationary source:
>
> (*a*) Shall consider all relevant information, including but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans under the approved State Implementation Plan; and
>
> (*b*) Shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions; and

[1] Maximum past non-stack emissions from 2002-2006 emissions inventories

(*c*) Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under paragraph (b)(48) of this section and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or

(*d*) In lieu of using the method set out in paragraphs (a)(41)(ii)(a) through (c) of this section, may elect to use the emissions unit's potential to emit, in tons per year, as defined under paragraph (b)(4) of this section.

PacifiCorp has proposed to accept plantwide applicability limits (PALs) for SO_2 and NO_X which are based on the Huntington Plant's past actual baseline emission rates. With these caps in place there is no potential that future emissions will be greater than past actual emissions, and no additional evaluation of future emissions is required.

4.3.1 Calculation Projected Annual Emissions

Under the provisions of 40 CFR 52.21(b)(41)(ii)(d) PacifiCorp has elected to determine the future emission rates of SO_2, NO_X, PM_{10}, fluoride (as HF), sulfuric acid, lead, CO and VOCs based on the facility's potential to emit these pollutants. The future annual emission rates are based on applicable pollutant emission limitations – at existing or requested future emission limits – as well as on a maximum annual boiler operating time of 8,760 hours/year, a Unit 1 boiler heat input rate of 4,960 MMBtu/hour and a Unit 2 boiler heat input rate of 4,960 MMBtu/hour. The facility's average 5-year unit-specific coal heating values, in units of Btu/lb are used to calculate the maximum annual unit-specific coal burn rates based on the unit-specific Units 1 and 2 boiler heat input rates as indicated above. Finally, where applicable, EPA AP-42 emission factors are used to calculate future potential pollutant emission rates.

Boiler Heat Input

Unit-specific boiler heat input rates are used to calculate future potential emission rates at applicable pollutant emission limitations or, where appropriate, using EPA AP-42 emission factors. Other valid emission calculation methods, such as LARK-TRIPP were used to calculate HF and H_2SO_4 emission rates. A review of the EPA's Clean Air Markets Acid Rain database was used to identify the Huntington Plant's unit-specific maximum boiler heat input rates for the 5-year evaluation period used for this construction permit application. An evaluation of the Acid Rain database indicates a maximum Unit 1 boiler heat input rate of 4,960 MMBtu/hour and a Unit 2 boiler heat input rate of 4,960 MMBtu/hour.

Coal Burn

Boiler coal burn rates are used to calculate some future potential emission rates – such as hydrogen fluoride and carbon monoxide – using appropriate AP-42 emission factors. Maximum future potential coal burn rates were calculated based on the 5-year average unit-specific coal heating content values and the unit-specific boiler heat input rates identified above. A 5-year review of Huntington's most recent (2003-2007) coal heating content data indicates that Unit 1 had an average coal heating value of 11,268.3 Btu/lb and Unit 2 had an average coal heating value of 11,263.1 Btu/lb. Maximum future annual coal burn rates can then be calculated using the average coal heating content values; the unit-specific boiler heat input rates; and a maximum annual boiler operating time of 8,760 hours/year. Using these data and appropriate conversion factors provides a maximum Unit 1 future annual coal burn rate of 1,927,958 tons/year and a maximum Unit 2 future annual coal burn rate of 1,928,844 tons/year as indicated in Table HUN-10.

Sulfur Dioxide (SO_2) Emissions

In this construction permit application PacifiCorp is requesting that a PAL be established for SO_2. The future potential SO_2 emission rate for Unit 1 of 2,607.0 tons/year; the future potential Unit 2 SO_2 emission rate of 2,607.0 tons/year; the maximum past actual non-stack emission rate of 6.2 tons/year; and the PSD significance level of 40 tons/year were used to establish the requested PAL value of 5,260.2 tons/year as indicated in Table HUN-2.

Nitrogen Oxides (NO_X) Emissions

In this construction permit application PacifiCorp is requesting that a PAL be established for NO_X. The future potential NO_X emission rate for Unit 1 of 5,648.4 tons/year; the future potential Unit 2 NO_X emission rate of 5,648.4 tons/year; the maximum past actual non-stack emission rate of 58.6 tons/year; and the PSD significance level of 40 tons/year were used to establish the requested PAL value of 11,395.5 tons/year as indicated in Table HUN-4.

Particulate Matter Emissions
Post-pollution control project PM_{10} emission limits were used to calculate the future potential Unit 1 and Unit 2 exhaust stack particulate matter emission rates.

Following installation of the Unit 1 filter baghouse, Unit 1 will have a future potential PM_{10} emission rate of 324.1 tons/year based on a requested limit of 74 lb/hour and Unit 2 will have a future potential PM_{10} emission rate of 306.6 tons/year based on an existing limit of 70 lb/hour. These unit-specific PM_{10} emission rates plus the maximum non-stack PM_{10} emission rate of 294.1 tons/year provide a future total particulate matter emission rate of 924.8 tons/year as indicated in Table HUN-8.

Carbon Monoxide Emissions
PacifiCorp is requesting that a Unit 1 carbon monoxide (CO) emission limit of 0.34 lb/MMBtu on a 30-day rolling average basis be established following installation of the low-NO_X control system on the Unit 1 boiler. A maximum future potential Unit 1 CO emission rate of 7,386.4 tons/year was calculated based on the requested emission limit of 0.34 lb/MMBtu and a boiler heat input rate of 4,960 MMBtu/hour. A maximum future potential Unit 2 CO emission rate of 482.2 tons/year was calculated based on a future potential coal burn rate of 1,928,844 tons/year and the applicable AP-42 emission factor of 0.5 lb/ton. A future potential non-stack CO emission rate has been established that is equivalent to the maximum past actual non-stack CO emission rate of 24.8 tons/year.

Summation of the unit-specific future potential CO emission rates plus the maximum non-stack CO emission rate establishes a total future potential Huntington Plant carbon monoxide emission rate of 7,893.4 tons/year as indicated in Table HUN-16.

Volatile Organic Compound Emissions
Maximum future potential volatile organic compound (VOC) emission rates were calculated based on the applicable AP-42 emission factor and on maximum future potential coal burn rates. The applicable VOC emission factor for coal-fired boilers is equivalent to 0.06 lb/ton of coal burned. The maximum future potential Unit 1 coal burn rate is equivalent to 1,927,958 tons/year and the maximum future potential Unit 2 coal burn rate is equivalent to 1,928,844 tons/year. Multiplying the 0.06 lb/ton VOC emission factor by the maximum coal burn rates establishes a maximum future potential Huntington Plant stack-only VOC emission rate of 115.7 tons/year. Adding the maximum non-stack VOC emission rate of 2.7 tons/year to the 115.7 tons/year stack emission rate established a total future potential Huntington VOC annual emission rate of 118.4 tons/year as indicated in Table HUN-18.

Lead Emissions
Maximum future potential lead emission rates were calculated based on the applicable AP-42 emission factor for coal-fired boilers and on 5-year average unit-specific data including coal lead concentrations, coal ash concentrations, post-pollution control project PM_{10} emission rates, and on future potential boiler heat input rates.

Utilizing the appropriate AP-42 emission factor from EPA Table 1.1-16 and an average Unit 1 and Unit 2 coal lead concentration of 4.74 ppm; average Unit 1 coal ash content of 14.47% and Unit 2 coal ash content of 14.51%; Unit 1 and Unit 2 PM_{10} emission rate of 0.015 lb/MMBtu; and future potential heat input rate of 43,449,600 MMBtu/year for each boiler establishes a maximum future potential lead emission rate of 83.6 lb/year for Unit 1 and 83.4 lb/year for Unit 2.

Summation of the unit-specific lead emission rates establishes a maximum future potential Huntington Plant lead emission rate of 167.1 lb/year or 0.08 tons/year as indicated in Table HUN-14.

Fluoride Emissions
Maximum future potential fluoride emission rates, as hydrogen fluoride, have been determined from the Huntington Plant's 5-year average annual coal fluoride concentrations, from the upgrade of the Unit 1 SO_2 scrubber that eliminates scrubber bypass, and from the maximum future potential unit-specific annual coal burn rates. The EPRI LARK-TRIPP method was used to calculate the maximum future potential HF emission rate of 34.0 tons/year as indicated in Table HUN-10.

Sulfuric Acid Emissions
EPRI's *Estimating Total Sulfuric Acid Emissions from Stationary Power Plants, Technical Update, April 2007* method was used to calculate the Huntington Plant's maximum future potential H_2SO_4 emission rate. Unit-specific future potential sulfuric acid emissions were calculated based on 5-year average annual coal sulfur concentrations; future potential boiler heat input values as indicated in Table HUN-10; and the elimination of bypass on the Unit 1 SO_2 scrubber. Using the EPRI calculation method and future potential heat input values and average 5-year coal sulfur concentrations provides a maximum future potential Huntington Plant H_2SO_4 emission rate of 1.6 tons/year as indicated in Table HUN-12.

Table 4.3 indicates the annual future potential emission rates for the Huntington Plant pollutants identified above.

Table 4.3: Summary of Huntington Future Potential Emissions

Huntington	SO_2[2] tons/year	NO_X[2] tons/year	PM_{10} tons/year	HF tons/year	H_2SO_4 tons/year	Lead tons/year	CO tons/year	VOC tons/year
Unit 1 and Unit 2 Stack Emissions	-	-	630.7	34.0	1.6	0.08	7,868.6	115.7
Non-Stack Emissions[3]	-	-	294.1	0.0	0.0	0.00	24.8	2.7
Future Potential Emissions	5,260.2	11,395.5	924.8	34.0	1.6	0.08	7,893.4	118.4

4.3.2 Prevention of Significant Deterioration Significance Determination

In order to determine if a Prevention of Significant Deterioration (PSD) significance level has been reached the past actual baseline emissions for each pollutant is subtracted from the projected annual emissions. If a significance level has been exceeded for a pollutant then a Prevention of Significant Deterioration review must be performed for that pollutant.

PacifiCorp is requesting that the "past actual to future potential actual" emissions test specified in the December 2002 revisions to the New Source Review rules [40 CFR 52.21] be used to establish Plantwide Applicability Limitations (PALs) for SO_2 and NO_X at the Huntington Plant. These plantwide annual emission limits will be imposed to assure, through federal enforceability, that the future Potential to Emit for the facility, as a whole, will be no greater than historical emissions. Therefore, there will be no net emissions increase of sulfur dioxide or nitrogen oxides as defined as "significant" [40 CFR 52.21(b)(23)] with respect to PSD review of these pollutants under the provisions of a PSD "major modification" [40 CFR 52.21(b)(2)(i)]. PSD review will apply to the other regulated pollutants for which there is a net increase defined as significant [40 CFR 52.21(b)(23)].

[2] Because SO_2 and NO_X emissions are being capped using plantwide applicability limitations (PALs) set at future potential (Unit 1) and future potential (Unit 2) stack emission rates, non-stack emission rates, plus the PSD significance level, the PALs become the future potential emission rates and no additional review is required.

[3] Future potential non-stack emission rates obtained from maximum past actual emissions from 2002-2006 emissions inventories

PacifiCorp requests the implementation of a NO_X Plantwide Applicability Limitation (PAL) of 11,395.5 tons/year and an SO_2 PAL of 5,260.2 tons/year following completion and commercial acceptance of the Unit 1 low-NO_X and scrubber upgrade projects.

In order to determine if a Prevention of Significant Deterioration significance level has been reached the past actual baseline emissions for each pollutant is subtracted from the projected annual emissions. If a significance level has been exceeded for a pollutant then a Prevention of Significant Deterioration review must be performed for that pollutant.

4.3.3 Contemporaneous Period and Pre-Project Actual Emissions

4.3.3.1 Definition of a "Major Modification"

An existing major source is subject to Prevention of Significant Deterioration review only if it undertakes a "major modification" [40 CFR 52.21(b)(2)(i)]. "Major modification" is defined as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under Clean Air Act" [40 CFR 52.21(b)(23)]. A major modification does not include: routine maintenance, repair and replacement [40 CFR 52.21(b)(2)(iii)(a)] or an increase in the hours of operation or in the production rate [40 CFR 52.21(b)(2)(iii)(f)].

To determine if a Prevention of Significant Deterioration significance level has been reached the baseline actual emissions are subtracted from the projected actual emissions. The results of this evaluation for each pollutant are shown in Table 4.4.

Table 4.4: Evaluation of Significance Level by Pollutant

Pollutant	Past Actual (Baseline) Emissions tons/year	Projected Actual (Future Annual) Emissions tons/year	Projected Actual minus Past Actual Emissions (Emission Increase) tons/year	PSD Review Significance Level tons/year	Is Emission Increase greater than PSD Significance Level
SO_2 (Total: stack and non-stack emissions)	19,141.2	5,220.2	-13,921.0	40	No
NO_X (Total: stack and non-stack emissions)	11,901.9	11,355.5	-546.4	40	No
PM_{10} (Total: stack and non-stack emissions)	1,759.4	924.8	-834.6	15	No
Hydrogen Fluoride (Total: stack and non-stack emissions) (HF)	231.7	34.0	-197.7	3	No
Sulfuric Acid (Total: stack and non-stack emissions) (H_2SO_4)	16.4	1.6	-14.8	7	No
Lead (Total: stack and non-stack emissions)	0.13	0.08	-0.05	0.6	No
Carbon Monoxide (Total: stack and non-stack emissions) (CO)	784.2	7,893.4	7,109.3	100	Yes
VOC (Total: stack and non-stack emissions)	93.8	118.4	24.6	40	No

4.3.3.2 Determination of Major Modification

Although the proposed projects may constitute a physical change at the plant, they will not result in significant net emissions increases of SO_2, NO_X, particulate matter, hydrogen fluoride, sulfuric acid, lead or VOCs and therefore are not major modifications for these pollutants. The results of the emissions evaluation indicate that future potential emissions of CO may increase above the PSD significance level.

4.4 Requested Emission Rate Limits

This section identifies the requested emission rate limits for Huntington Unit 1 following completion of the proposed pollution control equipment projects.

The following emission rate limits are requested for Unit 1:

Particulate matter = 10 microns (filterable):

- 74 lb/hour, annual average (4,960 MMBtu/hr x 0.015 lb/ MMBtu)

This limit will go into effect within 90 days after the Unit 1 fabric filter baghouse has been installed, tested and deemed commercial. It is expected that the Unit 1 fabric filter baghouse will be deemed commercial in April 2011.

Sulfur dioxide:

- 595 lb/hour, 30-day rolling average

This limit will go into effect within 90 days after the Unit 1 flue gas desulfurization system upgrade projects have been completed and deemed commercial. The expected commercial date is April 2011. After successful testing the equipment will be deemed commercial.

Nitrogen oxides:

- 1,290 lb/hour, 30-day rolling average

This limit will go into effect within 90 days after the low-NO_X projects have been completed and deemed commercial. The expected commercial date is April 2011. After successful testing the equipment will be deemed commercial.

Carbon monoxide:

- 1,686 lb/hour, 30-day rolling average

This limit will go into effect within 90 days after the low-NO_X burners have been installed, tested and deemed commercial. The expected installation date is April 2011. After successful testing the equipment will be deemed commercial.

Plantwide Applicability Limitations

As indicated in Section 1.0 of this application, PacifiCorp Energy is requesting that SO_2 and NO_X Plantwide Applicability Limitations (PALs) be established at the Huntington Plant following issuance of the requested construction permit.

The following federally enforceable annual plantwide emission limits are requested for SO_2 and NO_X. These limits are based on future potential Unit 1 and Unit 2 NO_X and SO_2 emission rates; maximum past actual non-stack NO_X and SO_2 emission rates; and NO_X and SO_2 PSD significance threshold values of 40 tons/year.

- Following completion and certification of the Unit 1 low-NO_X projects it is requested that a NO_X PAL be established at a rate of 11,395.5 tons/year.

- Following completion of the Unit 1 flue gas desulfurization system (SO_2 scrubber) upgrades it is requested that an SO_2 PAL be established at a rate of 5,260.2 tons/year.

The following page containing Table 4.5 summarizes the emissions data and PSD significance values used to establish the requested NO_X and SO_2 PAL values for the Huntington Power Plant.

Table 4.6 contained on page 21 provides a summary of the past actual and future potential stack emission rates for NO_X, SO_2, PM_{10}, HF, H_2SO_4, lead, CO and VOC at the Huntington Plant.

Table 4.7 contained on page 22 presents a chronology of the requested emission limits to be implemented at the Huntington Plant.

Table 4.5: Huntington Plant NO_X and SO_2 PAL Evaluation

Pollutant	Maximum Past Actual Emission Rate tons/year	Boiler Heat Input MMBtu/hour	Emission Limit lb/MMBtu	Annual Emissions tons/year	PSD Significance Level tons/year	Requested PAL tons/year	Notes
NO_X (Plant Total)	11,901.9						Maximum past actual stack and non-stack NO_X emission rate of 11,901.9 tons/year
NO_X (Unit 1)		4,960	0.26	5,648.4	40	11,395.5	PacifiCorp requests that an 11,395.5 tons/year NO_X PAL be established following completion of the Unit 1 low-NO_X control projects. The requested 11,395.5 tons/year value was set from future potential Unit 1 and Unit 2 emission rates, the maximum past actual non-stack emission rate, and the PSD significance threshold.
NO_X (Unit 2)		4,960	0.26	5,648.4			
NO_X (Non-Stack)	58.6			58.6			
SO_2 (Plant Total)	19,141.2						Maximum past actual stack and non-stack SO_2 emission rate of 19,141.2 tons/year
SO_2 (Unit 1)		4,960	0.12	2,607.0	40	5,260.2	PacifiCorp requests that a 5,260.2 tons/year SO_2 PAL be established following completion of the Unit 1 scrubber upgrade projects. The requested 5,260.2 tons/year value was set from future potential Unit 1 and Unit 2 emission rates, the maximum past actual non-stack emission rate, and the PSD significance threshold.
SO_2 (Unit 2)		4,960	0.12	2,607.0			
SO_2 (Non-Stack)	6.2			6.2			

Table 4.6: Huntington Emissions Summary – Past Actual vs. Future Potential

Pollutant/Parameter	Table Reference	Maximum Past Actual Rate		Maximum Future Potential Rate		Emission Rate Increase/Decrease		PSD Significance Level	Is PSD Triggered
SO_2	Tables HUN-1 and HUN-2	19,141.2	tons/year	5,220.2	tons/year	-13,921.0	tons/year	40 tons/year	No
NO_X	Tables HUN-3 and HUN-4	11,901.9	tons/year	11,355.5	tons/year	-546.4	tons/year	40 tons/year	No
Heat Input	Tables HUN-5 and HUN-10	65,041,937	MMBtu/year	86,899,200	MMBtu/year				
Coal Burn	Tables HUN-6 and HUN-10	3,037,478	tons/year	3,856,802	tons/year				
Particulate Matter (Stack and Non-Stack)	Tables HUN-7 and HUN-8	1,759.4	tons/year	924.8	tons/year	-834.6	tons/year	25 tons/year (15 tons/year for PM_{10})	No
Hydrogen Fluoride	Tables HUN-9 and HUN-10	231.7	tons/year	34.0	tons/year	-197.6	tons/year	3 tons/year (fluoride)	No
Sulfuric Acid	Tables HUN-11 and HUN-12	16.4	tons/year	1.6	tons/year	-14.8	tons/year	7 tons/year	No
Lead	Tables HUN-13 and HUN-14	0.13	tons/year	0.08	tons/year	-0.05	tons/year	0.6 tons/year	No
Carbon Monoxide	Tables HUN-15 and HUN-16	784.2	tons/year	7,893.4	tons/year	7,109.3	tons/year	100 tons/year	Yes
VOC	Tables HUN-17 and HUN-18	93.8	tons/year	118.4	tons/year	24.6	tons/year	40 tons/year	No
HAPs	Tables HUN-19 and HUN-20	505.0	tons/year	52.9	tons/year	-452.1	tons/year		

Note: Carbon monoxide is the only pollutant that has a post-project emission increase above its PSD significance level.

Table 4.7: Huntington Plant Emission Limit Summary

2010: Upon Certification of Pollution Control Equipment

(a) Huntington Unit 1 will be subject to a 30-day rolling average NO_X limitation of 1,290 lb/hour

(b) Huntington Unit 1 will be subject to a 30-day rolling average SO_2 limitation of 595 lb/hour

(c) Huntington Unit 1 will be subject to a CO limitation of 1,686 lb/hour on a 30-day rolling average

(d) Huntington Unit 1 will be subject to a PM_{10} limitation of 74 lb/hour within 90 days following the completion of the fabric filter baghouse installation

(e) The Huntington Plant will be subject to a NO_X PAL of 11,395.5 tons/year

(f) The Huntington Plant will be subject to an SO_2 PAL of 5,260.2 tons/year

5.0 Description of Pollution Control Equipment

5.1 Sulfur Dioxide

5.1.1 Unit 1 - Flue Gas Desulfurization (FGD)

PacifiCorp will upgrade the wet flue gas desulfurization system on Huntington Unit 1 in 2010 which will be used to control sulfur dioxide (SO_2) emissions. In this application PacifiCorp requests that a 595 lb/hour emission limit, on a 30-day rolling average basis, be implemented following completion of the FGD system upgrade projects.

5.2 Nitrogen Oxides

5.2.1 Unit 1 – Low-NO_X Burners

PacifiCorp will install a low-NO_X boiler burner system on Huntington Unit 1 in 2010 which will be used to control nitrogen oxides (NO_X) emissions. In this application PacifiCorp requests that a 1,290 lb/hour emission limit, on a 30-day rolling average basis, be implemented on Unit 1 following construction of the low-NO_X system.

5.3 Particulate Matter

5.3.1 Unit 1 – Fabric Filter Baghouse

PacifiCorp requests that a pulse jet fabric filter baghouse be installed on Unit 1 in 2010 to replace the existing electrostatic precipitator. The specification for the pulse jet fabric filter is being finalized at this time.

PacifiCorp requests that a 74 lb/hour PM_{10} limit be established on Unit 1 following completion of construction of the pulse jet fabric filter baghouse.

6.0 Best Available Control Technology Determination

The Clean Air Act's PSD program provides that a Best Available Control Technology analysis must be conducted if a proposed project will result in a significant increase of a PSD pollutant.

Applicability

PacifiCorp has determined that the projects proposed for the Huntington Power Plant may result in a significant increase (as determined by the thresholds established in the regulations) of carbon monoxide (CO). Therefore, PacifiCorp has conducted a Best Available Control Technology analysis for CO in this construction permit application.

The EPA has developed a process for conducting Best Available Control Technology analyses. This method is referred to as the "top-down" method. The steps to conducting a "top-down" analysis are listed in Environmental Protection Agency's *New Source Review Workshop Manual"* Draft, October 1990. The steps are:

- Step 1 – Identify All Control Technologies
- Step 2 – Eliminate Technically Infeasible Options
- Step 3 – Rank Remaining Control Technologies by Control Effectiveness
- Step 4 – Evaluate Most Effective Controls and Document Results
- Step 5 – Select Best Available Control Technology

Carbon Monoxide Best Available Control Technology Analysis

Combustion controls designed to reduce NO_X emissions may increase carbon monoxide by creating oxygen deficient combustions zones in the boiler. These controls are balanced to provide the maximum NO_X reduction while minimizing carbon monoxide emission increases.

Step 1 - Identify All Control Technologies

Only two control technologies have been identified for control of carbon monoxide.

- Catalytic oxidation
- Combustion controls

The catalytic oxidation is a post-combustion control device that would be applied to the combustion system exhaust, while combustion controls are part of the combustion system design of the boiler.

Step 2 - Eliminate Technically Infeasible Options

Catalytic oxidation has been used to obtain the most stringent control of carbon monoxide emissions from combustion turbines firing natural gas. This alternative, however, has never been applied to a coal-fired boiler and has not been demonstrated to be a practical technology in this application.

For sulfur-containing fuels such as coal, an oxidation catalyst will convert SO_2 to SO_3, resulting in unacceptable levels of corrosion to the flue gas system as SO_3 is converted to H_2SO_4. Generally, oxidation catalysts are designed for a maximum particulate loading of 50 milligrams per cubic meter. Huntington Unit 1 has a particulate matter loading upstream of its respective particulate matter control devices in excess of 5,000 milligrams per cubic meter. In addition, trace elements present in coal, particularly chlorine, are poisonous to oxidation catalysts. Catalysts have not been developed that have or can be applied to coal-fired boilers due to the high levels of particulate matter and trace elements present in the flue gas.

Although the catalyst could be installed downstream of the particulate matter pollution control devices (Unit 1 and Unit 2 fabric filter baghouses and wet scrubbers), the flue gas temperature at that point will be less than 300º F, which is well below the minimum temperature required (600ºF) for the operation of the oxidation catalyst. Utilization of a catalyst would require the flue gas to be reheated, resulting in significant negative energy and economic impacts.

For these reasons, as well as the low levels of CO in coal-fired units, no pulverized-coal-fired boilers have been equipped with oxidation catalysts. Use of an oxidation catalyst system is thus considered technically infeasible and this system cannot be considered to represent Best Available Control Technology for control of carbon monoxide.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Based on the Step 2 analysis, combustion control is the only remaining technology for this application.

Step 4 - Evaluate Most Effective Controls and Document Results

There are no environmental or energy costs associated with combustion controls.

Step 5 - Select Best Available Control Technology

The EPA New Source Review, RACT, BACT, LAER Clearinghouse database for comparable sources related to CO is shown in Table 6.1. The final step in the top-down Best Available Control Technology analysis process is to select Best Available Control Technology. Based on the above analysis, good combustion control for CO is chosen as Best Available Control Technology for these projects. Because there is a balance between reducing NO_X emissions with advanced combustion controls and increasing CO emissions, i.e., the lower the NO_X emissions the greater the potential for an increase in CO emissions, a 30-day rolling average emission limit of 1,686 lb/hour for CO is recommended for Huntington Unit 1.

References

U.S. Environmental Protection Agency, 2007, RACT/BACT/LAER Clearinghouse Database http://cfpub1.epa.gov/rblc/htm/bl02.cfm.

Utah Department of Administrative Services. "Title R307, Air Quality." *Utah Administrative Code*.

Table 6.1: Review of EPA RACT/BACT/LAER Clearinghouse (RBLC) for Carbon Monoxide Emission Limits

Company	Plant	Heat Input	CO Emission Limit	Averaging Time	Boiler Construction Date/Permit Date	Emission Control Description	RBLC ID
[1]MidAmerican Energy Co., Iowa	George Neal North-Neal 1 Boiler	1,363 MMBtu / hr	1.26 lb / MMBtu	3-hour average	1961 01 / 17 / 2006	Good Combustion Practices	IA-0081
[2]MidAmerican Energy Co., Iowa	Neal Energy Center South-Unit 4 Boiler	6,900 MMBtu / hr	0.42 lb / MMBtu	1 calendar day	1977 / 2001 26 / 2006	Good Combustion Practices	IA-0080
[3]Reliant Energy, Texas	Washington Parish Electric Generating Station Unit 7	6,700 MMBtu / hr	0.33 lb / MMBtu	Unknown	Unknown 01 / 04 / 2005	Combustion Control	TX-0358

[1] CO was the only pollutant with a projected increase in emissions in the change to add an over fire air system, date of determination BACT-PSD 01 / 17 / 2006
[2] CO was the only pollutant with a projected increase in emissions in the change for installation of a new low NOx burner and the addition of over fire air system, date of determination BACT-PSD 01 / 26 / 2006
[3] Case-by-case BACT PSD

7.0 Regulatory Review

The Clean Air Act's PSD program provides that a Best Available Control Technology analysis must be conducted if a proposed project will result in a significant increase

This section provides a regulatory review of the applicability of state and federal air quality permitting requirements for the addition of the emission controls and other plant projects.

State of Utah Air Permitting Requirements

The State of Utah has been granted authority to implement and enforce the federal Clean Air Act [pursuant to the State Implementation Plan review and approval process] and federal air permitting requirements which are embodied within the state rules. The plant is a major stationary source of air emissions, as defined within the Utah Administrative Code, 40 CFR 70 (Title V Operating Permits) and 40 CFR Part 52.21 (PSD Program Requirements). The Utah Department of Environmental Quality, Utah Division of Air Quality, has previously issued permits and permit revisions as appropriate for the existing Plant facilities. The general requirements for permits and permit revisions are codified under the state environmental protection regulations Utah Administrative Code R307 (Environmental Quality, Air Quality).

Notice of Intent and Approval Order (UAC R307-401)

The replacement, addition or upgrade of existing emissions controls will result in a potential increase of some air pollutant emissions, necessitating the issuance of an approval order pursuant to UAC R307-401. PacifiCorp is required by UAC R307-401 to submit to the Utah Division of Air Quality this Notice of Intent application and obtain a Utah Division of Air Quality-issued approval order prior to the initiation of construction activities associated with the proposed projects.

Operating Permit Requirements (UAC R307-415)

The federal operating permit program (Title V) is implemented by regulations codified at 40 CFR Part 70 and 71. The State of Utah has been granted authority to implement and enforce the federal Title V program through state regulations outlined under UAC R307-415. PacifiCorp currently has a Utah Division of Air Quality issued Title V Operating Permit (Permit No. 1501001002) for the Huntington Power Plant. The replacement, addition of, or upgrade to existing air emissions controls and other plant projects constitute a significant change to the plant and will therefore require a modification of the existing Title V permit.

Prevention of Significant Deterioration (UAC R307-405)

Within the federal New Source Review regulations, a subset of rules, which apply to major sources and major modifications within attainment areas, is referred to as the Prevention of Significant Deterioration program. Since the planned projects are at a current PSD source, located in an area classified as attainment for all criteria pollutants, the PSD program will apply to the permitting of these projects. The Utah Division of Air Quality has been delegated full authority from the EPA for administering the federal PSD rules; consequently, these requirements are codified within the state's permitting rules at UAC R307-405.

The PSD program defines a major stationary source as:

1. Any source type belonging to one of the 28 listed source categories that has a potential-to-emit (PTE) of 100 tons per year or more of any criteria pollutant regulated under the CAA, or

2. Any other (non-categorical) source type with a PTE of 250 tpy of any pollutant regulated under the CAA.

The Huntington facility is a fossil-fuel-fired steam electric plant of more than 250 million Btu/hr heat input and is considered an existing major stationary source because of the potential to emit for sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, volatile organic compounds, and hydrogen fluoride all exceed the limits listed in this section.

Modifications to an existing major source are considered major and subject to PSD review if the resulting net emissions increase is equal to or greater than the corresponding significant emissions increase threshold for each respective pollutant. A net emissions increase includes both of the following:

- The potential increase in emissions due to the modifications itself; and
- Contemporaneous net emissions increases and decreases of regulated air pollutants, under the PSD program

An emissions increase is considered significant if emissions meet or exceed any of the following rates:

- CO, 100 tpy
- NO_X, 40 tpy
- SO_2, 40 tpy
- PM_{10}, 15 tpy
- Particulate matter, 25 tpy
- Ozone, 40 tpy of VOCs
- Lead, 0.6 tpy

- Fluorides, 3 tpy
- Hydrogen sulfide, 10 tpy

New and Modified Sources in Non-attainment Areas and Maintenance Areas

The plant is not located in a non-attainment or maintenance area. Therefore, a non-attainment New Source Review analysis is not required.

Emissions Impact Analysis (UAC R307-410)

Because the addition of combustion control technology (Unit 1 low-NO_X burners) may result in an increase in CO emissions, the project is subject to UAC R307-410 which describes the emission impact analysis requirements in attainment areas. CO is not a hazardous air pollutant; therefore, is not subject to the hazardous air pollutant modeling requirement in R307-410-4. There may be an increase of a criteria air pollutant (CO) as a result of the project, and therefore there is a required criteria impact analysis under R307-410-3.

PacifiCorp will use a consultant to conduct an air quality modeling analysis for CO.

Monitoring and Reporting

After an approval order is received, PacifiCorp will be required to conduct monitoring, recordkeeping and reporting as specified in 40 CFR 52.21a and submit emission reports, ensure that equipment meets certain specifications, and conduct other activities as the Utah Division of Air Quality requests. Some of these requirements are enumerated below:

- Meet the reporting requirements specified in UAC R307-107-2 in the event of an unavoidable breakdown.
- Submit and retain air emission inventory and perform testing and monitoring as required in UAC R307-15.

Appendix A: Huntington Unit 1 Projects

Year	Unit	Project
2010	1	Replace ESP with fabric filter baghouse
2010	1	Install low-NO_X control system
2010	1	Upgrade flue gas desulfurization system
2010	1	HP/IP/LP turbine upgrade
2010	1	Install submerged drag chain conveyor
2010	1	Boiler economizer replacement
2010	1	Boiler finishing superheater replacement
2010	1	Mercury controls
2010	1	Boiler rear reheater replacement
2010	1	Boiler waterwall nose arch replacement
2010	1	Boiler coutant slope replacement
2010	1	Boiler radiant low temperature reheater replacement (50% replacement)
2010	1	Boiler superheater platens partial replacement
2010	1	Boiler burner corner/transition tube replacement
2010	1	Replace four boiler sootblower waterwall panels
2010	1	Replace 1-7 feedwater heater
2010	1	Replace 1-6 feedwater heater
2010	1	Replace 1-2 feedwater heater
2010	1	Replace 1-1 feedwater heater
2010	1	Boiler feed pump turbine rotor replacement
2010	1	Coat circulating water line

Appendix B: Emissions Calculations

This appendix contains maximum past actual and future potential annual emission rates for SO_2, NO_X, PM_{10}, HF, H_2SO_4, lead, CO, VOCs and Hazardous Air Pollutants (HAPs). Appendix B also contains maximum past actual and future potential boiler heat input rates and coal burn rates for the Huntington boilers for use in applicable pollutant emission rate calculations.

Huntington Emissions Summary

Past Actual vs. Future Potential Emissions Evaluation

Pollutant/Parameter	Table Reference	Maximum Past Actual Rate		Maximum Future Potential Rate		Emission Rate Increase/Decrease		PSD Significance Level	Is PSD Triggered
SO_2	Tables HUN-1 and HUN-2	19,141.2	tons/year	5,220.2	tons/year	-13,921.0	tons/year	40 tons/year	No
NO_X	Tables HUN-3 and HUN-4	11,901.9	tons/year	11,355.5	tons/year	-546.4	tons/year	40 tons/year	No
Heat Input	Tables HUN-5 and HUN-10	65,041,937	MMBtu/year	86,899,200	MMBtu/year				
Coal Burn	Tables HUN-6 and HUN-10	3,037,478	tons/year	3,856,802	tons/year				
Particulate Matter (Stack and Non-Stack)	Tables HUN-7 and HUN-8	1,759.4	tons/year	924.8	tons/year	-834.6	tons/year	25 tons/year (15 tons/year for PM_{10})	No
Hydrogen Fluoride	Tables HUN-9 and HUN-10	231.7	tons/year	34.0	tons/year	-197.6	tons/year	3 tons/year (fluoride)	No
Sulfuric Acid	Tables HUN-11 and HUN-12	16.4	tons/year	1.6	tons/year	-14.8	tons/year	7 tons/year	No
Lead	Tables HUN-13 and HUN-14	0.13	tons/year	0.08	tons/year	-0.05	tons/year	0.6 tons/year	No
Carbon Monoxide	Tables HUN-15 and HUN-16	784.2	tons/year	7,893.4	tons/year	7,109.3	tons/year	100 tons/year	Yes
VOC	Tables HUN-17 and HUN-18	93.8	tons/year	118.4	tons/year	24.6	tons/year	40 tons/year	No
HAPs	Tables HUN-19 and HUN-20	505.0	tons/year	52.9	tons/year	-452.1	tons/year		

Note: Carbon monoxide is the only pollutant that has a post-project emission increase above its PSD significance level.

Permit Assumption Timeline:

2010: Upon Certification of Pollution Control Equipment

(a) Huntington Unit 1 will be subject to a 30-day rolling average NO_X limitation of 1,290 lb/hour

(b) Huntington Unit 1 will be subject to a 30-day rolling average SO_2 limitation of 595 lb/hour

(c) Huntington Unit 1 will be subject to a CO limitation of 1,686 lb/hour on a 30-day rolling average

(d) Huntington Unit 1 will be subject to a PM_{10} limitation of 74 lb/hour within 90 days following the completion of the fabric filter baghouse installation

(e) The Huntington Plant will be subject to a NO_X PAL of 11,395.5 tons/year

(f) The Huntington Plant will be subject to an SO_2 PAL of 5,260.2 tons/year

Table HUN - 0

Huntington Past Actual Non-Stack Emissions Evaluation

PM (TSP) Emissions (tons/year)	Source ID	3	4	5	6	8	10a	10b	12	13	14	17	18	19	32	33	41	Total Annual Non-Stack PM Emissions (tons/year)	
Year																			Year
2002		85.5	132.5	44.3	35.6		4.1	148.6	0.0	0.0	0.1	8.5	0.0	0.0	0.0	0.0	0.5	459.9	2002
2003		85.5	133.0	42.0	44.2		36.2	152.5	0.0	0.0	0.1	8.1	3.1	0.0	0.0	0.0	0.5	505.4	2003
2004		85.5	130.2	40.0	43.8		37.6	151.2	0.0	0.0	0.1	7.7	8.4	0.0	0.0	0.0	25.7	530.4	2004
2005		96.2	128.3	40.5	43.8		85.1	156.1	0.0	0.0	0.0	7.8	8.4	0.0	0.0	0.0	47.8	614.2	2005
2006		96.2	224.1	45.7	36.0		95.3	162.4	0.0	0.0	0.1	8.8	6.9	0.1	0.0	0.0	87.7	763.4	2006

Maximum Past Actual Non-Stack PM Emissions (tons/year)
763.4

PM_{10} Emissions (tons/year)	Source ID	3	4	5	6	8	10a	10b	12	13	14	17	18	19	32	33	41	Total Annual Non-Stack PM_{10} Emissions (tons/year)	
Year																			Year
2002		33.5	27.0	44.3	35.6		1.5	29.0	0.0	0.0	0.1	8.5	0.0	0.0	0.0	0.0	0.1	179.7	2002
2003		33.5	27.2	42.0	44.2		10.7	29.8	0.0	0.0	0.1	8.1	3.1	0.0	0.0	0.0	0.1	198.8	2003
2004		33.5	26.3	40.0	43.8		11.0	29.5	0.0	0.0	0.1	7.7	8.4	0.0	0.0	0.0	4.9	205.4	2004
2005		37.6	25.8	40.5	43.8		33.6	30.5	0.0	0.0	0.0	7.8	8.4	0.0	0.0	0.0	13.9	242.0	2005
2006		37.6	64.6	45.7	36.0		37.1	31.7	0.0	0.0	0.1	8.8	6.9	0.1	0.0	0.0	25.4	294.1	2006

Maximum Past Actual Non-Stack PM_{10} Emissions (tons/year)
294.1

SO_2 Emissions (tons/year)	Source ID	3	4	5	6	8	10a	10b	12	13	14	17	18	19	32	33	41	Total Annual Non-Stack SO_2 Emissions (tons/year)	
Year																			Year
2002									0.0	0.0	0.1						0.0	0.2	2002
2003									0.0	0.0	0.1						0.0	0.2	2003
2004									0.0	0.0	0.1						0.6	0.8	2004
2005									0.0	0.0	0.0						0.7	0.8	2005
2006									0.0	0.0	0.1						6.2	6.2	2006

Maximum Past Actual Non-Stack SO_2 Emissions (tons/year)
6.2

NO_X Emissions (tons/year)	Source ID	3	4	5	6	8	10a	10b	12	13	14	17	18	19	32	33	41	Total Annual Non-Stack NO_X Emissions (tons/year)	
Year																			Year
2002									0.7	0.7	1.9						0.1	3.5	2002
2003									0.7	0.7	1.9						0.1	3.5	2003
2004									0.7	0.7	1.9						6.0	9.5	2004
2005									0.5	0.4	0.5						6.6	7.9	2005
2006									0.6	0.4	1.1						56.5	58.6	2006

Maximum Past Actual Non-Stack NO_X Emissions (tons/year)
58.6

VOC Emissions (tons/year)	Source ID	3	4	5	6	8	10a	10b	12	13	14	17	18	19	32	33	41	Total Annual Non-Stack VOC Emissions (tons/year)	
Year																			Year
2002									0.0	0.0	0.2						0.0	0.2	2002
2003									0.0	0.0	0.2						0.0	0.2	2003
2004									0.0	0.0	0.2						0.3	0.5	2004
2005									0.0	0.0	0.0						0.3	0.4	2005
2006									0.0	0.0	0.1						2.6	2.7	2006

Maximum Past Actual Non-Stack VOC Emissions (tons/year)
2.7

Table HUN - 0 (continued)

Huntington Past Actual Non-Stack Emissions Evaluation

CO Emissions (tons/year)	Source ID	3	4	5	6	8	10a	10b	12	13	14	17	18	19	32	33	41	Total Annual Non-Stack CO Emissions (tons/year)	
Year																			Year
2002									0.2	0.2	0.4						0.0	0.8	2002
2003									0.2	0.2	0.4						0.0	0.8	2003
2004									0.2	0.2	0.4						0.3	1.0	2004
2005									0.1	0.1	0.1						2.8	3.1	2005
2006									0.1	0.1	0.2						24.3	24.8	2006

Maximum Past Actual Non-Stack CO Emissions (tons/year)
24.8

Source ID Description

3	Ash Landfill
4	Coal Storage
5	Unit #1 Cooling Tower
6	Unit #2 Cooling Tower
8	Coal Conveyors
10a	Ash Haul Road (dirt)
10b	Ash Haul Road (paved)
12	Unit #1 Emergency Generator (diesel engine)
13	Unit #2 Emergency Generator (diesel engine)
14	Emergency Fire Pump (diesel engine)
17	Coal Silo System Exhauster for Unit #1
18	Coal Silo System Exhauster for Unit #2
19	Lime Silo Bin Vent
32	Ash Unloader for Unit #1
33	Ash Unloader for Unit #2
41	Coal Handling and Blending Equipment

Note: Non-stack emission rates were obtained from 2002 through 2006 annual emission inventories.

Table HUN - 1

Huntington Past Actual SO_2 Emissions Evaluation

Past Actual Monthly SO_2 Emissions from CEMs/Clean Air Markets (tons/month)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04
Huntington 1	218.9	166.7	190.6	246.1	177.0	248.7	232.6	256.0	214.0	214.8	224.5	246.4	240.4	190.6	261.4	143.4	224.5	220.6	220.2	69.6	163.4	187.9
Huntington 2	1,228.9	1,016.7	1,420.0	1,329.0	1,159.0	1,258.0	1,314.0	1,343.4	1,189.9	1,593.8	1,317.2	1,479.6	1,091.7	1,100.6	1,156.0	985.7	1,284.4	1,151.6	1,097.0	1,199.1	1,181.0	1,219.3
Huntington Totals	1,447.9	1,183.4	1,610.6	1,575.1	1,335.9	1,506.8	1,546.6	1,599.4	1,404.0	1,808.7	1,541.7	1,725.9	1,332.1	1,291.2	1,417.4	1,129.1	1,508.9	1,372.1	1,317.2	1,268.7	1,344.4	1,407.2

Past Actual Annual SO_2 Emission Rate Based on Rolling 24-Month Period (tons/year)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04
Huntington 1	This is based on a 24-month rolling average so there are no valid averages until December 2004																					
Huntington 2	This is based on a 24-month rolling average so there are no valid averages until December 2004																					
Huntington Totals																						

Table HUN - 1 (continued)

Huntington Past Actual SO_2 Emissions Evaluation

Past Actual Monthly SO_2 Emissions from CEMs/Clean Air Markets (tons/month)

Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06
197.0	227.4	215.1	162.5	198.4	164.6	165.1	181.5	194.1	219.5	127.8	90.9	234.3	269.6	211.9	250.4	195.6	221.2	224.4	194.9	263.5	373.3	256.7
1,515.8	1,398.4	1,387.5	1,288.4	1,169.4	1,163.4	1,014.1	1,037.3	1,108.7	1,168.7	1,378.5	1,684.0	1,318.1	1,421.4	1,248.9	1,650.2	1,489.4	1,070.9	1,345.9	1,329.8	2,171.9	2,574.9	1,045.3
1,712.8	1,625.9	1,602.6	1,450.9	1,367.8	1,328.0	1,179.1	1,218.8	1,302.8	1,388.1	1,506.3	1,774.9	1,552.4	1,690.9	1,460.8	1,900.6	1,685.0	1,292.1	1,570.3	1,524.6	2,435.4	2,948.2	1,302.0

Past Actual Annual SO_2 Emission Rate Based on Rolling 24-Month Period (tons/year)

Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06
	2,491	2,490	2,487.4	2,491.3	2,450.5	2,444.6	2,411.0	2,391.7	2,373.5	2,330.3	2,268.4	2,273.3	2,284.9	2,270.6	2,300.5	2,267.6	2,306.4	2,306.3	2,293.5	2,315.2	2,467.0	2,513.7
	15,015	15,094	15,230.2	15,105.0	15,022.2	14,949.7	14,839.3	14,736.7	14,649.3	14,743.6	14,788.7	14,789.1	14,760.0	14,838.6	15,113.5	15,280.2	15,322.8	15,353.5	15,442.6	15,980.1	16,668.0	16,600.2
	17,506	17,584	17,717.6	17,596.2	17,472.7	17,394.3	17,250.3	17,128.4	17,022.8	17,073.9	17,057.1	17,062.4	17,044.9	17,109.3	17,414.0	17,547.7	17,629.2	17,659.9	17,736.1	18,295.2	19,135.0	19,113.8

Table HUN - 1 (continued)

Huntington Past Actual SO_2 Emissions Evaluation

Past Actual Monthly SO_2 Emissions from CEMs/Clean Air Markets (tons/month)

Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
175.5	244.3	268.0	286.2	266.6	243.2	248.7	208.9	196.2	262.0	232.7	294.6	227.1	162.3	272.4
	387.4	201.2	210.4	97.6	74.1	87.4	130.5	112.8	151.5	127.1	133.6	119.6	103.5	101.8
175.5	631.7	469.2	496.6	364.2	317.3	336.1	339.4	309.0	413.5	359.9	428.2	346.7	265.8	374.2

Past Actual Annual SO_2 Emission Rate Based on Rolling 24-Month Period (tons/year)

Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07		
2,507.5	2,531.1	2,551.4	2,587.0	2,639.0	2,661.4	2,703.5	2,725.4	2,732.7	2,766.7	2,773.3	2,856.7	2,924.8	2,888.8	2,890.2	**2,924.8** tons/year	**Maximum Past Actual Unit 1 SO_2 Emission Rate**
15,990.5	15,426.3	14,827.7	14,239.1	13,643.7	13,096.1	12,558.0	12,116.2	11,654.0	11,175.4	10,654.6	10,032.2	9,250.0	8,642.6	7,982.9	**16,668.0** tons/year	**Maximum Past Actual Unit 2 SO_2 Emission Rate**
18,498.0	17,957.4	17,379.1	16,826.1	16,282.7	15,757.5	15,261.5	14,841.7	14,386.7	13,942.1	13,427.9	12,888.9	12,174.8	11,531.4	10,873.1	**19,135.0** tons/year	**Maximum Past Actual Stack SO_2 Emission Rate**

Maximum Past Actual Non-Stack SO_2 Emissions

Emissions Source	Maximum Past Actual Non-Stack Emission Rate (tons/year)
Unit #1 Emergency Generator (diesel engine)	0.0
Unit #2 Emergency Generator (diesel engine)	0.0
Emergency Fire Pump (diesel engine)	0.1
Coal Handling and Blending Equipment	6.2
Total Maximum Non-Stack SO_2 Emission Rate (tons/year)	6.2

Total Maximum Past Actual SO_2 Emission Rate Stack and Non-Stack Emissions (tons/year)	19,141.2

Table HUN - 2

Huntington Future Potential Sulfur Dioxide Emission Evaluation

Step 1: Calculate future potential Unit 1 and Unit 2 SO_2 emissions based on post-scrubber project emission limits

	Maximum Boiler Heat Input (MMBtu/hour)	Post-Project Sulfur Dioxide Emission Limit (lb/MMBtu)	Maximum Annual Boiler Operational Time (hours/year)	Post-Project Annual Sulfur Dioxide Emission Rate (tons/year)
Huntington Unit 1	4,960	0.12	8,760	2,607.0
Huntington Unit 2	4,960	0.12	8,760	2,607.0
Huntington Total (post-project Units 1 and 2 SO_2 emission rate):				5,214.0

Step 2: Identify the maximum past actual non-stack SO_2 emission rate

Maximum non-stack SO_2 emission rate =	6.2	tons/year

Step 3: Establish Plantwide Applicability Limit (PAL)

The PAL is equivalent to the sum of the future potential Unit 1 stack SO_2 emission rate, the future potential Unit 2 stack emission rate, the non-stack SO_2 emission rate and the PSD significance threshold

Unit 1 Future Potential SO_2 Emission Rate:	2,607.0 tons/year
Unit 2 Future Potential SO_2 Emission Rate:	2,607.0 tons/year
Maximum Non-Stack SO_2 Emission Rate:	6.2 tons/year
PSD Significance Level:	40.0 tons/year
Requested SO_2 PAL Value:	5,260.2 tons/year

Step 4: Calculate Uncontrolled SO_2 Emission Rate

	SO_2 Emission Factor (lb/ton)	Reference	Sulfur Concentration (percent)	Reference	Annual Coal Burn Rate (tons/year)	Annual Uncontrolled SO_2 Emission Rate (lb/year)
Huntington Unit 1	38S	AP-42 Table 1.1-3	0.68	2006 Emissions	1,927,958	49,818,447
Huntington Unit 2	38S	AP-42 Table 1.1-4	0.69	2006 Emissions	1,928,844	50,574,287
Total:						100,392,734 lbs/year

Total Future Potential Uncontrolled SO_2 Emission Rate:	50,196.4 tons/year

Table HUN - 3

Huntington Baseline NO_X Emissions Evaluation

Past Actual Monthly NO_X Emissions from CEMs/Clean Air Markets (tons/month)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04
Huntington 1	533.8	373.4	419.5	564.0	424.4	501.9	546.8	515.4	483.7	455.1	460.4	489.2	493.9	418.6	575.8	308.7	499.2	449.7	466.4	154.9	355.1	438.8
Huntington 2	510.0	414.4	546.5	538.7	488.1	543.2	509.6	522.2	524.3	562.6	461.1	535.3	401.8	442.9	487.9	423.2	538.3	458.3	437.9	496.1	501.5	506.7
Huntington Totals	1,043.9	787.8	966.0	1,102.7	912.5	1,045.0	1,056.4	1,037.6	1,008.1	1,017.7	921.5	1,024.5	895.7	861.4	1,063.6	731.9	1,037.5	908.0	904.3	651.0	856.7	945.5

Past Actual Annual NO_X Emission Rate Based on Rolling 24-Month Period (tons/year)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04
Huntington 1	This is based on a 24-month rolling average so there are no valid averages until December 2004																					
Huntington 2	This is based on a 24-month rolling average so there are no valid averages until December 2004																					
Huntington Totals																						

Table HUN - 3 (continued)

Huntington Baseline NO_X Emissions Evaluation

Past Actual Monthly NO_X Emissions from CEMs/Clean Air Markets (tons/month)

Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06
402.7	461.4	441.3	320.7	417.7	358.0	416.6	408.4	366.6	432.7	232.5	117.1	554.0	594.5	528.7	467.1	485.6	498.3	508.3	530.1	486.8	521.2	449.0
491.7	458.7	515.7	442.3	416.9	464.1	411.6	357.8	387.4	403.0	441.6	610.1	540.9	515.6	542.5	539.0	574.7	379.4	535.6	523.2	618.2	579.7	263.4
894.3	920.1	957.1	763.0	834.6	822.1	828.1	766.2	754.0	835.6	674.1	727.2	1,095.0	1,110.1	1,071.2	1,006.1	1,060.3	877.7	1,043.8	1,053.4	1,105.0	1,100.9	712.4

Past Actual Annual NO_X Emission Rate Based on Rolling 24-Month Period (tons/year)

Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06
	5,396	5,350	5,323.7	5,322.8	5,219.8	5,215.9	5,169.1	5,079.1	5,037.7	4,912.1	4,743.1	4,789.9	4,842.6	4,860.0	4,884.3	4,839.2	4,934.0	4,938.6	4,978.8	4,989.0	5,172.2	5,219.1
	5,901	5,903	5,917.4	5,852.6	5,815.3	5,777.0	5,684.4	5,623.2	5,563.6	5,522.2	5,545.9	5,585.9	5,576.0	5,646.3	5,694.4	5,737.8	5,715.9	5,714.6	5,747.0	5,837.2	5,879.0	5,759.9
	11,297	11,253	11,241.0	11,175.4	11,035.1	10,992.9	10,853.5	10,702.3	10,601.3	10,434.3	10,289.1	10,375.8	10,418.6	10,506.4	10,578.7	10,577.1	10,650.0	10,653.2	10,725.8	10,826.2	11,051.1	10,979.0

Table HUN - 3 (continued)

Huntington Baseline NO_X Emissions Evaluation

Past Actual Monthly NO_X Emissions from CEMs/Clean Air Markets (tons/month)

Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
571.2	553.4	544.1	545.3	504.9	553.9	475.7	463.9	465.6	558.9	485.7	522.5	520.8	341.5	535.0
	105.7	325.2	384.6	363.0	334.7	354.4	390.2	349.6	404.9	351.6	365.7	386.2	363.4	352.3
571.2	659.1	869.2	929.9	867.9	888.6	830.1	854.1	815.2	963.9	837.3	888.2	907.0	704.9	887.3

Past Actual Annual NO_X Emission Rate Based on Rolling 24-Month Period (tons/year)

Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
5,285.3	5,360.7	5,402.0	5,454.0	5,546.1	5,614.2	5,673.1	5,696.8	5,725.4	5,821.5	5,848.0	5,993.0	6,194.8	6,088.6	6,058.8
5,506.5	5,313.5	5,246.8	5,181.2	5,141.6	5,100.4	5,045.6	5,034.8	5,030.8	5,039.5	5,013.9	4,975.9	4,864.0	4,775.3	4,693.6
10,791.8	10,674.2	10,648.8	10,635.2	10,687.7	10,714.6	10,718.6	10,731.6	10,756.1	10,861.0	10,861.9	10,969.0	11,058.9	10,863.8	10,752.4

6,194.8 tons/year — Maximum Past Actual Unit 1 NO_X Emission Rate

Maximum Past Actual Non-Stack NO_X Emissions

Emissions Source	Maximum Past Actual Non-Stack Emission Rate (tons/year)
Unit #1 Emergency Generator (diesel engine)	0.6
Unit #2 Emergency Generator (diesel engine)	0.4
Emergency Fire Pump (diesel engine)	1.1
Coal Handling and Blending Equipment	56.5
Total Maximum Non-Stack NO_X Emission Rate	58.6

Total Maximum Past Actual NO_X Emission Rate Stack and Non-Stack Emissions (tons/year)	58.6

Unit 1 Baseline Emissions: 6,194.8 tons/year

Unit 2 Baseline Emissions (potential to emit basis): 5,648.4 tons/year

Unit 2 NO_X Limit: 0.26 lb/MMBtu

Unit 2 Heat Input Rate: 4,960 MMBtu/hour

Total Baseline Emission Rate:

Unit 1	6,194.8	tons/year (Unit 1 maximum past actual rate)
Unit 2	5,648.4	tons/year (Unit 2 future potential rate)
Non-Stack	58.6	tons/year (non-stack maximum past actual rate)
Total Baseline NO_X Emission Rate:	11,901.9	tons/year

Note: The 24-month evaluation period runs from November 2005 through October 2007
The Unit 1 baseline emission rate which occurred in October 2007 is equivalent to 6,194.8 tons/year
Because the intstallation of the Unit 2 low-NO_X burner project occurred in October 2006, the Unit 2 baseline emission rate is calculated on a potential-to-emit basis based on the post-project NO_X emission limit of 0.26 lb/MMBtu

Table HUN - 4

Huntington Future Potential Nitrogen Oxides Emission Evaluation

Step 1: Calculate future potential Unit 1 and Unit 2 NO_X emissions based on post-low-NO_X project emission limits

	Maximum Boiler Heat Input (MMBtu/hour)	Post-Project Nitrogen Oxides Emission Limit (lb/MMBtu)	Maximum Annual Boiler Operational Time (hours/year)	Post-Project Annual Nitrogen Oxides Emission Rate (tons/year)
Huntington Unit 1	4,960	0.26	8,760	5,648.4
Huntington Unit 2	4,960	0.26	8,760	5,648.4
Huntington Total (post-project Units 1 and 2 NO_X emission rate):				11,296.9

Step 2: Identify the maximum past actual non-stack NO_X emission rate

Maximum non-stack NO_X emission rate =	58.6	tons/year

Step 3: Establish Plantwide Applicability Limit (PAL)

The PAL is equivalent to the sum of the future potential Unit 1 stack NO_X emission rate, the future potential Unit 2 stack emission rate, the non-stack NO_X emission rate and the PSD significance threshold

Unit 1 Future Potential NO_X Emission Rate:	5,648.4	tons/year
Unit 2 Future Potential NO_X Emission Rate:	5,648.4	tons/year
Maximum Non-Stack NO_X Emission Rate:	58.6	tons/year
PSD Significance Level:	40.0	tons/year
Requested NO_X PAL Value:	11,395.5	tons/year

Step 3: Calculate Uncontrolled NO_X Emission Rate

	NO_X Emission Factor (lb/ton)	Reference	Annual Coal Burn Rate (tons/year)	Annual Uncontrolled NO_X Emission Rate (lb/year)
Huntington Unit 1	12	AP-42 Table 1.1-3 NSPS	1,927,958	23,135,502
Huntington Unit 2	22	AP-42 Table 1.1-3 Pre-NSPS	1,928,844	42,434,566
Total:				65,570,067 lbs/year

Total Future Potential Uncontrolled NO_X Emission Rate:	32,785.0 tons/year

Table HUN - 5
Huntington Past Actual Heat Input Evaluation

Past Actual Monthly Heat Input from CEMs/Clean Air Markets (MMBtu/month)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04
Huntington 1	2,954,824	2,056,039	2,277,974	3,106,440	2,503,186	3,069,277	3,167,021	3,123,325	2,951,095	2,688,765	2,833,188	2,953,885	2,804,914	2,261,618	3,112,590	1,748,847	3,015,588	2,737,265	2,926,453	997,597	2,076,807
Huntington 2	2,879,451	2,291,742	2,883,852	2,939,674	2,778,207	2,891,690	3,015,058	3,036,619	2,899,235	3,079,067	2,653,957	2,917,478	2,129,755	2,260,068	2,500,506	2,248,101	2,936,730	2,517,022	2,466,693	2,677,412	2,810,698
Huntington Totals	5,834,275	4,347,781	5,161,826	6,046,114	5,281,393	5,960,967	6,182,079	6,159,944	5,850,330	5,767,832	5,487,145	5,871,363	4,934,669	4,521,686	5,613,096	3,996,948	5,952,318	5,254,287	5,393,146	3,675,009	4,887,505

Past Actual Annual Heat Input Rate Based on Rolling 24-Month Period (MMBtu/year)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04
Huntington 1	This is based on a 24-month rolling average so there are no valid averages until December 2004																				
Huntington 2	This is based on a 24-month rolling average so there are no valid averages until December 2004																				
Huntington Totals																					

Table HUN - 5 (continued)
Huntington Past Actual Heat Input Evaluation

Past Actual Monthly Heat Input from CEMs/Clean Air Markets (MMBtu/month)

Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06
2,708,048	2,480,285	2,916,727	2,834,986	1,963,940	2,832,478	2,581,761	2,867,611	2,836,077	2,721,462	2,998,720	1,561,226	605,448	2,731,188	3,052,797	2,940,327	2,404,432	2,667,748	2,689,960	2,708,359	2,804,964	2,667,953	2,885,032
2,821,573	2,952,531	2,545,312	2,767,589	2,677,861	2,721,441	3,175,297	2,824,823	2,399,866	2,566,681	2,511,477	2,695,703	2,971,399	2,657,240	2,545,445	2,809,793	2,673,695	2,959,120	1,894,599	2,605,710	2,615,698	3,172,000	3,128,943
5,529,621	5,432,816	5,462,039	5,602,575	4,641,801	5,553,919	5,757,058	5,692,434	5,235,943	5,288,143	5,510,197	4,256,929	3,576,847	5,388,428	5,598,242	5,750,120	5,078,127	5,626,868	4,584,559	5,314,069	5,420,662	5,839,953	6,013,975

Past Actual Annual Heat Input Rate Based on Rolling 24-Month Period (MMBtu/year)

Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06
		31,735,879	31,675,960	31,629,911	31,907,163	31,644,823	31,827,036	31,710,436	31,487,656	31,425,354	30,730,419	29,688,761	29,637,761	29,687,217	29,754,923	29,826,330	29,603,909	30,074,466	29,920,851	29,954,701	29,825,451	30,769,168
		32,566,216	32,510,285	32,703,344	32,622,139	32,739,950	32,763,258	32,517,346	32,293,158	32,030,587	31,928,821	31,874,987	31,876,628	31,690,612	32,030,631	32,237,444	32,466,751	32,290,000	32,124,490	32,173,828	32,526,482	32,752,247
		64,302,095	64,186,245	64,333,255	64,529,301	64,384,773	64,590,294	64,227,782	63,780,814	63,455,940	62,659,240	61,563,747	61,514,389	61,377,828	61,785,554	62,063,774	62,070,660	62,364,466	62,045,341	62,128,529	62,351,932	63,521,415

Table HUN - 5 (continued)
Huntington Past Actual Heat Input Evaluation

Past Actual Monthly Heat Input from CEMs/Clean Air Markets (MMBtu/month)

Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
2,464,156	3,037,682	2,818,032	2,841,127	3,093,099	2,754,448	3,033,873	2,522,339	2,566,222	2,601,631	3,020,095	2,623,301	2,795,469	2,738,460	1,929,959	2,917,128
1,486,000		717,579	2,691,806	3,362,296	3,168,776	2,901,943	2,866,821	3,374,299	3,079,349	3,409,612	2,991,383	3,026,241	3,274,429	3,275,282	3,072,703
3,950,156	3,037,682	3,535,611	5,532,933	6,455,395	5,923,224	5,935,816	5,389,160	5,940,521	5,680,980	6,429,707	5,614,684	5,821,710	6,012,889	5,205,241	5,989,831

Past Actual Annual Heat Input Rate Based on Rolling 24-Month Period (MMBtu/year)

Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
30,962,843	31,127,660	31,296,533	31,258,733	31,387,790	31,783,044	31,883,741	31,854,030	31,703,336	31,586,113	31,735,429	31,547,720	32,164,841	33,231,347	32,830,733	32,762,898
32,089,898	30,679,112	29,561,636	29,634,883	29,932,236	30,177,694	30,267,945	30,113,707	30,388,445	30,728,186	31,149,652	31,389,605	31,554,874	31,706,389	32,015,410	32,279,039
63,052,741	61,806,771	60,858,169	60,893,616	61,320,026	61,960,737	62,151,686	61,967,737	62,091,780	62,314,299	62,885,081	62,937,324	63,719,715	64,937,736	64,846,142	65,041,937

33,231,347 MMBtu/year Maximum Past Actual Unit 1 Heat Input

32,763,258 MMBtu/year Maximum Past Actual Unit 2 Heat Input

Maximum 12 month ave based on 24-month period 65,041,937 MMBtu/year Past Actual Heat Input

Table HUN - 6
Past Actual Coal Burn Evaluation

Past Actual Monthly Coal Burn (tons/month)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04
Huntington 1	138,581	92,959	102,522	131,317	104,427	139,388	138,642	141,779	133,398	121,670	128,900	140,613	120,561	94,379	144,864	76,733	144,874	127,896	137,443	48,566	93,618
Huntington 2	127,413	105,717	131,314	132,508	123,791	137,340	141,041	139,560	131,881	139,977	129,621	151,801	93,692	105,588	124,630	115,547	151,434	127,936	116,010	137,933	136,678
Huntington Totals	265,994	198,676	233,835	263,825	228,219	276,728	279,682	281,340	265,279	261,647	258,520	292,413	214,253	199,967	269,494	192,281	296,309	255,832	253,453	186,498	230,296

Past Actual Annual Coal Burn Rate Based on Rolling 24-Month Period (tons/year)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04
Huntington 1	This is based on a 24-month rolling average so there are no valid averages until December 2004																				
Huntington 2	This is based on a 24-month rolling average so there are no valid averages until December 2004																				
Huntington Totals																					

Table HUN - 6 (continued)
Past Actual Coal Burn Evaluation

Past Actual Monthly Coal Burn (tons/month)

Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06
126,536	118,830	142,223	133,206	92,028	136,505	127,968	140,232	139,022	133,255	144,049	72,697	27,120	133,266	145,961	127,519	107,757	118,895	136,321	125,467	127,570	111,793	124,231
133,216	139,396	120,177	127,091	124,779	125,170	145,097	128,510	109,425	119,350	114,331	120,167	135,551	122,960	115,179	119,122	116,135	127,648	82,048	120,475	120,128	127,603	119,138
259,752	258,226	262,400	260,297	216,807	261,674	273,065	268,742	248,448	252,605	258,380	192,864	162,671	256,225	261,140	246,642	223,891	246,543	218,370	245,942	247,699	239,395	243,369

Past Actual Annual Coal Burn Rate Based on Rolling 24-Month Period (tons/year)

Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06
		1,445,358	1,442,671	1,442,205	1,459,197	1,457,522	1,475,425	1,475,242	1,472,549	1,473,683	1,443,333	1,396,058	1,398,241	1,400,915	1,404,394	1,411,083	1,398,099	1,427,893	1,418,189	1,418,027	1,405,201	1,443,034
		1,547,101	1,546,940	1,556,471	1,553,399	1,559,694	1,562,053	1,548,096	1,537,250	1,524,636	1,518,779	1,516,566	1,513,235	1,494,924	1,507,640	1,512,913	1,514,422	1,497,673	1,482,193	1,478,289	1,484,085	1,474,688
		2,992,460	2,989,611	2,998,677	3,012,596	3,017,216	3,037,478	3,023,338	3,009,799	2,998,319	2,962,112	2,912,624	2,911,476	2,895,840	2,912,034	2,923,996	2,912,521	2,925,565	2,900,382	2,896,315	2,889,287	2,917,722

Table HUN - 6 (continued)
Past Actual Coal Burn Evaluation

Past Actual Monthly Coal Burn (tons/month)

Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
103,060	139,680	150,226	142,784	138,104	128,291	143,832	117,885	118,467	122,054	136,315	113,713	123,511	132,041	92,085	139,683
59,441	0	34,374	136,118	144,959	134,430	129,148	128,870	151,088	138,541	143,240	128,135	132,187	149,539	145,803	139,238
162,500	139,680	184,600	278,902	283,063	262,721	272,980	246,755	269,555	260,595	279,554	241,848	255,699	281,580	237,888	278,920

Past Actual Annual Coal Burn Rate Based on Rolling 24-Month Period (tons/year)

Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
1,447,755	1,454,327	1,470,025	1,470,305	1,472,754	1,490,886	1,494,549	1,489,508	1,478,625	1,470,141	1,471,671	1,456,503	1,481,910	1,534,371	1,513,781	1,510,642
1,436,069	1,369,461	1,316,950	1,324,920	1,333,854	1,338,680	1,340,669	1,332,556	1,343,845	1,358,403	1,370,347	1,377,250	1,383,259	1,390,253	1,401,675	1,413,704
2,883,824	2,823,788	2,786,975	2,795,226	2,806,609	2,829,566	2,835,218	2,822,064	2,822,470	2,828,544	2,842,019	2,833,753	2,865,170	2,924,624	2,915,456	2,924,346

Maximum 12 month ave based on 24-month period 3,037,478 tons/year Past Actual Coal Burn

Table HUN - 7
Huntington Past Actual Particulate Matter Emission Evaluation

Past Actual Monthly Heat Input from CEMs/Clean Air Markets (MMBtu/month)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05
Huntington 1	2,954,824	2,056,039	2,277,974	3,106,440	2,503,186	3,069,277	3,167,021	3,123,325	2,951,095	2,688,765	2,833,188	2,953,885	2,804,914	2,261,618	3,112,590	1,748,847	3,015,588	2,737,265	2,926,453	997,597	2,076,807	2,708,048	2,480,285	2,916,727	2,834,986	1,963,940
Huntington 2	2,879,451	2,291,742	2,883,852	2,939,674	2,778,207	2,891,690	3,015,058	3,036,619	2,899,235	3,079,067	2,653,957	2,917,478	2,129,755	2,260,068	2,500,506	2,248,101	2,936,730	2,517,022	2,466,693	2,677,412	2,810,698	2,821,573	2,952,531	2,545,312	2,767,589	2,677,861
Huntington Totals	5,834,275	4,347,781	5,161,826	6,046,114	5,281,393	5,960,967	6,182,079	6,159,944	5,850,330	5,767,832	5,487,145	5,871,363	4,934,669	4,521,686	5,613,096	3,996,948	5,952,318	5,254,287	5,393,146	3,675,009	4,887,505	5,529,621	5,432,816	5,462,039	5,602,575	4,641,801

Past Actual Monthly Particulate Matter Emission Rate from Annual Stack Testing (lb/MMBtu)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05
Huntington 1	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.008	0.008	0.008	0.008
Huntington 2	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078

Monthly Particulate Matter Emission Rate (obtained by multiplying monthly heat input times particulate matter emission rate) tons/month

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05
Huntington 1	25.1	17.5	19.4	26.4	21.3	26.1	26.9	26.5	25.1	13.4	14.2	14.8	14.0	11.3	15.6	8.7	15.1	13.7	14.6	5.0	10.4	13.5	9.9	11.7	11.3	7.9
Huntington 2	111.9	89.0	112.0	114.2	107.9	112.3	117.1	118.0	112.6	119.6	103.1	113.3	82.7	87.8	97.1	87.3	114.1	97.8	95.8	104.0	109.2	109.6	114.7	98.9	107.5	104.0
Huntington Totals	137.0	106.5	131.4	140.6	129.2	138.4	144.1	144.5	137.7	133.1	117.3	128.1	96.8	99.1	112.7	96.1	129.2	111.5	110.5	109.0	119.6	123.2	124.6	110.6	118.9	111.9

Past Actual Annual Particulate Matter Emission Rate Based on Rolling 24-Month Period (tons/year)

UNIT NAME	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05
Huntington 1	This is based on a 24-month rolling average so there are no valid averages until December 2004																							200.1	193.2	188.4
Huntington 2	This is based on a 24-month rolling average so there are no valid averages until December 2004																							1,265.2	1,263.0	1,270.5
Huntington Totals																								1,465.3	1,456.2	1,458.9

Table HUN - 7 (continued)
Huntington Past Actual Particulate Matter Emission Evaluation

Past Actual Monthly Heat Input from CEMs/Clean Air Markets (MMBtu/month)

UNIT NAME	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07
Huntington 1	2,832,478	2,581,761	2,867,611	2,836,077	2,721,462	2,998,720	1,561,226	605,448	2,731,188	3,052,797	2,940,327	2,404,432	2,667,748	2,689,960	2,708,359	2,804,964	2,667,953	2,885,032	2,464,156	3,037,682	2,818,032	2,841,127	3,093,099	2,754,448	3,033,873	2,522,339	2,566,222	2,601,631
Huntington 2	2,721,441	3,175,297	2,824,823	2,399,866	2,566,681	2,511,477	2,695,703	2,971,399	2,657,240	2,545,445	2,809,793	2,673,695	2,959,120	1,894,599	2,605,710	2,615,698	3,172,000	3,128,943	1,486,000		717,579	2,691,806	3,362,296	3,168,776	2,901,943	2,866,821	3,374,299	3,079,349
Huntington Totals	5,553,919	5,757,058	5,692,434	5,235,943	5,288,143	5,510,197	4,256,929	3,576,847	5,388,428	5,598,242	5,750,120	5,078,127	5,626,868	4,584,559	5,314,069	5,420,662	5,839,953	6,013,975	3,950,156	3,037,682	3,535,611	5,532,933	6,455,395	5,923,224	5,935,816	5,389,160	5,940,521	5,680,980

Past Actual Monthly Particulate Matter Emission Rate from Annual Stack Testing (lb/MMBtu)

UNIT NAME	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07
Huntington 1	0.008	0.008	0.008	0.008	0.008	0.008	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022
Huntington 2	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.004	0.004	0.004	0.004	0.004

Monthly Particulate Matter Emission Rate (obtained by multiplying monthly heat input times particulate matter emission rate) tons/month

UNIT NAME	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07
Huntington 1	11.3	10.3	11.5	11.3	10.9	12.0	10.1	3.9	17.8	19.8	19.1	15.6	17.3	17.5	17.6	18.2	17.3	18.8	16.0	33.4	31.0	31.3	34.0	30.3	33.4	27.7	28.2	28.6
Huntington 2	105.7	123.4	109.7	93.2	99.7	97.6	104.7	115.4	103.2	98.9	109.2	103.9	115.0	73.6	101.2	101.6	123.2	121.6	57.7	0.0	27.9	104.6	130.6	6.3	5.8	5.7	6.7	6.2
Huntington Totals	117.1	133.7	121.2	104.6	110.6	109.6	114.9	119.4	121.0	118.7	128.3	119.5	132.3	91.1	118.8	119.9	140.6	140.3	73.7	33.4	58.9	135.8	164.6	36.6	39.2	33.5	35.0	34.8

Past Actual Annual Particulate Matter Emission Rate Based on Rolling 24-Month Period (tons/year)

UNIT NAME	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07
Huntington 1	184.4	176.3	171.4	164.1	156.1	148.8	141.3	136.6	138.3	140.9	143.4	145.6	146.5	150.8	152.1	154.4	155.7	162.6	165.4	175.4	185.9	195.7	207.0	218.3	229.3	238.0	246.4	255.0
Huntington 2	1,267.4	1,271.9	1,272.9	1,263.3	1,254.6	1,244.4	1,240.4	1,238.3	1,238.4	1,231.2	1,244.4	1,252.4	1,261.3	1,254.5	1,248.0	1,250.0	1,263.7	1,272.4	1,246.7	1,191.9	1,148.5	1,151.3	1,162.9	1,114.0	1,064.1	1,005.2	953.7	910.2
Huntington Totals	1,451.8	1,448.3	1,444.3	1,427.4	1,410.6	1,393.2	1,381.7	1,374.9	1,376.8	1,372.1	1,387.8	1,398.0	1,407.8	1,405.3	1,400.1	1,404.3	1,419.4	1,435.0	1,412.1	1,367.3	1,334.4	1,347.0	1,369.9	1,332.3	1,293.3	1,243.2	1,200.1	1,165.2

Table HUN - 7 (continued)
Huntington Past Actual Particulate Matter Emission Evaluation

Past Actual Monthly Heat Input from CEMs/Clean Air Markets (MMBtu/month)

Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
3,020,095	2,623,301	2,795,469	2,738,460	1,929,959	2,917,128
3,409,612	2,991,383	3,026,241	3,274,429	3,275,282	3,072,703
6,429,707	5,614,684	5,821,710	6,012,889	5,205,241	5,989,831

Past Actual Monthly Particulate Matter Emission Rate from Annual Stack Testing (lb/MMBtu)

Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
0.022	0.022	0.022	0.032	0.032	0.032
0.004	0.004	0.004	0.004	0.004	0.004

Monthly Particulate Matter Emission Rate (obtained by multiplying monthly heat input times particulate matter emission rate) tons/month

Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
33.2	28.9	30.8	43.8	30.9	46.7
6.8	6.0	6.1	6.5	6.6	6.1
40.0	34.8	36.8	50.4	37.4	52.8

Past Actual Annual Particulate Matter Emission Rate Based on Rolling 24-Month Period (tons/year)

Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	
266.2	274.6	284.9	304.9	311.4	324.8	**324.8** tons/year Past Actual Unit 1 Particulate Matter Emission Rate
863.8	818.0	768.6	714.2	665.8	619.5	**1,272.9** tons/year Past Actual Unit 2 Particulate Matter Emission Rate
1,129.9	1,092.6	1,053.5	1,019.0	977.3	944.3	

Maximum 12 month ave based on 24-month period **1,465.3** **tons/year Past Actual Stack PM_{10} Emission Rate**

Maximum Past Actual Non-Stack PM_{10} Emissions

Emissions Source	Maximum Past Actual Non-Stack PM_{10} Emission Rate (tons/year)
Ash Landfill	37.6
Coal Storage	64.6
Unit #1 Cooling Tower	45.7
Unit #2 Cooling Tower	36.0
Coal Conveyors	
Ash Haul Road (dirt)	37.1
Ash Haul Road (paved)	31.7
Unit #1 Emergency Generator (diesel engine)	0.0
Unit #2 Emergency Generator (diesel engine)	0.0
Emergency Fire Pump (diesel engine)	0.1
Coal Silo System Exhauster for Unit #1	8.8
Coal Silo System Exhauster for Unit #2	6.9
Lime Silo Bin Vent	0.1
Ash Unloader for Unit #1	0.0
Ash Unloader for Unit #2	0.0
Coal Handling and Blending Equipment	25.4
Total Maximum Non-Stack PM_{10} Emission Rate (tons/year)	294.1

Total Maximum Past Actual PM_{10} Emission Rate Stack and Non-Stack Emissions (tons/year)	1,759.4	(Past actual stack emission rate of 1,465.3 tons/year plus non-stack emission rate of 294.1 tons/year)

Table HUN - 8

Huntington Future Potential Particulate Matter Emission Evaluation

	Maximum Boiler Heat Input (I) (MMBtu/hour)	Post-Project Particulate Matter Emission Limit* (lb/hour)	Post-Project Particulate Matter Emission Limit (lb/hour)	Maximum Annual Boiler Operational Time (hours/year)	Future Potential Annual Particulate Matter Emission Rate (tons/year)
Huntington Unit 1	4,960	0.02	74[a]	8,760	324.1
Huntington Unit 2	4,960	0.02	70[b]	8,760	306.6
Non-Stack	NA	NA	NA	NA	294.1
Huntington Total (post-project PM_{10} rate):					924.8

[a] Unit 1 Particulate Matter Emission Limit Following Installation of Unit 1 Fabric Filter Baghouse

[b] Unit 2 Particulate Matter Emission Limit

Calculate Uncontrolled PM_{10} Emission Rate

	PM_{10} Emission Factor (lb/ton)	Reference	Coal Ash Concentration (percent)	Reference	Annual Coal Burn Rate (tons/year)	Annual Uncontrolled PM_{10} Emission Rate (lb/year)
Huntington Unit 1	2.3A	AP-42 Table 1.1-4	14.75	2006 Emissions Inventory	1,927,958	65,405,991
Huntington Unit 2	2.3S	AP-42 Table 1.1-4	15.02	2006 Emissions Inventory	1,928,844	66,633,841
Non-Stack Emissions						588,151
Total:						132,627,983 lbs/year

Total Future Potential Uncontrolled PM_{10} Emission Rate:	66,314.0 tons/year

Table HUN - 9

Huntington Past Actual Hydrogen Fluoride Emission Evaluation

$M_{HF} = F_{comb} \times 2000 \text{ lb/ton} \times C_{HF} \times 1/10^6 \times F_{acid}$

Where:

Mfg_{HF} = Manufacture of Hydrogen Fluoride, lb/year

F_{comb} = Coal combustion, tons/year

F_{comb} = 1,475,425 tons/year (Unit 1)

F_{comb} = 1,562,053 tons/year (Unit 2)

Note: Maximum annual coal burn rates from May 2005; Table HUN - 6

C_{HF} = 139.69 Average Unit 1 fluoride concentration in coal, ppm (FGD scrubber, 6.5% bypass)

C_{HF} = 139.69 Average Unit 2 fluoride concentration in coal, ppm (no FGD scrubber)

F_{Bypass} = 0.07 Unit 1

F_{Bypass} = 0.00 Unit 2

F_{acid} = M_{HF}/M_F Acid conversion factor: ratio of molecular weights, compound/parent chemical

M_F = 18.9984 Molecular weight of fluorine

M_{HF} = 20.0063 Molecular weight of hydrogen fluoride

F_{acid} = 1.053054

AR = Annual release of hydrogen fluoride, lb/year

EF_{FGD} = 6% HF emission factor for FGD systems

$EF_{No\ FGD}$ = 90% HF emission factor without FGD

$AR = Mfg * (EF/100)$

$AR_{FGD\ Removal} = (1.0 - F_{Bypass}) \times E_{FGD} \times M_{HF}$

$AR_{Bypass} = F_{Bypass} \times EF_{NoFGD} \times M_{HF}$

$AR_{Total} = AR_{FGD\ Removal} + AR_{Bypass}$

Table HUN - 9 (continued)

Huntington Past Actual Hydrogen Fluoride Emission Evaluation

Historical Coal Fluoride Concentrations (Parts Per Million)

	2002	2003	2004	2005	2006	Average 2002-2006 Fluoride Concentration ppm
Huntington 1	98.07	98.07	127.00	223.33	152.00	139.69
Huntington 2	98.07	98.07	127.00	223.33	152.00	139.69

Mfg_{HF} = (Coal, tons/year)*(2000 lb/ton)*(C_{HF} ppm)*($1/10^6$) F_{acid}

Mfg_{HF} Unit 1 = 434,083.1 lbs/year

Mfg_{HF} Unit 2 = 459,570.0 lbs/year

Unit 1 (scrubber with 6.5% bypass)

$AR_{FGD\ Removal}$ = (1.0 - F_{Bypass}) x EF_{FGD} x Mfg_{HF}

$AR_{FGD\ Removal}$ = (1.0 - 0.065)*(0.06)*(434,083) lbs

$AR_{FGD\ Removal}$ = 24,352 lbs/year

AR_{Bypass} = F_{Bypass} x EF_{NoFGD} x Mfg

AR_{Bypass} = (0.065)*(0.90)*(434,083) lbs

AR_{Bypass} = 25,394 lbs/year

AR_{Total} = $AR_{FGD\ Removal}$ + AR_{Bypass}

AR_{Total} = 49,746 lbs/year (Unit 1)

Unit 2 (no scrubber)

AR = Mfg_{HF} Unit 2 * (EF/100)

AR = 413,613.0 lbs/year (Unit 2)

Table HUN - 9 (continued)

Huntington Past Actual Hydrogen Fluoride Emission Evaluation

Maximum Past Actual Hydrogen Fluoride Emissions

Huntington Unit 1	49,745.9	lbs/year
Huntington Unit 2	413,613.0	lbs/year
Total Past HF Rate:	463,358.9	lbs/year
	231.7	tons/year

Calculation Method:

EPRI LARK-TRIPP *Calculation and Methods for Threshold Determination and Release Estimates*

HF Emission Factor with FGD System: 6%

Bituminous Coal Emission Factor: 90%

(Table 5-1 Emission Factors for HCL and HF)

Table HUN - 10

Huntington Future Potential Coal Burn and Hydrogen Fluoride Emission Evaluation

	Annual Average Coal Heating Value (Btu/lb)					Average Coal Heating Value (Btu/lb)
	2002	2003	2004	2005	2006	
Huntington Unit	11,337.0	11,564.4	11,180.3	11,045.2	11,214.5	11,268.3
Huntington Unit	11,300.0	11,560.4	11,179.0	11,050.9	11,225.3	11,263.1

Maximum Potential Annual Coal Burn Rate

	Maximum Boiler Heat Input (MMBtu/hour)	Maximum Annual Heat Input at 8760 hours/year* (MMBtu/year)	Average 2002-2006 Coal Heating Value (Btu/lb)	Maximum Potential Annual Coal Burn* (tons/year)
Huntington Unit	4,960	43,449,600	11,268.3	1,927,958
Huntington Unit	4,960	43,449,600	11,263.1	1,928,844
Totals		86,899,200		3,856,802

* Maximum potential annual heat input and coal burn rates used in future potential H_2SO_4, lead and HF emission calculations

Table HUN - 10 (continued)

Huntington Future Potential Coal Burn and Hydrogen Fluoride Emission Evaluation

$M_{HF} = F_{comb} \times 2000 \text{ lb/ton} \times C_{HF} \times 1/10^6 \times F_{acid}$

Where:	Mfg_{HF} =		Manufacture of Hydrogen Fluoride, lb/year
	F_{comb} =		Coal combustion, tons/year
	F_{comb} =	1,927,958	tons/year (Unit 1 future potential coal burn rate)
	F_{comb} =	1,928,844	tons/year (Unit 2 future potential coal burn rate)
	C_{HF} =	139.69	Average Unit 1 fluoride concentration in coal, ppm (FGD scrubber, no bypass)
	C_{HF} =	139.69	Average Unit 2 fluoride concentration in coal, ppm (FGD scrubber, no bypass)
	F_{Bypass} =	0.00	Unit 1
	F_{Bypass} =	0.00	Unit 2
	F_{acid} =	M_{HF}/M_F	Acid conversion factor: ratio of molecular weights, compound/parent chemical
	M_F =	18.9984	Molecular weight of fluorine
	M_{HF} =	20.0063	Molecular weight of hydrogen fluoride
	F_{acid} =	1.05305393	
	AR =		Annual release of hydrogen fluoride, lb/year
	EF_{FGD} =	6%	HF emission factor for FGD systems
	$EF_{No\ FGD}$ =	90%	HF emission factor without FGD

$AR = Mfg * (EF/100)$

$AR_{FGD\ Removal} = (1.0 - F_{Bypass}) \times E_{FGD} \times M_{HF}$

$AR_{Bypass} = F_{Bypass} \times EF_{NoFGD} \times M_{HF}$

$AR_{Total} = AR_{FGD\ Removal} + AR_{Bypass}$

Table HUN - 10 (continued)

Huntington Future Potential Coal Burn and Hydrogen Fluoride Emission Evaluation

Historical Coal Fluoride Concentrations (Parts Per Million)

	2002	2003	2004	2005	2006	Average 2002-2006 Fluoride Concentration ppm
Huntington 1	98.07	98.07	127.00	223.33	152.00	139.69
Huntington 2	98.07	98.07	127.00	223.33	152.00	139.69

Mfg_{HF} = (Coal, tons/year)*(2000 lb/ton)*(C_{HF} ppm)*($1/10^6$) F_{acid}

Mfg_{HF} Unit 1 = 567,222.6 lbs/year

Mfg_{HF} Unit 2 = 567,483.1 lbs/year

$AR_{FGD\ Removal}$ = (1.0 - F_{Bypass}) x EF_{FGD} x Mfg_{HF}

$AR_{FGD\ Removal}$ Unit 1 = (1.0 - 0.0) x (0.06) x (567,222.6) lbs/year

$AR_{FGD\ Removal}$ = 34,033.4 lbs/year

AR_{Bypass} = 0.0 lbs/year

AR_{Total} = $AR_{FGD\ Removal}$ + AR_{Bypass}

AR_{Total} = 34,033.4 Unit 1 lbs/year

$AR_{FGD\ Removal}$ Unit 2 = (1.0 - 0.0) x (0.06) x (567,483.1)

$AR_{FGD\ Removal}$ = 34,049.0 lbs/year

AR_{Bypass} = 0.0 lbs/year

AR_{Total} = $AR_{FGD\ Removal}$ + AR_{Bypass}

AR_{Total} = 34,049.0 Unit 2 lbs/year

Table HUN - 10 (continued)

Huntington Future Potential Coal Burn and Hydrogen Fluoride Emission Evaluation

Maximum Future Potential Hydrogen Fluoride Emissions

Huntington Unit 1	34,033.4	lbs/year
Huntington Unit 2	34,049.0	lbs/year
Total Future Potential HF Rate	68,082.3	lbs/year
	34.0	tons/year

Calculation Method:

EPRI LARK-TRIPP *Calculation and Methods for Threshold Determination and Release Estimates*

HF Emission Factor with FGD System: 6%

Bituminous Coal Emission Factor: 90%

(Table 5-1 Emission Factors for HCL and HF)

Table HUN - 11

Huntington Past Actual Sulfuric Acid Emission Evaluation

Sulfuric Acid Mist Manufactured from Combustion (EPRI LARK-TRIPP method used to calculate sulfuric acid emission rate)

$EM_{Comb} = K*F1*E2$

Where:	EM_{Comb} =	total H_2SO_4 manufactured from combustion, lbs/year
	K =	molecular weight and units conversion constant = (98.07)/(64.04) * 2000
		98.07 = Molecular weight of H_2SO_4
		64.04 = Molecular weight of SO_2
	K =	3,063
	F1 =	Fuel Impact Factor
	F1 =	0.00111 (Western Bituminous coal)
	E2 =	SO_2 mass rate, tons/year

E2 = K1 * K2 * C1 * S1

Where:	K1 =	molecular weight and units conversion constant = (64.04)/(100*32.06)
		64.04 = Molecular weight of SO_2
		32.06 = Molecular weight of S
		100 = conversion of % S to fraction
	K1 =	0.02
	K2 =	Sulfur conversion to SO_2; implicit from EPA AP-42
	K2 =	0.95 (Bituminous coal)
	C1 =	Coal burn, tons/year
	C1 =	1,475,425 tons/year (Unit 1 max from HUN-6; May 2005)
	C1 =	1,562,053 tons/year (Unit 2 max from HUN-6; May 2005)
	S1 =	Coal sulfur weighted, %

Table HUN - 11 (continued)

Huntington Past Actual Sulfuric Acid Emission Evaluation

	Annual Average Coal Sulfur Concentration (percent)					Average Coal Sulfur Concentrati
	2002	2003	2004	2005	2006	
Huntington Unit 1	0.52	0.56	0.54	0.50	0.68	0.56
Huntington Unit 2	0.52	0.56	0.53	0.51	0.69	0.56

S1 = 0.58 % (Unit 1)
S1 = 0.59 % (Unit 2)

E2 = 15,689 tons/year (Unit 1) (sulfur dioxide emissions)
E2 = 16,710 tons/year (Unit 2) (sulfur dioxide emissions)

EM_{Comb} = 53,343 lbs/year (Unit 1) (total H_2SO_4 manufactured from combustion)
EM_{Comb} = 56,813 lbs/year (Unit 2) (total H_2SO_4 manufactured from combustion)

$ER_{Comb} = EM_{Comb} * F2$ (all that apply) (Unit 2)

$ER_{Comb} = (SB_f + ((1 - SB_f)*F2_{s)})*K*F1*E2*F2_x$ (Unit 1 with 6.5% scrubber bypass)

ER_{Comb} = Sulfuric acid released from combustion

F2 = Technology Impact Factors

F2 = 0.56 (Air Heater Removal of Sulfuric Acid - PRB Coal; Applicable to Huntington Boilers)
F2 = 0.73 (Cold-side ESP - Subbituminous (PRB) Coal; Applicable to Huntington Boilers)
F2 = 0.40 (Wet FGD - PRB Coal; Applicable to Huntington Unit 1)

Table HUN - 11 (continued)

Huntington Past Actual Sulfuric Acid Emission Evaluation

ER_{Comb} =	9,573	lbs/year (Unit 1 Sulfuric Acid Released from Combustion)
ER_{Comb} =	23,225	lbs/year (Unit 2 Sulfuric Acid Released from Combustion)

Total Past Actual Sulfuric Acid Emission Rate =	32,798	lbs/year
	16.4	tons/year

	Pre-Project FGD (SO_2 scrubber)	Post-Project FGD (SO_2 scrubber)	Pre-Project FGC (flue gas conditioning)	Post-Project FGC (flue gas conditioning)
Huntington Unit 1	Yes	Yes	No	No
Huntington Unit 2	Yes	Yes	No	No

Note: The pre-project descriptions pertain to the proposed Unit 1 baghouse installation and scrubber upgrade.
Huntington Unit 2 did not have a scrubber during the period of maximum coal burn rate.
The Huntington Unit 2 scrubber (with no bypass) and baghouse installation was completed in 2007.

Table HUN - 12

Huntington Future Potential Sulfuric Acid Emission Evaluation

Sulfuric Acid Mist Manufactured from Combustion (EPRI LARK-TRIPP method used to calculate sulfuric acid emission rate)

$EM_{Comb} = K*F1*E2$

Where:	EM_{Comb} =	total H_2SO_4 manufactured from combustion, lbs/year
	K =	molecular weight and units conversion constant = (98.07)/(64.04) * 2000
		98.07 = Molecular weight of H_2SO_4
		64.04 = Molecular weight of SO_2
	K =	3,063
	F1 =	Fuel Impact Factor
	F1 =	0.00111 (Western Bituminous coal)
	E2 =	SO_2 mass rate, tons/year

E2 = K1 * K2 * C1 * S1

Where:	K1 =	molecular weight and units conversion constant = (64.04)/(100*32.06)
		64.04 = Molecular weight of SO_2
		32.06 = Molecular weight of S
		100 = conversion of % S to fraction
	K1 =	0.02
	K2 =	Sulfur conversion to SO_2; implicit from EPA AP-42
	K2 =	0.95 (Bituminous coal)
	C1 =	Coal burn, tons/year
	C1 =	1,927,958 tons/year (Unit 1 future max from page 1 of HUN-10)
	C1 =	1,928,844 tons/year (Unit 2 future max from page 1 of HUN-10)
	S1 =	Coal sulfur weighted, %

Table HUN - 12 (continued)

Huntington Future Potential Sulfuric Acid Emission Evaluation

	Annual Average Coal Sulfur Concentration (percent)					Average Coal Sulfur Concentration (percent)
	2002	2003	2004	2005	2006	
Huntington Unit 1	0.52	0.56	0.54	0.50	0.68	0.56
Huntington Unit 2	0.52	0.56	0.53	0.51	0.69	0.56

S1 = 0.58 % (Unit 1)
S1 = 0.59 % (Unit 2)

E2 = 20,501 tons/year (Unit 1) (sulfur dioxide emissions)
E2 = 20,634 tons/year (Unit 2) (sulfur dioxide emissions)

EM_{Comb} = 69,703 lbs/year (Unit 1) (total H_2SO_4 manufactured from combustion)
EM_{Comb} = 70,153 lbs/year (Unit 2) (total H_2SO_4 manufactured from combustion)

$ER_{Comb} = EM_{Comb} * F2$ (all that apply) (No scrubber bypass on Unit 1 and Unit 2)

ER_{Comb} = Sulfuric acid released from combustion
F2 = Technology Impact Factors
F2 = 0.56 (Air Heater Removal of Sulfuric Acid - PRB Coal; Applicable to Huntington Boilers)
F2 = 0.10 (Baghouse; Applicable to Huntington Unit 1 and Unit 2)
F2 = 0.40 (Wet FGD - PRB Coal; Applicable to Huntington Unit 1 and Unit 2)

Table HUN - 12 (continued)

Huntington Future Potential Sulfuric Acid Emission Evaluation

ER_{Comb} =	1,561	lbs/year (Unit 1 Sulfuric Acid Released from Combustion)
ER_{Comb} =	1,571	lbs/year (Unit 2 Sulfuric Acid Released from Combustion)

Total Future Potential Sulfuric Acid Emission Rate =	3,133	lbs/year
	1.6	tons/year

	Pre-Project FGD (SO_2 scrubber)	Post-Project FGD (SO_2 scrubber)	Pre-Project FGC (flue gas conditioning)	Post-Project FGC (flue gas conditioning)
Huntington Unit 1	Yes	Yes	No	No
Huntington Unit 2	Yes	Yes	No	No

Note: The pre-project descriptions pertain to the proposed Unit 1 baghouse installation and scrubber upgrade.
Huntington Unit 2 did not have a scrubber during the period of maximum coal burn rate.
The Huntington Unit 2 scrubber (with no bypass) and baghouse installation was completed in 2007.

Table HUN - 13

Huntington Past Actual Lead Emission Evaluation

Lead emissions calculated using AP-42 Table 1.1-16 9/98

Lead emissions ($lb/10^{12}$ Btu) = $3.4 * (C/A * PM)^{0.80}$

C = milligrams/kilogram (lead cncentration in coal)

A= percent ash in coal

PM = average particulate matter emission rate lb/MMBtu

	Annual Average Coal Lead Concentration (C) (ppm)					Average Coal Lead Concentration (C) (ppm)
	2002	2003	2004	2005	2006	
Huntington Unit 1	4.67	4.67	4.25	5.33	4.75	4.74
Huntington Unit 2	4.67	4.67	4.25	5.33	4.75	4.74

	Annual Average Coal Ash Concentration (A) (percent)					Average Coal Ash Concentration (A) (percent)
	2002	2003	2004	2005	2006	
Huntington Unit 1	14.59%	12.97%	14.66%	15.38%	14.75%	14.47%
Huntington Unit 2	14.59%	12.98%	14.61%	15.34%	15.02%	14.51%

Table HUN - 13 (continued)

Huntington Past Actual Lead Emission Evaluation

	Annual Average Particulate Matter Emission Rate (PM) (lb/MMBtu)					Average PM Emission Rate (PM) (lb/MMBtu)
	2003	2004	2005	2006	2007	
Huntington Unit 1	0.017	0.010	0.008	0.013	0.022	0.014
Huntington Unit 2	0.078	0.078	0.078	0.078	0.004	0.063

	Maximum Past Annual Heat Input (MMBtu/year)	Reference
Huntington Unit 1	32,762,898	HUN-5; December 2007
Huntington Unit 2	32,279,039	HUN-5; December 2007

	Average Lead Concentration (C) (ppm)	Average Coal Ash Concentration (A) (weight fraction)	Average Particulate Matter Emission Rate (PM) (lb/MMBtu)	Annual Lead Emission Rate ($lb/10^{12}Btu$)
Huntington Unit 1	4.74	0.1447	0.014	1.82
Huntington Unit 2	4.74	0.1451	0.063	6.05

Table HUN - 13 (continued)

Huntington Past Actual Lead Emission Evaluation

	Annual Lead Emission Rate ($lb/10^{12}$ Btu)	Annual Heat Input (10^{12} Btu/year)	Annual Lead Emission Rate (lb/year)	Annual Lead Emission Rate (tons/year)
Huntington Unit 1	1.82	32.8	59.7	0.03
Huntington Unit 2	6.05	32.3	195.3	0.10
Total			255.0	0.13

Maximum Past Actual Lead Emission Rate:	0.13 tons/year

Table HUN - 14

Huntington Future Potential Lead Emission Evaluation

Lead emissions calculated using AP-42 Table 1.1-16 9/98

Lead emissions ($lb/10^{12}$ Btu) = $3.4 * (C/A * PM)^{0.80}$

C = milligrams/kilogram (lead cncentration in coal)

A= percent ash in coal

PM = average particulate matter emission rate lb/MMBtu

	Annual Average Coal Lead Concentration (C) (ppm)					Average Coal Lead Concentration (C) (ppm)
	2002	2003	2004	2005	2006	
Huntington Unit 1	4.67	4.67	4.25	5.33	4.75	4.74
Huntington Unit 2	4.67	4.67	4.25	5.33	4.75	4.74

	Annual Average Coal Ash Concentration (A) (percent)					Average Coal Ash Concentration (A) (percent)
	2002	2003	2004	2005	2006	
Huntington Unit 1	14.59%	12.97%	14.66%	15.38%	14.75%	14.47%
Huntington Unit 2	14.59%	12.98%	14.61%	15.34%	15.02%	14.51%

Table HUN - 14 (continued)

Huntington Future Potential Lead Emission Evaluation

	Future Post-Project Particulate Matter Emission Rate (PM) (lb/MMBtu)
Huntington Unit 1	0.015
Huntington Unit 2	0.015

	Future Potential Annual Heat Input (MMBtu/year)	Reference
Huntington Unit 1	43,449,600	Table HUN-10
Huntington Unit 2	43,449,600	Table HUN-10

	Average Lead Concentration (C) (ppm)	Average Coal Ash Concentration (A) (weight fraction)	Post-Project Particulate Matter Emission Rate (PM) (lb/MMBtu)	Annual Lead Emission Rate ($lb/10^{12}Btu$)
Huntington Unit 1	4.74	0.1447	0.015	1.92
Huntington Unit 2	4.74	0.1451	0.015	1.92

Table HUN - 14 (continued)

Huntington Future Potential Lead Emission Evaluation

	Annual Lead Emission Rate ($lb/10^{12}$ Btu)	Annual Heat Input (10^{12} Btu/year)	Annual Lead Emission Rate (lb/year)	Annual Lead Emission Rate (tons/year)
Huntington Unit 1	1.92	43.4	83.6	0.04
Huntington Unit 2	1.92	43.4	83.4	0.04
Total			167.1	0.08

Maximum Future Potential Lead Emission Rate:	0.08 tons/year

Table HUN - 15

Huntington Past Actual Carbon Monoxide Emission Evaluation

Carbon monoxide emissions calculated using AP-42 Table 1.1-3 9/98

Carbon monoxide AP-42 emission factor = 0.5 lb/ton (0.5 lb of CO emitted per ton of coal burned)

	Maximum Past Actual Annual Coal Burn Rate (tons/year)	Reference	Carbon Monoxide Emission Factor lb/ton	Annual CO Emission Rate lb/year	Annual CO Emission Rate tons/year
Huntington Unit 1	1,475,425	HUN-6; May 2005	0.5	737,712	368.9
Huntington Unit 2	1,562,053	NAU-6; May 2005	0.5	781,027	390.5
Total				1,518,739	759.4

Maximum Past Actual Unit 1 and Unit 2 Stack Carbon Monoxide Emissi	759.4 tons/year

Maximum Past Actual Non-Stack CO Emissions

Emissions Source	Maximum Past Actual Non-Stack CO Emission Rate (tons/year)
Unit #1 Emergency Generator (diesel engine)	0.1
Unit #2 Emergency Generator (diesel engine)	0.1
Emergency Fire Pump (diesel engine)	0.2
Coal Handling and Blending Equipment	24.3
Total Maximum Non-Stack CO Emission Rate (tons/year)	24.8

Total Maximum Past Actual CO Emission Rate Stack and Non-Stack Emissions (tons/year)	784.2

Table HUN - 16

Huntington Future Potential Carbon Monoxide Emission Evaluation

Step 1: Calculate future potential Unit 1 and Unit 2 CO emissions based on post-low-NO_X project emission limit for Unit 1 and AP-42 emission factor for Unit 2

	Maximum Boiler Heat Input Rate (MMBtu/hour)	Post-Project Carbon Monoxide Emission Limit (lb/MMBtu)	Maximum Annual Boiler Operational Time (hours/year)	Post-Project Annual Carbon Monoxide Emission Rate (tons/year)
Huntington Unit 1	4,960	0.34	8,760	7,386.4

	Maximum Future Potential Annual Coal Burn Rate (tons/year)	Reference	Carbon Monoxide Emission Factor lb/ton	Annual CO Emission Rate lb/year	Annual CO Emission Rate tons/year
Huntington Unit 2	1,928,844	HUN-10	0.5	964,422	482.2

Step 2: Identify the future potential non-stack CO emissions

Maximum Non-Stack CO Emission Rate:	24.8 tons/year	(Reference HUN-15)

Step 3: Identify total annual Unit 1 post-low-NO_X control project annual carbon monoxide emission rate

	Post-Project Annual Carbon Monoxide Emission Rate (tons/year)
Huntington Unit 1	7,386.4
Huntington Unit 2	482.2
Non-Stack	24.8
Total	7,893.4

Table HUN - 17

Huntington Past Actual VOC Emission Evaluation

Volatile Organic Compound emissions calculated using AP-42 Table 1.1-19 9/98

VOC AP-42 emission factor = 0.06 lb/ton (0.06 lb of VOC emitted per ton of coal burned)

	Maximum Past Actual Annual Coal Burn Rate (tons/year)	Reference	VOC Emission Factor lb/ton	Annual VOC Emission Rate lb/year	Annual VOC Emission Rate tons/year
Huntington Unit 1	1,475,425	HUN-6; May 2005	0.06	88,525	44.3
Huntington Unit 2	1,562,053	HUN-6; May 2005	0.06	93,723	46.9
Total				182,249	91.1

Maximum Past Actual Unit 1 and Unit 2 Stack CO Emission Rate:	91.1 tons/year

Maximum Past Actual Non-Stack VOC Emissions

Emissions Source	Maximum Past Actual Non-Stack CO Emission Rate (tons/year)
Unit #1 Emergency Generator (diesel engine)	0.0
Unit #2 Emergency Generator (diesel engine)	0.0
Emergency Fire Pump (diesel engine)	0.1
Coal Handling and Blending Equipment	2.6
Total Maximum Non-Stack VOC Emission Rate (tons/year)	2.7

Total Maximum Past Actual VOC Emission Rate Stack and Non-Stack Emissions (tons/year)	93.8

Table HUN - 18

Huntington Future Potential VOC Emission Evaluation

Volatile Organic Compound emissions calculated using AP-42 Table 1.1-19 9/98

VOC AP-42 emission factor = 0.06 lb/ton (0.06 lb of VOC emitted per ton of coal burned)

	Maximum Future Potential Annual Coal Burn Rate (tons/year)	Reference	VOC Emission Factor lb/ton	Annual VOC Emission Rate lb/year	Annual VOC Emission Rate tons/year
Huntington Unit 1	1,927,958	from HUN-10	0.06	115,678	57.8
Huntington Unit 2	1,928,844	from HUN-10	0.06	115,731	57.9
Non-Stack	NA	NA	NA	5,436	2.7
Total				236,845	118.4

Maximum Future Potential VOC Emission Rate:	118.4 tons/year

Table HUN - 19
Past Actual Hazardous Air Pollutant Emissions

Facility: **Huntington**
Emission Unit: **Steam generating unit (primary fuel, coal)**

Production Data	Unit 1	Unit 2		
Coal consumption, ton/year	1,475,425	1,562,053	ton/yr	Maximum occurred in May 2005
% Moisture in the coal	7.72	7.72	%	2005 coal analysis
Coal consumption dry, ton/year	1,361,510	1,441,450	ton/yr	Calculated based on coal % moisture
Heating value of coal, Btu/lb	11,045	11,051	Btu/lb	2005 data
Heat Input	32,592,826	34,524,169	mmBtu/yr	Calculated based on coal burn and heating content
Ash fraction in coal, lb ash/lb coal	0.15	0.15	lb ash/lb coal	2005 emissions inventory rate
Particulate matter concentration, lb/mmBtu	0.008	0.078	lb/mmBtu	May 2005 PM emission rates

HAPS from Coal

HAP	CAS #	Unit 1 Emission Factor	Unit 2 Emission Factor	Units	Reference	HAP Emissions (lb/year)
Arsenic	7440-38-2	3.2E-01	2.2E+00	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	87.1
Benzene	71-43-2	0.0013	0.0013	lb/ton	AP-42 Table 1.1-14 9/98	3,643.8
Beryllium	7440-41-7	2.8E-02	3.4E-01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	12.8
Chromium	7440-47-3	4.0E+00	1.5E+01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	647.5
Cadmium	7440-43-9	3.9E-01	1.2E+00	lb/1012Btu	AP-42 Table 1.1-16 9/99	54.5
Formaldehyde	50-00-0	0.00024	0.00024	lb/ton	AP-42 Table 1.1-14 9/97	672.7
Acetaldehyde	75-07-0	0.00057	0.00057	lb/ton	AP-42 Table 1.1-14 9/98	1,597.7
Acetophenone	98-86-2	0.000015	0.000015	lb/ton	AP-42 Table 1.1-14 9/98	42.0
Acrolein	107-02-8	0.00029	0.00029	lb/ton	AP-42 Table 1.1-14 9/98	812.9
Antimony	7440-36-0	1.4E-01	6.0E-01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	25.3
Benzyl Chloride	100-44-7	0.0007	0.0007	lb/ton	AP-42 Table 1.1-14 9/98	1,962.1
Biphenyl	90-43-7	0.0000017	0.0000017	lb/ton	AP-42 Table 1.1-13 9/98	4.8
Bis (2-ethylhexy)phthalate (DEHP)	117-81-7	0.000073	0.000073	lb/ton	AP-42 Table 1.1-14 9/98	204.6
Bromoform	75-25-2	0.000039	0.000039	lb/ton	AP-42 Table 1.1-14 9/98	109.3
Carbon Disulfide	75-15-0	0.00013	0.00013	lb/ton	AP-42 Table 1.1-14 9/98	364.4
2-Chloracetophenone	532-27-4	0.000007	0.000007	lb/ton	AP-42 Table 1.1-14 9/98	19.6
Chlorobenzene	108-90-7	0.000022	0.000022	lb/ton	AP-42 Table 1.1-14 9/98	61.7
Chloroform	67-66-3	0.000059	0.000059	lb/ton	AP-42 Table 1.1-14 9/98	165.4
Cobalt	7440-48-4	5.1E-01	2.4E+00	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	100.8
Cumene	98-82-8	0.0000053	0.0000053	lb/ton	AP-42 Table 1.1-14 9/98	14.9
Cyanide	57-12-5	0.0025	0.0025	lb/ton	AP-42 Table 1.1-14 9/98	7,007.4
Dimethyl Sulfate	77-78-1	0.000048	0.000048	lb/ton	AP-42 Table 1.1-14 9/98	134.5
2,4-Dinitrotoluene	121-14-2	0.00000028	0.00000028	lb/ton	AP-42 Table 1.1-14 9/98	0.8
Ethylbenzene	100-41-4	0.000094	0.000094	lb/ton	AP-42 Table 1.1-14 9/98	263.5
Ethyl Chloride	75-00-3	0.000042	0.000042	lb/ton	AP-42 Table 1.1-14 9/98	117.7
Ethylene Dibromide	106-93-4	0.0000012	0.0000012	lb/ton	AP-42 Table 1.1-14 9/98	3.4
Ethylene Dichloride	107-06-2	0.00004	0.00004	lb/ton	AP-42 Table 1.1-14 9/99	112.1
Hexane	110-54-3	0.000067	0.000067	lb/ton	AP-42 Table 1.1-14 9/98	187.8
Hydrogen Chloride	7647-01-0			from HCl worksheet (below)		978,374.8
Isophorone	78-59-1	0.00058	0.00058	lb/ton	AP-42 Table 1.1-14 9/98	1,625.7
Manganese	7439-96-5	4.1E+00	1.6E+01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	683.4
Mercury	7439-97-6			from Mercury worksheet (below)		54.6
Methyl Bromide	74-83-9	0.00016	0.00016	lb/ton	AP-42 Table 1.1-14 9/98	448.5
Methyl Chloride	74-87-3	0.00053	0.00053	lb/ton	AP-42 Table 1.1-14 9/98	1,485.6
Methyl Chloroform (1,1,1-Trichloroethane)	71-55-6	0.00002	0.00002	lb/ton	AP-42 Table 1.1-14 9/98	56.1

Table HUN - 19 (continued)
Past Actual Hazardous Air Pollutant Emissions

HAPS from Coal

HAP	CAS #	Unit 1 Emission Factor	Unit 2 Emission Factor	Units	Reference	HAP Emissions (lb/year)
Methyl Ethyl Ketone	78-93-3	0.00039	0.00039	lb/ton	AP-42 Table 1.1-14 9/98	1,093.2
Methyl Hydrazine	60-34-4	0.00017	0.00017	lb/ton	AP-42 Table 1.1-14 9/98	476.5
Methyl Methacrylate	80-62-6	0.00002	0.00002	lb/ton	AP-42 Table 1.1-14 9/98	56.1
Methyl Tert Butyl Ether	1634-04-4	0.000035	0.000035	lb/ton	AP-42 Table 1.1-14 9/98	98.1
Methylene Chloride	75-09-2	0.00029	0.00029	lb/ton	AP-42 Table 1.1-14 9/98	812.9
Naphthalene	91-20-3	0.000013	0.000013	lb/ton	AP-42 Table 1.1-13 9/98	36.4
Nickel	7440-02-0	3.2E+00	9.4E+00	$lb/10^{12}$Btu	AP-42 Table 1.1-16 9/99	428.7
o-Xylenes	95-47-6	N/A	N/A	N/A	NA	
Phenol	108-95-2	0.000016	0.000016	lb/ton	AP-42 Table 1.1-14 9/98	44.8
Phosphorus	7723-14-0	N/A	N/A	N/A	NA	
Polycylic Organic Matter (POM) *	N/A	2.072	2.072	$lb/10^{12}$Btu	EPRI Data	139.1
Propionaldehyde	123-38-6	0.00038	0.00038	lb/ton	AP-42 Table 1.1-14 9/98	1,065.1
Selenium	7782-49-2	0.0013	0.0013	lb/ton	AP-42 Table 1.1-18 9/97	3,643.8
Styrene	100-42-5	0.000025	0.000025	lb/ton	AP-42 Table 1.1-14 9/98	70.1
Tetrachloroethylene	127-18-4	0.000043	0.000043	lb/ton	AP-42 Table 1.1-14 9/98	120.5
Toluene	108-88-3	0.00024	0.00024	lb/ton	AP-42 Table 1.1-14 9/97	672.7
Vinyl Acetate	108-05-4	0.0000076	0.0000076	lb/ton	AP-42 Table 1.1-14 9/98	21.3
Xylenes	1330-20-7	0.000037	0.000037	lb/ton	AP-42 Table 1.1-14 9/98	103.7
Dioxin/Furans	N/A	0.00001617	0.00001617	$lb/10^{12}$Btu	EPRI Data	0.0
				Total Past Actual Coal HAPs (lb/year):		**1,010,042.7**

Radionuclides are also emitted in small quantities, unable to estimate with current data.
* All POM emission factors were summed to make this one emission factor.

Note:
? Calculated annual HAPs emission rate does not include lead, hydrogen fluoride or sulfuric acid.
? Emissions of these chemicals are calculated separately

For Metal HAP emissions (example; arsenic):

$E = 3.1 * (C/A * PM)^{0.85}$ $lb/10^{12}$ BTU

Where: E = arsenic emission rate in $lb/10^{12}$ BTU
C = concentration of arsenic in coal, parts per million weight
A = coal ash content, 15% ash equals 0.15
PM = particulate matter emission factor, $lb/10^{6}$ BTU

Unit 1 PM Emission Rate	Unit 2 PM Emission Rate
0.008 $lb/10^{6}$ BTU	0.078 $lb/10^{6}$ BTU
Stack Test Values from May 2005	

Concentration of HAP in Coal:

Trace Element	Dry	Units	Reference
Sb	1	ppmdw	Coal trace element analysis
As	1.33	ppmdw	Coal trace element analysis
Be	0.63	ppmdw	Coal trace element analysis
Cd	0.27	ppmdw	Coal trace element analysis
Cr	22	ppmdw	Coal trace element analysis
Co	3.33	ppmdw	Coal trace element analysis
Pb	5.33	ppmdw	Coal trace element analysis
Mn	21.57	ppmdw	Coal trace element analysis
Ni	9.67	ppmdw	Coal trace element analysis
Hg	0.03	ppmdw	Coal trace element analysis
Se	1.33	ppmdw	Coal trace element analysis
Cl	303.33	ppmdw	Coal trace element analysis
F	223.33	ppmdw	Coal trace element analysis

Table HUN - 19 (continued)
Past Actual Hazardous Air Pollutant Emissions

Production Data

Fuel Oil Consumption	558,266 gallons/year	2005 Production Data
Heat Input	140,000 BTU/gallon	Production Data

HAPS from Fuel Oil

HAP	CAS #	Emission Factor	Reference	Summary (lb/year)
Arsenic	7440-38-2	4	AP-42 Table 1.3-10, 9/98	0.3
Benzene	71-43-2	N/A		
Beryllium	7440-41-7	3	AP-42 Table 1.3-10, 9/98	0.2
Chromium	7440-47-3	3	AP-42 Table 1.3-10, 9/98	0.2
Cadmium	7440-43-9	3	AP-42 Table 1.3-10, 9/98	0.2
Formaldehyde	50-00-0	N/A		
Acetaldehyde	75-07-0	N/A		
Acetophenone	98-86-2	N/A		
Acrolein	107-02-8	N/A		
Antimony	7440-36-0	N/A		
Benzyl Chloride	100-44-7	N/A		
Biphenyl	90-43-7	N/A		
Bis (2-ethylhexy)phthalate (DEHP)	117-81-7	N/A		
Bromoform	75-25-2	N/A		
Carbon Disulfide	75-15-0	N/A		
2-Chloracetophenone	532-27-4	N/A		
Chlorobenzene	108-90-7	N/A		
Chloroform	67-66-3	N/A		
Cobalt	7440-48-4	N/A		
Cumene	98-82-8	N/A		
Cyanide	57-12-5	N/A		
Dimethyl Sulfate	77-78-1	N/A		
2,4-Dinitrotoluene	121-14-2	N/A		
Ethylbenzene	100-41-4	N/A		
Ethyl Chloride	75-00-3	N/A		
Ethylene Dibromide	106-93-4	N/A		
Ethylene Dichloride	107-06-2	N/A		
Hexane	110-54-3	N/A		
Hydrogen Chloride	7647-01-0	N/A		
Isophorone	78-59-1	N/A		
Manganese	7439-97-6	6	AP-42 Table 1.3-10, 9/98	0.5
Mercury	74-83-9	3	AP-42 Table 1.3-10, 9/98	0.2
Methyl Bromide	74-87-3	N/A		
Methyl Chloride	71-55-6	N/A		
Methyl Chloroform (1,1,1-Trichloroethane)	78-93-3	N/A		
Methyl Ethyl Ketone	60-34-4	N/A		
Methyl Hydrazine	80-62-6	N/A		
Methyl Methacrylate	1634-04-4	N/A		
Methyl Tert Butyl Ether	75-09-2	N/A		
Methylene Chloride	91-20-3	N/A		
Naphthalene	7440-02-0	N/A		
Nickel	95-47-6	3	AP-42 Table 1.3-10, 9/98	0.2
o-Xylene	108-95-2	N/A		

Table HUN - 19 (continued)

Past Actual Hazardous Air Pollutant Emissions

HAPS from Fuel Oil

HAP	CAS #	Emission Factor	Reference	Summary (lb/year)
Phenol	7723-14-0	N/A		
Phosphorous	N/A	N/A		
Polycylic Organic Matter (POM) *	123-38-6	N/A		
Propionaldehyde	7782-49-2	N/A		
Selenium	100-42-5	15	AP-42 Table 1.3-10, 9/98	1.2
Styrene	127-18-4	N/A		
Tetrachloroethylene	108-88-3	N/A		
Toluene	108-05-4	N/A		
Vinyl Acetate	1330-20-7	N/A		
Xylenes	N/A	N/A		
Dioxin/Furans	N/A	N/A		
		Total Past Actual Fuel Oil HAPs (lb/year):		**3.1**

* All POM emission factors were summed to make this one emission factor.

Table HUN - 19 (continued)
Past Actual Hazardous Air Pollutant Emissions

Total HAP Emissions from Coal and Fuel Oil

HAP	Coal HAP Emissions lb/year	Fuel Oil HAP Emissions lb/year	Total HAP Emissions lb/year
Arsenic	87.1	0.3	87.4
Benzene	3,643.8		3,643.8
Beryllium	12.8	0.2	13.0
Chromium	647.5	0.2	647.7
Cadmium	54.5	0.2	54.8
Formaldehyde	672.7		672.7
Acetaldehyde	1,597.7		1,597.7
Acetophenone	42.0		42.0
Acrolein	812.9		812.9
Antimony	25.3		25.3
Benzyl Chloride	1,962.1		1,962.1
Biphenyl	4.8		4.8
Bis (2-ethylhexy)phthalate (DEHP)	204.6		204.6
Bromoform	109.3		109.3
Carbon Disulfide	364.4		364.4
2-Chloracetophenone	19.6		19.6
Chlorobenzene	61.7		61.7
Chloroform	165.4		165.4
Cobalt	100.8		100.8
Cumene	14.9		14.9
Cyanide	7,007.4		7,007.4
Dimethyl Sulfate	134.5		134.5
2,4-Dinitrotoluene	0.8		0.8
Ethylbenzene	263.5		263.5
Ethyl Chloride	117.7		117.7
Ethylene Dibromide	3.4		3.4
Ethylene Dichloride	112.1		112.1
Hexane	187.8		187.8
Hydrogen Chloride	978,374.8		978,374.8
Isophorone	1,625.7		1,625.7
Manganese	683.4	0.5	683.9
Mercury	54.6	0.2	54.9
Methyl Bromide	448.5		448.5
Methyl Chloride	1,485.6		1,485.6
Methyl Chloroform (1,1,1-Trichloroethane)	56.1		56.1
Methyl Ethyl Ketone	1,093.2		1,093.2
Methyl Hydrazine	476.5		476.5
Methyl Methacrylate	56.1		56.1
Methyl Tert Butyl Ether	98.1		98.1
Methylene Chloride	812.9		812.9
Naphthalene	36.4		36.4
Nickel	428.7	0.2	428.9
o-Xylene			0.0
Phenol	44.8		44.8
Phosphorous			0.0
Polycylic Organic Matter (POM) *	139.1		139.1
Propionaldehyde	1,065.1		1,065.1

Table HUN - 19 (continued)
Past Actual Hazardous Air Pollutant Emissions

Total HAP Emissions from Coal and Fuel Oil

HAP	Coal HAP Emissions lb/year	Fuel Oil HAP Emissions lb/year	Total HAP Emissions lb/year
Selenium	3,643.8	1.2	3,645.0
Styrene	70.1		70.1
Tetrachloroethylene	120.5		120.5
Toluene	672.7		672.7
Vinyl Acetate	21.3		21.3
Xylenes	103.7		103.7
Dioxin/Furans	0.0		0.0
Total Past Actual HAP Emissions (Coal and Fuel Oil):			**1,010,045.9 lbs/year** **505.0 tons/year**

Worksheets for Past Actual Mercury and Hydrogen Chloride Emissions

Past Actual Mercury Emission Worksheet
Production Data

Heat Input	65,041,937 MMBtu/year	(Maximum past actual heat input occurred in December 2007)
	32,762,898 MMBtu/year	(Unit 1 annual heat input in December 2007)
	32,279,039 MMBtu/year	(Unit 2 annual heat input in December 2007)

Past Actual Mercury Emission Rates

Huntington Unit 1	0.84 $lb/10^{12}$ Btu	(Assumed rate from Unit 2 testing)
Huntington Unit 2	0.84 $lb/10^{12}$ Btu	(Emission rate from Unit 2 testing)

Huntington Unit 1 Mercury Emissions	27.5 lbs/year
Huntington Unit 2 Mercury Emissions	27.1 lbs/year
Total Past Actual Mercury Emissions:	**54.6** lbs/year

Past Actual Hydrogen Chloride Emission Worksheet

Past Actual HCl Emissions Reference: EPRI Equations 5-1, 5-2, 5-3, 5-4 and 5-5

	Unit 1	Unit 2	Total Past Actual HCl Release lb/year
Coal consumption, ton/year	1,475,425	1,562,053	
Coal consumption - Dry, ton/year	1,361,510	1,441,450	
% Moisture in the coal	7.72%	7.72%	
Cl, PPM	303.33	303.33	
HCl acid conver factor, compound/parent chemical	1.0284	1.0284	
FGD Bypass, fraction	6.5%	100.0%	
HCl FGD emission factor	3.0%	3.0%	
Bituminous HCl non-scrubbed emission factor	100.0%	100.0%	
Total manufactured - lb/year	849,458	899,333	
Air Release with FGD Removal	23,827	0.0	
Air Release with bypass	55,215	899,333	
Total HCL Air Release	79,042	899,333	**978,375**

Table HUN - 20
Future Potential Hazardous Air Pollutant Emissions

Facility: **Huntington**
Emission Unit: **Steam generating unit (primary fuel, coal)**

Production Data	Unit 1	Unit 2		
Coal consumption, ton/year	1,927,958	1,928,844	ton/yr	Future potential coal burn rates from HUN-10
% Moisture in the coal	7.72	7.72	%	2005 coal analysis
Coal consumption dry, ton/year	1,779,104	1,779,921	ton/yr	Calculated based on coal % moisture
Heating value of coal, Btu/lb	11,045	11,051	Btu/lb	2005 data
Heat Input	42,589,512	42,630,903	mmBtu/yr	Calculated based on coal burn and heating content
Ash fraction in coal, lb ash/lb coal	0.15	0.15	lb ash/lb coal	2005 emissions inventory rate
Particulate matter concentration, lb/mmBtu	0.015	0.015	lb/mmBtu	Requested Unit 1 and existing Unit 2 PM emission rates

HAPS from Coal

HAP	CAS #	Unit 1 Emission Factor	Unit 2 Emission Factor	Units	Reference	HAP Emissions (lb/year)
Arsenic	7440-38-2	5.5E-01	5.5E-01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	46.7
Benzene	71-43-2	0.0013	0.0013	lb/ton	AP-42 Table 1.1-14 9/98	4,626.7
Beryllium	7440-41-7	5.6E-02	5.6E-02	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	4.8
Chromium	7440-47-3	5.8E+00	5.8E+00	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	491.3
Cadmium	7440-43-9	5.3E-01	5.3E-01	lb/1012Btu	AP-42 Table 1.1-16 9/99	45.4
Formaldehyde	50-00-0	0.00024	0.00024	lb/ton	AP-42 Table 1.1-14 9/97	854.2
Acetaldehyde	75-07-0	0.00057	0.00057	lb/ton	AP-42 Table 1.1-14 9/98	2,028.6
Acetophenone	98-86-2	0.000015	0.000015	lb/ton	AP-42 Table 1.1-14 9/98	53.4
Acrolein	107-02-8	0.00029	0.00029	lb/ton	AP-42 Table 1.1-14 9/98	1,032.1
Antimony	7440-36-0	2.1E-01	2.1E-01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	18.1
Benzyl Chloride	100-44-7	0.0007	0.0007	lb/ton	AP-42 Table 1.1-14 9/98	2,491.3
Biphenyl	90-43-7	0.0000017	0.0000017	lb/ton	AP-42 Table 1.1-13 9/98	6.1
Bis (2-ethylhexy)phthalate (DEHP)	117-81-7	0.000073	0.000073	lb/ton	AP-42 Table 1.1-14 9/98	259.8
Bromoform	75-25-2	0.000039	0.000039	lb/ton	AP-42 Table 1.1-14 9/98	138.8
Carbon Disulfide	75-15-0	0.00013	0.00013	lb/ton	AP-42 Table 1.1-14 9/98	462.7
2-Chloracetophenone	532-27-4	0.000007	0.000007	lb/ton	AP-42 Table 1.1-14 9/98	24.9
Chlorobenzene	108-90-7	0.000022	0.000022	lb/ton	AP-42 Table 1.1-14 9/98	78.3
Chloroform	67-66-3	0.000059	0.000059	lb/ton	AP-42 Table 1.1-14 9/98	210.0
Cobalt	7440-48-4	7.8E-01	7.8E-01	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	66.8
Cumene	98-82-8	0.0000053	0.0000053	lb/ton	AP-42 Table 1.1-14 9/98	18.9
Cyanide	57-12-5	0.0025	0.0025	lb/ton	AP-42 Table 1.1-14 9/98	8,897.6
Dimethyl Sulfate	77-78-1	0.000048	0.000048	lb/ton	AP-42 Table 1.1-14 9/98	170.8
2,4-Dinitrotoluene	121-14-2	0.00000028	0.00000028	lb/ton	AP-42 Table 1.1-14 9/98	1.0
Ethylbenzene	100-41-4	0.000094	0.000094	lb/ton	AP-42 Table 1.1-14 9/98	334.5
Ethyl Chloride	75-00-3	0.000042	0.000042	lb/ton	AP-42 Table 1.1-14 9/98	149.5
Ethylene Dibromide	106-93-4	0.0000012	0.0000012	lb/ton	AP-42 Table 1.1-14 9/98	4.3
Ethylene Dichloride	107-06-2	0.00004	0.00004	lb/ton	AP-42 Table 1.1-14 9/99	142.4
Hexane	110-54-3	0.000067	0.000067	lb/ton	AP-42 Table 1.1-14 9/98	238.5
Hydrogen Chloride	7647-01-0			from HCl worksheet (below)		66,615.2
Isophorone	78-59-1	0.00058	0.00058	lb/ton	AP-42 Table 1.1-14 9/98	2,064.2
Manganese	7439-96-5	5.9E+00	5.9E+00	lb/10^{12}Btu	AP-42 Table 1.1-16 9/99	506.3
Mercury	7439-97-6			from Mercury worksheet (below)		71.6
Methyl Bromide	74-83-9	0.00016	0.00016	lb/ton	AP-42 Table 1.1-14 9/98	569.4
Methyl Chloride	74-87-3	0.00053	0.00053	lb/ton	AP-42 Table 1.1-14 9/98	1,886.3
Methyl Chloroform (1,1,1-Trichloroethane)	71-55-6	0.00002	0.00002	lb/ton	AP-42 Table 1.1-14 9/98	71.2

Table HUN - 20 (continued)

Future Potential Hazardous Air Pollutant Emissions

HAPS from Coal

HAP	CAS #	Unit 1 Emission Factor	Unit 2 Emission Factor	Units	Reference	HAP Emissions (lb/year)
Methyl Ethyl Ketone	78-93-3	0.00039	0.00039	lb/ton	AP-42 Table 1.1-14 9/98	1,388.0
Methyl Hydrazine	60-34-4	0.00017	0.00017	lb/ton	AP-42 Table 1.1-14 9/98	605.0
Methyl Methacrylate	80-62-6	0.00002	0.00002	lb/ton	AP-42 Table 1.1-14 9/98	71.2
Methyl Tert Butyl Ether	1634-04-4	0.000035	0.000035	lb/ton	AP-42 Table 1.1-14 9/98	124.6
Methylene Chloride	75-09-2	0.00029	0.00029	lb/ton	AP-42 Table 1.1-14 9/98	1,032.1
Naphthalene	91-20-3	0.000013	0.000013	lb/ton	AP-42 Table 1.1-13 9/98	46.3
Nickel	7440-02-0	4.3E+00	4.3E+00	$lb/10^{12}$Btu	AP-42 Table 1.1-16 9/99	364.7
o-Xylenes	95-47-6	N/A	N/A	N/A	NA	
Phenol	108-95-2	0.000016	0.000016	lb/ton	AP-42 Table 1.1-14 9/98	56.9
Phosphorus	7723-14-0	N/A	N/A	N/A	NA	
Polycylic Organic Matter (POM) *	N/A	2.072	2.072	$lb/10^{12}$Btu	EPRI Data	176.6
Propionaldehyde	123-38-6	0.00038	0.00038	lb/ton	AP-42 Table 1.1-14 9/98	1,352.4
Selenium	7782-49-2	0.0013	0.0013	lb/ton	AP-42 Table 1.1-18 9/97	4,626.7
Styrene	100-42-5	0.000025	0.000025	lb/ton	AP-42 Table 1.1-14 9/98	89.0
Tetrachloroethylene	127-18-4	0.000043	0.000043	lb/ton	AP-42 Table 1.1-14 9/98	153.0
Toluene	108-88-3	0.00024	0.00024	lb/ton	AP-42 Table 1.1-14 9/97	854.2
Vinyl Acetate	108-05-4	0.0000076	0.0000076	lb/ton	AP-42 Table 1.1-14 9/98	27.0
Xylenes	1330-20-7	0.000037	0.000037	lb/ton	AP-42 Table 1.1-14 9/98	131.7
Dioxin/Furans	N/A	0.00001617	0.00001617	$lb/10^{12}$Btu	EPRI Data	0.0
				Total Past Actual Coal HAPs (lb/year):		**105,781.1**

Radionuclides are also emitted in small quantities, unable to estimate with current data.

* All POM emission factors were summed to make this one emission factor.

Note:

? Calculated annual HAPs emission rate does not include lead, hydrogen fluoride or sulfuric acid.

? Emissions of these chemicals are calculated separately

For Metal HAP emissions (example; arsenic):

$E = 3.1 * (C/A * PM)^{0.85}$ $lb/10^{12}$ BTU

Where: E = arsenic emission rate in $lb/10^{12}$ BTU

C = concentration of arsenic in coal, parts per million weight

A = coal ash content, 15% ash equals 0.15

PM = particulate matter emission factor, $lb/10^{6}$ BTU

Unit 1 PM Emission Rate	Unit 2 PM Emission Rate
0.015 $lb/10^{6}$ BTU	0.015 $lb/10^{6}$ BTU
Existing and Future Emission Rates	

Concentration of HAP in Coal:

Trace Element	Dry	Units	Reference
Sb	1	ppmdw	Coal trace element analysis
As	1.33	ppmdw	Coal trace element analysis
Be	0.63	ppmdw	Coal trace element analysis
Cd	0.27	ppmdw	Coal trace element analysis
Cr	22	ppmdw	Coal trace element analysis
Co	3.33	ppmdw	Coal trace element analysis
Pb	5.33	ppmdw	Coal trace element analysis
Mn	21.57	ppmdw	Coal trace element analysis
Ni	9.67	ppmdw	Coal trace element analysis
Hg	0.03	ppmdw	Coal trace element analysis
Se	1.33	ppmdw	Coal trace element analysis
Cl	303.33	ppmdw	Coal trace element analysis
F	223.33	ppmdw	Coal trace element analysis

Table HUN - 20 (continued)
Future Potential Hazardous Air Pollutant Emissions

Production Data

Fuel Oil Consumption	558,266 gallons/year	2005 Production Data
Heat Input	140,000 BTU/gallon	Production Data

HAPS from Fuel Oil

HAP	CAS #	Emission Factor	Reference	Summary (lb/year)
Arsenic	7440-38-2	4	AP-42 Table 1.3-10, 9/98	0.3
Benzene	71-43-2	N/A		
Beryllium	7440-41-7	3	AP-42 Table 1.3-10, 9/98	0.2
Chromium	7440-47-3	3	AP-42 Table 1.3-10, 9/98	0.2
Cadmium	7440-43-9	3	AP-42 Table 1.3-10, 9/98	0.2
Formaldehyde	50-00-0	N/A		
Acetaldehyde	75-07-0	N/A		
Acetophenone	98-86-2	N/A		
Acrolein	107-02-8	N/A		
Antimony	7440-36-0	N/A		
Benzyl Chloride	100-44-7	N/A		
Biphenyl	90-43-7	N/A		
Bis (2-ethylhexy)phthalate (DEHP)	117-81-7	N/A		
Bromoform	75-25-2	N/A		
Carbon Disulfide	75-15-0	N/A		
2-Chloracetophenone	532-27-4	N/A		
Chlorobenzene	108-90-7	N/A		
Chloroform	67-66-3	N/A		
Cobalt	7440-48-4	N/A		
Cumene	98-82-8	N/A		
Cyanide	57-12-5	N/A		
Dimethyl Sulfate	77-78-1	N/A		
2,4-Dinitrotoluene	121-14-2	N/A		
Ethylbenzene	100-41-4	N/A		
Ethyl Chloride	75-00-3	N/A		
Ethylene Dibromide	106-93-4	N/A		
Ethylene Dichloride	107-06-2	N/A		
Hexane	110-54-3	N/A		
Hydrogen Chloride	7647-01-0	N/A		
Isophorone	78-59-1	N/A		
Manganese	7439-97-6	6	AP-42 Table 1.3-10, 9/98	0.5
Mercury	74-83-9	3	AP-42 Table 1.3-10, 9/98	0.2
Methyl Bromide	74-87-3	N/A		
Methyl Chloride	71-55-6	N/A		
Methyl Chloroform (1,1,1-Trichloroethane)	78-93-3	N/A		
Methyl Ethyl Ketone	60-34-4	N/A		
Methyl Hydrazine	80-62-6	N/A		
Methyl Methacrylate	1634-04-4	N/A		
Methyl Tert Butyl Ether	75-09-2	N/A		
Methylene Chloride	91-20-3	N/A		
Naphthalene	7440-02-0	N/A		
Nickel	95-47-6	3	AP-42 Table 1.3-10, 9/98	0.2
o-Xylene	108-95-2	N/A		

Table HUN - 20 (continued)

Future Potential Hazardous Air Pollutant Emissions

HAPS from Fuel Oil

HAP	CAS #	Emission Factor	Reference	Summary (lb/year)
Phenol	7723-14-0	N/A		
Phosphorous	N/A	N/A		
Polycylic Organic Matter (POM) *	123-38-6	N/A		
Propionaldehyde	7782-49-2	N/A		
Selenium	100-42-5	15	AP-42 Table 1.3-10, 9/98	1.2
Styrene	127-18-4	N/A		
Tetrachloroethylene	108-88-3	N/A		
Toluene	108-05-4	N/A		
Vinyl Acetate	1330-20-7	N/A		
Xylenes	N/A	N/A		
Dioxin/Furans	N/A	N/A		
		Total Future Potential Fuel Oil HAPs (lb/year):		**3.1**

* All POM emission factors were summed to make this one emission factor.

Table HUN - 20 (continued)
Future Potential Hazardous Air Pollutant Emissions

Total HAP Emissions from Coal and Fuel Oil

HAP	Coal HAP Emissions lb/year	Fuel Oil HAP Emissions lb/year	Total HAP Emissions lb/year
Arsenic	87.1	0.3	46.7
Benzene	3,643.8		4,626.7
Beryllium	12.8	0.2	4.8
Chromium	647.5	0.2	491.3
Cadmium	54.5	0.2	45.4
Formaldehyde	672.7		854.2
Acetaldehyde	1,597.7		2,028.6
Acetophenone	42.0		53.4
Acrolein	812.9		1,032.1
Antimony	25.3		18.1
Benzyl Chloride	1,962.1		2,491.3
Biphenyl	4.8		6.1
Bis (2-ethylhexy)phthalate (DEHP)	204.6		259.8
Bromoform	109.3		138.8
Carbon Disulfide	364.4		462.7
2-Chloracetophenone	19.6		24.9
Chlorobenzene	61.7		78.3
Chloroform	165.4		210.0
Cobalt	100.8		66.8
Cumene	14.9		18.9
Cyanide	7,007.4		8,897.6
Dimethyl Sulfate	134.5		170.8
2,4-Dinitrotoluene	0.8		1.0
Ethylbenzene	263.5		334.5
Ethyl Chloride	117.7		149.5
Ethylene Dibromide	3.4		4.3
Ethylene Dichloride	112.1		142.4
Hexane	187.8		238.5
Hydrogen Chloride	978,374.8		66,615.2
Isophorone	1,625.7		2,064.2
Manganese	683.4	0.5	506.3
Mercury	54.6	0.2	71.6
Methyl Bromide	448.5		569.4
Methyl Chloride	1,485.6		1,886.3
Methyl Chloroform (1,1,1-Trichloroethane)	56.1		71.2
Methyl Ethyl Ketone	1,093.2		1,388.0
Methyl Hydrazine	476.5		605.0
Methyl Methacrylate	56.1		71.2
Methyl Tert Butyl Ether	98.1		124.6
Methylene Chloride	812.9		1,032.1
Naphthalene	36.4		46.3
Nickel	428.7	0.2	364.7
o-Xylene			
Phenol	44.8		56.9
Phosphorous			
Polycylic Organic Matter (POM) *	139.1		176.6
Propionaldehyde	1,065.1		1,352.4

Table HUN - 20 (continued)

Future Potential Hazardous Air Pollutant Emissions

Total HAP Emissions from Coal and Fuel Oil

HAP	Coal HAP Emissions lb/year	Fuel Oil HAP Emissions lb/year	Total HAP Emissions lb/year
Selenium	3,643.8	1.2	4,626.7
Styrene	70.1		89.0
Tetrachloroethylene	120.5		153.0
Toluene	672.7		854.2
Vinyl Acetate	21.3		27.0
Xylenes	103.7		131.7
Dioxin/Furans	0.0		0.0
Total Future Potential HAP Emissions (Coal and Fuel Oil):		**105,781.1 lbs/year**	**52.9 tons/year**

Worksheets for Future Potential Mercury and Hydrogen Chloride Emissions

Future Potential Mercury Emission Worksheet

Production Data

Heat Input	85,220,415 MMBtu/year	(Maximum future potential heat input rate)
	42,589,512 MMBtu/year	(Unit 1 future potential heat input rate)
	42,630,903 MMBtu/year	(Unit 2 future potential heat input rate)

Future Potential Mercury Emission Rates

Huntington Unit 1	0.84 $lb/10^{12}$ Btu	(Assumed rate from Unit 2 testing)
Huntington Unit 2	0.84 $lb/10^{12}$ Btu	(Emission rate from Unit 2 testing)

Huntington Unit 1 Mercury Emissions	35.8 lbs/year
Huntington Unit 2 Mercury Emissions	35.8 lbs/year
Total Future Potential Mercury Emissions:	**71.6** lbs/year

Future Potential Hydrogen Chloride Emission Worksheet

Future Potential HCl Emissions Reference: EPRI Equations 5-1, 5-2, 5-3, 5-4 and 5-5

	Unit 1	Unit 2	Total Future Potential HCl Release lb/year
Coal consumption, ton/year	1,927,958	1,928,844	
Coal consumption - Dry, ton/year	1,779,104	1,779,921	
% Moisture in the coal	7.72%	7.72%	
Cl, PPM	303.33	303.33	
HCl acid conver factor, compound/parent chemical	1.0284	1.0284	
FGD Bypass, fraction	0.0%	0.0%	
HCl FGD emission factor	3.0%	3.0%	
Bituminous HCl non-scrubbed emission factor	100.0%	100.0%	
Total manufactured - lb/year	1,109,998	1,110,508	
Air Release with FGD Removal	33,300	33,315.2	
Air Release with bypass	0	0	
Total HCL Air Release	33,300	33,315	**66,615**

Appendix C: Approval Order Form

This appendix includes a completed Utah Division of Air Quality Air Quality New Source Review form for an approval order for Huntington Unit 1 pollution control equipment and other planned facility projects.

Utah Division of Air Quality

New Source Review Section

Date: April 11, 2008

Form 1

General Information

? Application for: ? Initial Approval Order C Approval Order Modification

AN APPROVAL ORDER MUST BE ISSUED BEFORE ANY CONSTRUCTION OR INSTALLATION CAN BEGIN. This is not a stand alone document. Please refer to the Permit Application Instructions for specific details required to complete the application. Please print or type all information requested. All information requested must be completed and submitted before an engineering review can be initiated. If you have any questions, contact the Division of Air Quality at (801) 536-4000 and ask to speak with a New Source Review Engineer. Written inquiries may be addressed to: Division of Air Quality, New Source Review Section, P.O. Box 144820, Salt Lake City, Utah 84114-4820.

Applicable base fee for engineering review and filing fee must be submitted with the application.

General Owner and Facility Information

1. Company name and address: PacifiCorp 1407 West North Temple Salt Lake City, UT 84116 Phone No.: (801) 220-4213 Fax No.: (801) 220-4638	2. Company contact for environmental matters: William K. Lawson 1407 West North Temple Suite 210 Salt Lake City, UT 84116 Phone No.: (801) 220-4581 Fax No.: (801) 220-4307
3. Facility name and address (if different from above): Huntington Plant P.O. Box 680 Huntington, Utah 84528	4. Owners name and address: PacifiCorp 1407 West North Temple Salt Lake City, UT 84116 Phone No.: (801) 220-4213 Fax No.: (801) 220-4638
5. County where the facility is located in: Emery Co.	6. Latitude & longitude, and/or UTM coordinates of plant: Approximately: 39°-22'-51" North Latitude 111°-04'-45" West Longitude
7. Directions to plant or Installation (street address and/or directions to site) (include U.S. Coast and Geodetic Survey map if necessary): State highway 31, approximately 7 miles northwest of Huntington, Utah	
8. Identify any current Approval Order(s): DAQE-AN0238014-06 Dated August 14, 2006 DAQE-AO0238012-05 Dated March 30, 2005	
9. If request for modification, permit # to be modified: DAQE-AN0238014-06 DATED: 08/14/06	
10. Type of business at this facility: coal-fired steam electric generating plant	
11. Total company employees greater than 100? C Yes ? No	12. Standard Industrial Classification Code 4911

Approval Order Application
Form 1 (Continued)

13. Application for:

?	New construction	C	Modification
?	Existing equipment operating without permit	?	Permanent site for Portable Approval Order
?	Change of permit condition	?	Change of location

14. For new construction or modification, enter estimated start date: 09/18/10
Estimated completion date: 11/22/10

15. For change of permittee, location or condition, enter date of occurrence:

16. For existing equipment in operation without prior permit, enter initial operation date:

17. Has facility been modified or the capacity increased since November 29, 1969: ? Yes C No

Process Information

18. Site plan of facility (Attach as Appendix A):

19. Flow diagram of entire process to include flow rates and other applicable information (Attach as Appendix B):
Appendix B

20. Detailed written process and equipment description. (Attach as Appendix C) Section 2 and Appendix C
Description must include:
Process/Equip specific form(s) identified in the instructions

Fuels and their use	Equipment used in process	Description of product(s)
Raw materials used	Operation schedules	Description of changes to process (if applicable)
Production rates	(including daily/seasonal variances)	

21. Does this application contain justifiable confidential data? ? Yes C No

Emissions Information

22. Complete and attach Form 1d, Emissions Information See Section 3 and Appendix C and D
Include Material Safety Data Sheets for all chemicals or compounds that may be emitted to the atmosphere

23. Identify on the site plan (see #18 above) all emissions points, building dimensions, stack parameters, etc.

Air Pollution Control Equipment Information		
24. List all air pollution control equipment and include equipment specific forms identified in the instructions. Section D		
25. List and describe all compliance monitoring devices and/or activities (such as CEM, pressure gages). Attach as Appendix E.		
26. Submit modeling for the project if required. See attached instructions.		
27. Attach as Appendix F your proposal of what air pollution control devices, if any, or operating practices represents Best Available Control Technology. Discuss and evaluate all air pollution control technologies relevant to your situation or process.		
28. I hereby certify that the information and data submitted in and with this application is completely true, accurate and complete, based on reasonable inquiry made by me and to the best of my knowledge and belief. Signature:  Title: Hunter and Huntington Plant Managing Director		
29. Name (Type or print) Reg Soepnel	30. Telephone Number: (435) 748-6211	31. Date: April 11, 2008

Utah Division of Air Quality
New Source Review Section

Company: PacifiCorp
Site/Source: Huntington Plant
Date: April 11, 2008

Form 1d

Emissions Information

Please print neatly or type all information requested. All information must be truthful, accurate and complete before we can process your application. If you have any questions, call (801) 536-4000 and ask to speak with a New Source Review engineer. Written inquiries may be addressed to: Division of Air Quality, New Source Review Section, P.O. Box 144820, Salt Lake City, Utah 84114-4820.

Table 1. Proposed Emissions

Pollutant	Existing Emissions (tons/year)	Emissions Increases (tons/year)	Proposed Emissions (tons/year)
PM_{10}	1,759.4	-834.6	924.8
SO_2	19,141.2	-13,921.0	5,220.2
NO_X	11,901.9	-546.4	11,355.5
Carbon Monoxide	784.2	7,109.3	7,893.4
VOC	93.8	24.6	118.4
Lead	0.13	-0.05	0.08
Sulfuric Acid Mist	16.4	-14.8	1.6
Hazardous Air Pollutants (total)	505.0	-452.1	52.9
Hazardous Air Pollutants (list individually) (attach additional sheet if needed)	Table HUN-19		Table HUN-20
other pollutants (list) (attach additional sheet if needed)			

Utah Division of Air Quality
Approval Order Application
Form 1d
Emissions Information

Table 2. Controlled and Uncontrolled Emissions

Pollutant	Controlled Emissions (tons/year)	Uncontrolled Emissions (tons/year)
PM_{10}	924.8	66,314.0
SO_2	5,220.2	50,196.4
NO_X	11,355.5	32,785.0
Carbon Monoxide	7,893.4	7,893.4
VOC	118.4	118.4
Hazardous Air Pollutants (total)	52.9	52.9
Hazardous Air Pollutants (list individually) (attach additional sheet if needed)	See Appendix B; Tables HUN-19 and HUN-20	See Appendix B: Tables HUN-19 and HUN-20
other pollutants (list) (attach additional sheet if needed)		

Utah Division of Air Quality
Approval Order Application
Form 1d
Emissions Information

Table 3. Hourly HAP Emissions

Hazardous Air Pollutants (list individually)	Maximum emission rate (lbs/hour)
N/A	N/A