Morgantown Energy Associates
555 Beechurst Avenue
Morgantown, West Virginia 26505
304.284.2500 PHONE
304.284.2509 FAX

MEA
Morgantown Energy Associates

August 31, 2016

Mr. William F. Durham
Director, Division of Air Quality
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Re: Morgantown Energy Associates ("MEA")
Morgantown Energy Facility ("Morgantown Energy") – Morgantown, WV
Title V Operating Permit No. R30-06100027-2014 - CFB Boilers #1 and #2
Request for Permit Determination

Dear Mr. Durham:

Please find enclosed a Request for Permit Determination for a project proposed for the Morgantown Energy Facility. A project description is presented in Attachment E to the attached submittal, which was prepared in accordance with the recent correspondence among the Department, Morgantown Energy and our contractor, Potesta & Associates. MEA is requesting the Department's review and hopeful concurrence that MEA does not need to obtain either a pre-construction permit or a modification to the existing air operating permit prior to initiating construction activities for the project of interest.

Morgantown Energy is looking forward to receipt of the Department's review and approval to the enclosed request for permit determination. If you have any questions or concerns regarding this submittal, please contact Mr. Daryl Miller, Plant Manager at (304) 284-2500 or me at (704) 815-8022.

Very truly yours,

Todd Shirley
Projects General Manager

Attachment

PERMIT DETERMINATION FORM
GRID FLOOD REPLACEMENT
MONONGALIA COUNTY, WEST VIRGINIA

Prepared for:

Morgantown Energy Associates
555 Beechurst Avenue
Morgantown, West Virginia 26505

September 2016

TABLE OF CONTENTS

Attachments not required for this submission: Attachment D – There are no Material Safety Data Sheets.

SECTION I

PERMIT DETERMINATION FORM

WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

PERMIT DETERMINATION FORM (PDF)

FOR AGENCY USE ONLY: PLANT I.D. # _____

PDF # _____ PERMIT WRITER. _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):
Morgantown Energy Associates

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):
Morgantown Energy Facility

3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CODE:
221112

4A. MAILING ADDRESS: 555 Beechurst Avenue
Morgantown, WV 26505

4B. PHYSICAL ADDRESS: 555 Beechurst Avenue
Morgantown, WV 26505

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE MAP AS ATTACHMENT A):
Interstate 79 toward Morgantown, Exit 155 State Route 7 (toward West Virginia University), which becomes Monongahela Boulevard, turn onto Beechurst Avenue

5B. NEAREST ROAD: Monongahela Blvd.

5C. NEAREST CITY OR TOWN: Morgantown

5D. COUNTY: Monongalia

5E. UTM NORTHING (KM): 4388.10

5F. UTM EASTING (KM): 589.20

5G. UTM ZONE: 17

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED: Josh Manley

6B. TITLE: Environ. Specialist

6C. TELEPHONE: (304) 284-2518

6D. FAX:

6E. E-MAIL: Josh.Manley@nrg.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):
03-054-061-00027

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY):
R13-1085B/R14-7B and R30-061 (00027-2014

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST: No

8A. TYPE OF EMISSION SOURCE (CHECK ONE):
☐ NEW SOURCE ☐ ADMINISTRATIVE UPDATE
☐ MODIFICATION ☒ OTHER (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN?
☐ YES ☐ NO

9. IS *DEMOLITION* OR PHYSICAL *RENOVATION* AT AN EXISTING FACILITY INVOLVED? ☐ YES ☒ NO

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE: 10/ 07 / 2016 .

10B. DATE OF ANTICIPATED START-UP: 10 / 17 /2016 .

11A. PLEASE PROVIDE A DETAILED PROCESS FLOW DIAGRAM SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS ATTACHMENT B.

11B. PLEASE PROVIDE A DETAILED PROCESS DESCRIPTION AS ATTACHMENT C. Please see Attachment E for project description

12. PLEASE PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS ATTACHMENT D. FOR CHEMICAL PROCESSE, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

13A. REGULATED AIR POLLUTANT EMISSIONS:

⇒ FOR A NEW FACILITY, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ FOR AN EXISTING FACILITY, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS. No change in emissions expected as a result of the project

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM		
PM_{10}		
VOCs		
CO		
NO_x		
SO_2		
Pb		
HAPs (AGGREGATE AMOUNT)		
TAPs (INDIVIDUALLY)*		
OTHER (INDIVIDUALLY)*		

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL SUPPORTING CALCULATIONS AS ATTACHMENT E.

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. CERTIFICATION OF DATA

I, TODD SHIRLEY (TYPE NAME) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A *RESPONSIBLE OFFICIAL*** (*PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR*) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: Todd Shirley

TITLE: Projects General Manager DATE: 08 / 31 / 2016

** THE DEFINITION OF THE PHRASE '*RESPONSIBLE OFFICIAL*' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS:

☒ ATTACHMENT A ☒ ATTACHMENT B ☒ ATTACHMENT C ☐ ATTACHMENT D ☒ ATTACHMENT E

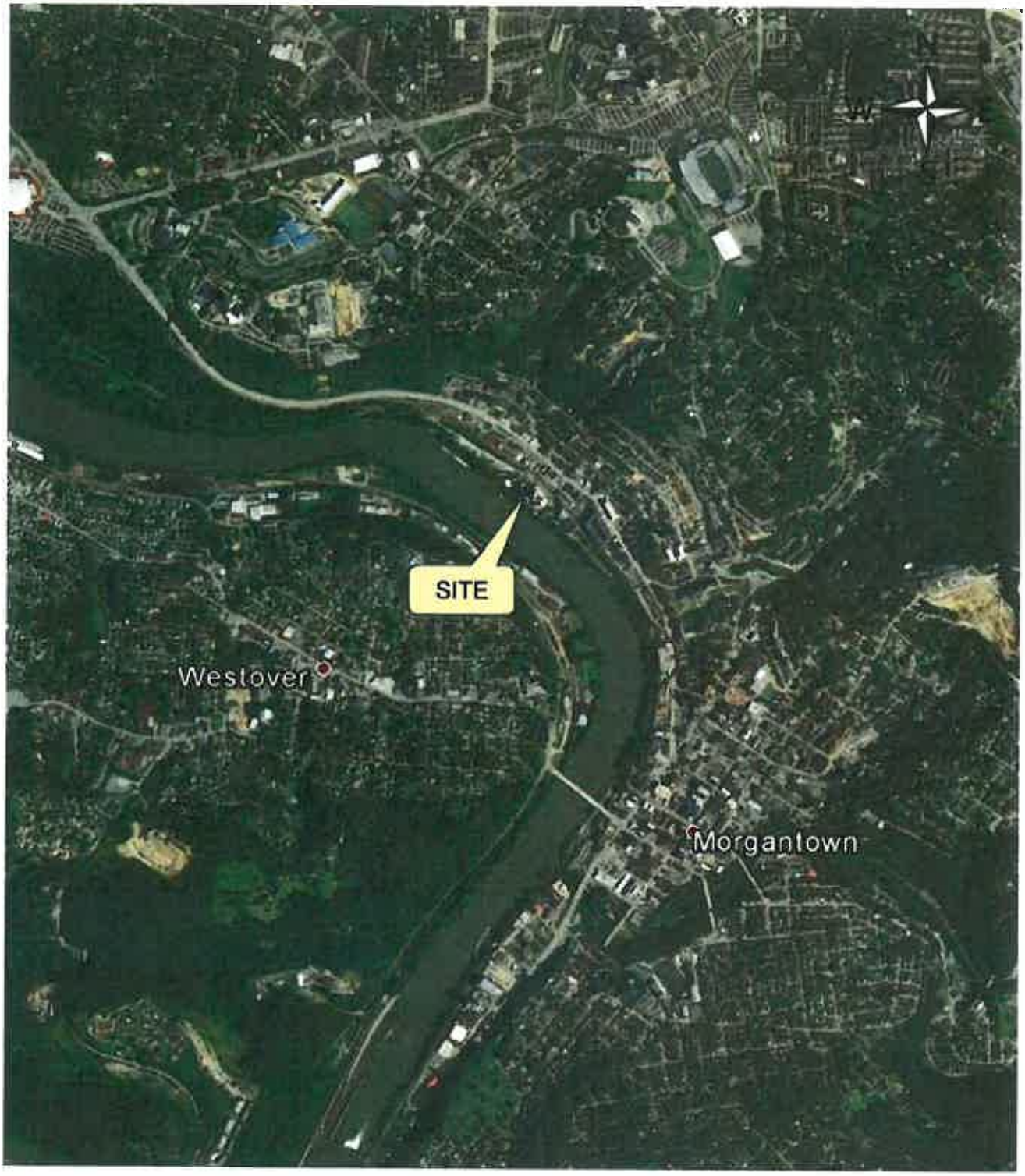
RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE

www.dep.wv.gov/daq

ATTACHMENT A

AREA MAP



POTESTA

DATE: August 2015

PROJECT NO. 0101-14-0438-001

MAPPING FOR VISUAL REPRESENTATION ONLY

SITE LOCATION MAP
MORGANTOWN ENERGY ASSOCIATES
MORGANTOWN, MONONGALIA COUNTY, WV

NOT TO SCALE

ATTACHMENT B/ATTACHMENT C

PROCESS FLOW DIAGRAM AND PROCESS DESCRIPTION

Attachments B and C to Permit Determination Form

The following text was copied from the ARIPPA website: http://arippa.org

CIRCULATING FLUIDIZED BED (CFB) TECHNOLOGY...a new and unique type of technology that converts coal refuse into alternative energy.

During normal operation CFB technology does not utilize higher temperature gas, coal, or oil burners in its furnace; instead it utilizes fluidization technology to mix and circulate the coal refuse particles with limestone as they burn in a low-temperature combustion process. The limestone captures the sulfur oxide in the combustion gas (formed during the conversion process), while the low burning temperature minimizes the formation of nitrogen. The fuel and limestone particles are recycled over and over back to the process, which results in high efficiency for fuel burning, capturing certain potential gaseous emissions, and transferring the fuel's heat energy into high-quality steam used to produce power. The vigorous mixing, long burning time, and low-temperature combustion process allow CFBs to cleanly burn virtually any combustible material. CFBs capture and control potential gaseous emissions as required by the EPA during the conversion process generally eliminating the need to add additional emission control equipment.

CFB technology has proven to be very capable of converting fuels with substantially lower British Thermal Unit (BTU) heating values such as coal refuse.

Simply put, by suspending (circulating) low quality fuel in air, it could be ignited and swirl inside the boiler like a fluid — hence the "fluidized bed" part of the name. By circulating the burning fuel in a tall boiler-furnace until all of the available carbon is converted to energy, even a low BTU source such as coal refuse can be effectively and efficiently utilized. Accordingly even coal refuse that had been randomly stockpiled and unused for decades could now be significantly used and converted into viable alternative energy....stockpiled byproducts that had never been considered as a "plentiful useful fuel" prior to the development of CFB Technology.

In addition to the environmental benefits resulting from the removal and combustion of coal refuse, ARIPPA facilities also minimize potential air emissions by incorporating state-of-the-art, CFB Clean Coal technology. Potential air emissions, as a result of converting coal refuse to alternative energy, are significantly reduced. CFB units are inherently designed, and have proven over time, to cleanly convert low BTU fuels into alternative energy.

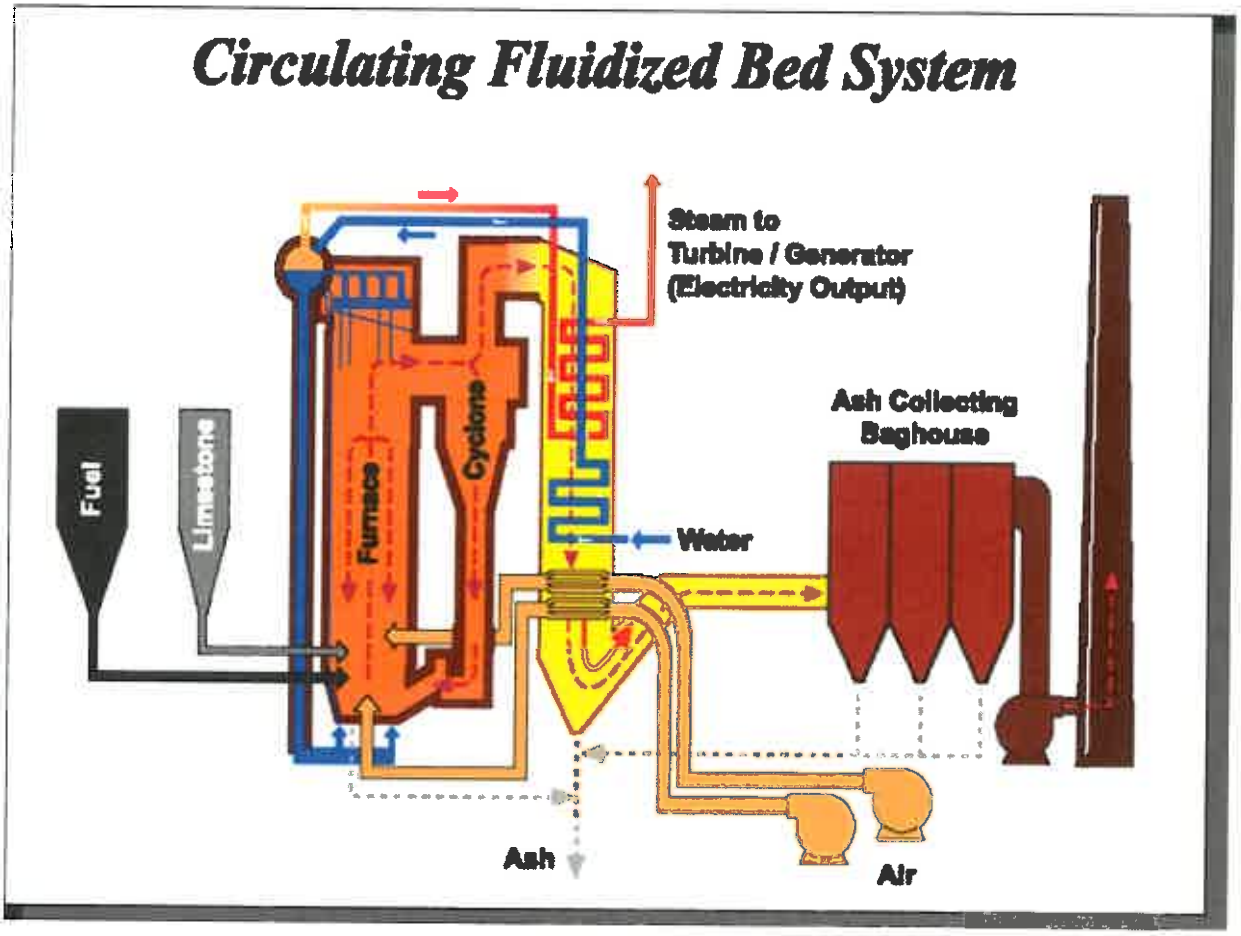
The Morgantown facility receives fuel from mining waste operations. The CFB combustion technology employed by Morgantown is perfectly suited to burn waste coal. The waste coal is located throughout West Virginia. It emits HAPs and other air pollutants and also contaminates surface water. By burning mining waste to produce electricity, waste coal processing units represent the only economically viable approach that has been identified for mitigating the waste and reclaiming hundreds of acres of land that will otherwise be unusable. As EPA recognized in the 2011 MA TS proposal, "because of the unique environmental benefits that coal refuse-fired EGUs provide, these units warrant special consideration." 76 Fed. Reg. 25,066.

Morgantown consumes approximately 400 thousand tons of waste coal every year and produces coal ash that is used beneficially to reclaim waste coal sites that are then covered by soil and vegetation. Because of historical mining practices, this mining waste is currently heaped into large uncovered piles that are exposed to the air. These piles are a significant source of hazardous air pollutants (mercury and other metals, VOCs, and acid gases) that are emitted into the ambient air in two ways. First, HAPs are emitted in fugitive dust that can be transported long distances by the prevailing winds. Second, waste coal piles often catch fire, and the uncontrolled burning of waste coal causes emissions of HAPs and other harmful pollutants, including sulfur dioxide, ozone precursors, and greenhouse gases. These sites have burned in the past, some are burning even now, and others will burn in the future unless and until the waste coal piles are reclaimed.

When this waste coal is used as fuel for a properly designed power-generating unit, emissions of HAPs and other pollutants are greatly reduced. Morgantown employs CFB boiler technology and control systems that capture over 99% of mercury in the waste coal and achieve high levels of control efficiency for other pollutants. In fact, units such as Morgantown have the lowest mercury emissions of any coal-burning units in the country.

The fuel supplied to Morgantown involves drying and covering in order to reduce emissions of HAPs and other air pollutants. Before waste coal can be used as a fuel, it must be screened, processed, blended and dried in order to reduce moisture content. This aspect of the operation is carefully managed to ensure a homogeneous fuel source after a controlled screening process. As noted above, by drying the waste coal and using it as a fuel, Morgantown fuel supplier reduces HAP emissions that would otherwise be emitted from the historic coal piles.

Morgantown also reduces HAP emissions by covering and reclaiming former waste coal sites. Because of the high ash content of waste coal, this plant produces more than 250 thousand tons of ash every year. The ash is used beneficially as part of the mining abatement and reclamation plan, in which former waste coal sites are covered in a way that allows for regrowth of vegetation. Without beneficial reclamation, such sites would remain uncovered and continue to emit HAPs into the ambient air and also cause water and land pollution.



Images of air nozzle grid floor

Pigtail-style air nozzles

Block-style air nozzles

ATTACHMENT E

EMISSIONS ESTIMATE

Morgantown Energy Associates ("MEA")
Morgantown Energy Facility ("Morgantown Energy") – Morgantown, WV
Permit to Operate No. R30-06100027-2014, Issued January 24, 2014

Attachment E to Request for Permit Determination for a Project at Circulating Fluidized Bed ("CFB") Boilers 1 and 2 (Emission Unit IDs S009J and S009K)

1.0 Introduction

1.1 Basis for Request for Permit Determination

West Virginia Code of State Rules, Title 45, Series 13, §45-13-5 - Permit Application and Reporting Requirements for Construction of and Modifications to Stationary Sources

> 5.13. The owner or operator of any stationary source which adds an additional emissions unit or makes a change in the method of operation which results in an emissions increase, or in the discharge of a new regulated air pollutant, in an amount below the levels which require a permit to modify, excluding the emissions units listed in Table 45-13B, may notify the Secretary in writing even though a permit is not required. The notification shall briefly describe the emission unit or change, the pollutants involved, the potential to emit for each pollutant increased or added and supporting calculations. Within thirty (30) working days of receipt of such a notice, the Secretary shall notify the owner or operator in writing if the Secretary believes a permit is required, setting forth the reasons with reasonable specificity or shall notify the owner or operator that insufficient information was submitted to enable a determination to be made and specify the information required.

Morgantown Energy is requesting the Department's concurrence that the project described below will not require MEA to obtain a Permit to Modify before activities for the project are commenced.

1.2 Project Summary

Morgantown Energy is a cogeneration facility that includes two circulating fluidized bed ("CFB") boilers that provide steam to (i) neighboring West Virginia University and (ii) operate a steam turbine-driven generator that produces and supplies electricity to the regional electric grid. The primary fuel for the two CFB boilers is coal refuse; natural gas is used as the start-up fuel for the boilers.

During the period from October 7 through 21, 2016, Morgantown Energy plans to perform various maintenance, repair and replacement activities (collectively identified as the "2016 outage project") during the planned outage period. The 2016 outage project does not include installing any new air emissions sources. No increase in the normal maximum fuel firing rate (MMBtu/hr) to the CFB boilers is expected to occur subsequent to the completion of the outage project. Morgantown Energy believes that all of the tasks planned for the 2016 outage project can be considered to be routine maintenance, repair and replacement ("RMRR") activities excluding the task described below.

One of the planned tasks ("project") includes replacing the existing pigtail-style air nozzles installed in the CFB boiler beds with new block-style air nozzles. The new air nozzles will be installed in a grid that is expected to provide for better mixing in the lower furnace, lower furnace temperatures and more oxidizing atmosphere, all of which improve limestone utilization. The air nozzles installed in CFB Boiler 2 will be replaced during the 2016 outage project, whereas the air nozzles installed in CFB Boiler 1 will be replaced during a similar outage project planned for 2017 or 2018. For the purposes of this analysis, the project is consistent with the definition presented in §45-14-2 – Definitions (emphasis added):

> *2.62. "Project" means a physical change in, or change in the method of operation of, an existing major stationary source.*

1.3 RMRR Analysis for the Air Nozzle Replacement Project

Morgantown Energy conducted an analysis to determine if the air nozzle replacement project can be considered to be a RMRR activity, and thus potentially exempt from New Source Performance Standard (NSPS) applicability and New Source Review (NSR) permitting requirements. The analysis for project routineness was conducted by considering the following five factors (reference the U.S. EPA NSR Applicability Analysis for the Detroit Edison Dense Pack project, May 2000):

1.3.1 Nature

- Whether major components of a facility are being modified or replaced; specifically, whether the units are of considerable size, function or importance to the operation of the facility, considering the type of industry involved
- Whether the change requires pre-approval of a state commission, in the case of utilities
- *Whether the source itself has characterized the change as non-routine in any of its own documents* (emphasis added)
- Whether the change could be performed during full functioning of the facility or while it was in full working order
- Whether the materials, equipment and resources necessary to carry out the planned activity are already on site

In consideration of the aforementioned criteria and the information presented in the Project Summary, the nature of the project is such that it is considered to be a non-routine activity.

1.3.2 Extent

- Whether an entire emissions unit will be replaced
- *Whether the change will take significant time to perform* (emphasis added)
- Whether the collection of activities, taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine
- Whether the change requires the addition of parts to existing equipment

In consideration of the aforementioned criteria and information presented in the Project Summary, the extent of the project is such that it is considered to be a routine activity.

1.3.3 Purpose

- Whether the purpose of the effort is to extend the useful life of the unit; similarly, *whether the source proposes to replace a unit at the end of its useful life* (emphasis added)
- *Whether the modification will keep the unit operating in its present condition*, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization or fuel adaptability) (emphasis added)

In consideration of the aforementioned criteria and information presented in the Project Summary, the purpose of the project is such that it is considered to be a non-routine activity.

1.3.4 Frequency

- Whether the change is performed frequently in a typical unit's life

In consideration of the aforementioned criterion and information presented in the Project Summary, the frequency of the project is such that it is considered to be a non-routine activity.

1.3.5 Cost

- Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit
- Whether a significant amount of the cost of the change is included in the source's capital expenses, or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain the day-to-day operation of the source)

In consideration of the aforementioned criteria and information presented in the Project Summary, the cost of the project such that it is considered to be a routine activity.

1.3.6 Results of RMRR Analysis for the Air Nozzle Replacement Project

U.S. EPA guidance notes that none of the five factors presented above – "standing alone – conclusively determines a project to be routine or not." Rather, one needs to "account of how each of these factors might apply in a particular circumstance to arrive at a conclusion considering the project as a whole" (reference the U.S. EPA NSR Applicability Analysis for the Detroit Edison Dense Pack project, May 2000). In consideration of the analysis presented above, Morgantown Energy concludes that the project can be considered to be a non-routine activity. Sections 2 and 3 of this document present emissions calculations and related information used in an analysis to determine if performance of the air nozzle replacement project triggers NSPS and / or NSR air permitting requirements, respectively.

2.0 NSPS Applicability Analysis

Per 40 CFR §60.2 and 40 CFR §60.14 (h), a "modification" for NSPS applicability purposes is defined as follows:

40 CFR §60.2

> *Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.*

However, the NSPS regulations also provide the following exemption:

40 CFR §60.14(h)

> *No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the 5 years prior to the change.*

Because CFB Boilers 1 and 2 are already subject to New Source Performance Standards (NSPS) requirements promulgated under 40 CFR 60 – Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978 - and no subsequent and applicable NSPS regulations have been promulgated, an NSPS applicability analysis is not required for the project.

The air nozzle replacement project also does not satisfy the criteria for "reconstruction" because the projects costs are categorized as an operating expense rather than as a capital expense.

40 CFR §§60.15(b) and (c)

> *"Reconstruction" means the replacement of components of an existing facility to such an extent that:*
> *(b)(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and*
> *(b)(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.*
> *(c) "Fixed capital cost" means the capital needed to provide all the depreciable components.*

3.0 NSR Applicability Analysis

3.1 NSR Applicability Review

Per §45-13-2 – Definitions, a "modification" and "major modification" for NSR applicability purposes are defined as follows:

> *2.17. "Modification" for the purpose of this rule means any physical change in or change in the method of operation of any existing stationary source, excluding any emissions unit which meets or falls below the criteria delineated in Table 45-13B, which:*
>
> *2.17.a. Results in an emissions increase of six (6) pounds per hour and ten (10) tons per year or more, or more than 144 pounds per calendar day, of any regulated air pollutant;*
>
> *2.17.b. Results in an emissions increase of 2 pounds per hour or 5 tons per year of hazardous air pollutants considered on an aggregated basis;*
>
> *2.17.c. Results in an increase in emissions of an air pollutant listed in Table 45-13A of 10 percent or more of the amount set forth in Table 45-13A at a facility which, prior to the physical change or change in method of operation, has the potential to emit the air pollutant at or above the amount set forth in Table 45-13A; provided that nothing in this subdivision shall affect the facility's obligation to comply with 45CSR27;*
>
> *2.17.d. Results in an increase in emissions of any air pollutant listed in Table 45-13A that would in tum result in total emissions of the air pollutant at the stationary source equal to or greater than the amounts in Table 45-13A; or*
>
> *2.17.e. Results in any regulated air pollutant emissions increase for which the owner or operator of a source voluntarily chooses to obtain a modification permit pursuant to this rule, even though the owner or operator is not otherwise required to do so.*
>
> *2.17.£ The following actions, however, shall not constitute a modification of a stationary source: (MEA: subsections f1 through f6 follow but are not copied in this document)*

> *2.15. "Major modification" shall have the meanings ascribed to this term in 45CSR14 or 45CSR19 depending upon the attainment status, with respect to the National Ambient Air Quality Standards, of the area in which a particular stationary source is located.*

Morgantown Energy is located in Monongalia County, WV. According to the current National Ambient Air Quality Standards (NAAQS) attainment designations for the location (40 CFR §81.349), no areas within Monongalia County are designated as non-attainment for TSP / PM10 / PM2.5, CO, NO_2, SO_2, ozone and lead. Consequently, the requirements under 45 CSR 14 (Prevention of Significant Deterioration, "PSD") are potentially applicable to Morgantown Energy, while the requirements under 45 CSR 19 (non-attainment NSR) are not applicable to Morgantown Energy.

Per §45-14-2 – Definitions, a "major modification" for PSD applicability purposes is defined as follows:

> *2.40. "Major modification" means any physical change in or change in the method of operation of a major stationary source which results in: a significant emissions increase (as defined in subsection 2.75) of any regulated NSR pollutant (as defined in subsection 2.66); and a significant net emissions increase of that pollutant from the major stationary source. Any significant emissions increase (as defined at subsection 2.75) from any emissions units or net emissions increase (as defined in subsection 2.46) at a major stationary source that is significant for volatile organic compounds or NOx shall be considered significant for ozone. However, the following actions do not constitute a physical change or change in the method of operation (MEA: subsections a through m follow but are not copied in this document):*

The definition of "major modification" includes the words / phrases "significant," "significant emissions increase," "net emissions increase" and "significant net emissions increase" and which are also defined under §45-14-2 and presented below:

2.74. "Significant" means:

2.74.a. In reference to a net emission increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant	Pollutant Emission Rate (tons per year)
Carbon monoxide:	100 tpy
Nitrogen oxides:	40 tpy
Sulfur dioxide:	40 tpy
Particulate matter:	25 tpy
PM10:	15 tpy
PM2.5:	10 tpy of direct PM2.5 emissions
PM2.5:	40 tpy of SO_2 emissions
PM2.5:	40 tpy of NOx emissions
(unless demonstrated not to be a PM2.5 precursor under subsection 2.66)	
Ozone:	40 tpy of VOC or NOx
Lead:	0.6 tpy
Fluorides:	3 tpy
Sulfuric acid mist:	7 tpy
Hydrogen sulfide (H_2S):	10 tpy
Total reduced sulfur (including H_2S):	10 tpy
Reduced sulfur compounds (including H_2S):	10 tpy

2.74.b. In reference to a net emissions increase or the potential of a source to emit a regulated NSR pollutant that is not listed in subdivision 2.74.a, any emissions rate; and

2.74.c. Notwithstanding subdivision 2.74.a, any emissions rate or any net emissions increase associated with a major stationary source or major modification, which would construct within ten (10) kilometers of any Class I area, and have an impact on such area equal to or greater than 1 $\mu g/m^3$ (twenty-four (24) hour average).

There are no Class I areas within 10 kilometers of Morgantown Energy. The closest Class I areas are Otter Creek Wilderness Area and Dolly Sods Wilderness Area, both of which are located more than 100 kilometers from Morgantown Energy (reference: 40 CFR §81.435 and http://www.nature.nps.gov/air/maps/images/ClassIAreas.jpg).

2.75. "Significant emissions increase" means, for a regulated NSR pollutant, an increase in emissions that is significant (as defined in subsection 2.74) for that pollutant.

2.46. "Net emissions increase" means, with respect to any regulated NSR pollutant emitted by a major stationary source, the amount of emissions by which the sum of the following exceeds zero (MEA: subsections a through i follow but are not copied in this document):

Significant net emissions increase — For a regulated NSR pollutant, a net emissions increase that is significant as defined in Section 2.74

Per §45-13-3 – Applicability (emphasis added),

3.4. Determination of major modification. -- The determination as to whether a proposed project is a major modification for a regulated NSR pollutant shall be determined in accordance with the specific provisions set forth in subdivisions 3.4.a through 3.4.f.

3.4.a. Except as otherwise provided in subsections 3.5 and 3.6, and consistent with the definition of major modification contained in subsection 2.40, a project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases -- a significant emissions increase (as defined in subsection 2.75), and a significant net emissions increase (as defined in subsections 2.46 and 2.74). The proposed project is not a major modification if it does not cause a significant emissions increase. If the proposed project causes a significant emissions increase, then the project is a major modification only if it also results in a significant net emissions increase.

3.4.b. The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to subdivisions 3.4.c through 3.4.f. The procedure for calculating (before beginning actual construction) whether a significant net emissions increase will occur at the major stationary source (i.e., the second step of the process) is contained in the definition in subsection 2.46. Regardless of any such preconstruction projections, a major modification results if the project causes a significant emissions increase and a significant net emissions increase.

3.4.c. Actual-to-projected-actual applicability test for projects that only involve existing emissions units. -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in subsection 2.63) and the baseline actual emissions (as defined in subdivisions 2.8.a and 2.8.b), for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

MEA – subsections d through f follow but are not copied in this document

The emissions analysis was conducted as described in the following sections.

3.2 Calculation of Baseline Actual Emissions ("BAE") for the Existing Electric Utility Steam Generating Units (CFB Boilers 1 and 2)

The baseline actual emissions for the existing emissions units (CFB Boilers 1 and 2) were calculated in accordance with §45-14-2 – Definitions as summarized below:

> *2.8. "Baseline actual emissions" means the rate of emissions, in tons per year, of a regulated NSR pollutant, as determined in accordance with subdivisions 2.8.a through 2.8.d.*
>
> *2.8.a. For any existing electric utility steam generating unit, baseline actual emissions means the average emission 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 Secretary shall allow the use of a different time period upon a determination that it is more representative of normal source operation.*
>
> *2.8.a.1. The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.*
>
> *2.8.a.2. The average rate shall be adjusted downward to exclude any noncompliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable during the consecutive 24-month period.*
>
> *2.8.a.3. 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.*
>
> *2.8.a.4. 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 2.8.a.2.*
>
> *MEA – subsections b through d follow but are not copied in this document*

For the purpose of this analysis, MEA tabulated the monthly air and greenhouse gas emissions for the period October 2011 through July 2016. These data along with the selected baseline actual emissions are presented in attached tables. The baseline actual emissions for the three greenhouse gases were converted to CO_2 equivalents based on the current EPA global warming potential ("GWP") values and then summed to generate a total BAE for the collective greenhouse gases ("GHGs"). Additionally, for the purposes of this analysis, MEA

- Assumed that emissions of sulfuric acid mist were equal to emissions of condensable PM. Sulfuric acid mist is a component of the PM emissions; the dew point of sulfuric acid mist is ~ 250 to 300 deg. F. Because the typical exhaust gas temperature for CFB Boilers is ~ 400 deg. F, sulfuric acid mist would be captured as condensable PM in an EPA Reference Method 5 / 202 sampling train.

- Assumed that emissions of fluorides (other than HF because HF is a hazardous air pollutant that is regulated separately under Section 112 of the Clean Air Act), hydrogen sulfide, reduced sulfur compounds, total reduced sulfur are negligible because there are no EPA-published (e.g., AP-42) emission factors for these constituents for the coal-fired boiler electric utility industry sector.

3.3 Calculation of Projected Actual Emissions ("PAE") for the Existing Electric Utility Steam Generating Units (CFB Boilers 1 and 2) Following Completion of the Project

The projected actual emissions for the existing emissions units (CFB Boilers 1 and 2) were calculated in accordance with §45-14-2 – Definitions as summarized below:

2.63. "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 anyone 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.

2.63.a. In determining the projected actual emissions under subsection 2.63 (before beginning actual construction), the owner or operator of the major stationary source:

2.63.a.1. 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

2.63.a.2. Shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions; and

2.63.a.3. 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 subsection 2.8 and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or

2.63.a.4. In lieu of using the method set out in paragraphs 2.63.a.l through 2.63.a.3, may elect to use the emissions unit's potential to emit, in tons per year, as defined under subsection 2.58.

This definition is nearly identical to that presented in the federal PSD regulations under 40 CFR 52.21(b)(41). Additional guidance concerning the calculation of projected actual emissions was presented in the preamble to 40 CFR 52.21 (Federal Register / Vol. 67, No. 251 / Tuesday, December 31, 2002 / Section II.D, Page 80196). Pertinent text is presented below:

This projection of the unit's annual emissions rate following the change is defined as the "projected actual emissions" (see, for example, § 52.21(b)(48)), and will be based on your maximum annual rate in tons per year at which you are projected to emit a regulated NSR pollutant, less any amount of emissions that could have been accommodated during the selected 24-month baseline period and is not related to the change. Accordingly, you will calculate the unit's projected actual emissions as the product of: (1) The hourly emissions rate, which is based on the emissions unit's operational capabilities following the change(s), taking into account legally enforceable restrictions that could affect the hourly emissions rate following the change(s); and (2) the projected level of utilization, which is based on both the emissions unit's historical annual utilization rate and available information regarding the emissions unit's likely post-change capacity utilization. In calculating the projected actual emissions, you should consider both the expected and the highest projections of the business activity that you expect could be achieved and that are consistent with information your company publishes for business-related purposes such as a stockholder prospectus, or applications for business loans. From the initial calculation, you may then make the appropriate adjustment to subtract out any portion of the emissions increase that could have been accommodated during the unit's 24-month baseline period and is unrelated to the change. Once the appropriate subtractions have been made, the final value for the projected actual emissions, in tpy, is the value that you compare to the baseline actual emissions to determine whether your project will result in a significant emissions increase.

For the purposes of this analysis, MEA elected to calculate the Projected Actual Emissions, Initial Calculation ("PAE") for the existing emissions units using (i) the projected pollutant–specific emission factors / rates (lb/MMBtu) and (ii) unit-specific annual utilization factors (MMBtu/yr) in any one of the 5 years following the date the unit resumes regular operation after the project. The 10-year forecast period is not applicable to this project because the project does not involve increasing an existing emissions unit's design capacity or its potential to emit of that regulated NSR pollutant and full utilization of the unit is not expected to result in a significant emissions increase or a significant net emissions increase.

The projected actual emissions data along are presented in attached tables. A comparison of the PAE values with the BAE values shows that PAE < BAE for all NSR pollutants. Consequently, there is no need to adjust the PAE values to "subtract out any portion of the emissions increase (none for this project) that could have been accommodated during the unit's 24-month baseline period and is unrelated to the change."

3.4 Calculation of the Emissions Increases for the Existing Electric Utility Steam Generating Units (CFB Boilers 1 and 2) Due to the Project

The emissions increases due to the project for existing emissions units were calculated in accordance with §45-14-2 – Definitions as summarized below:

> *3.4.c. Actual-to-projected-actual applicability test for projects that only involve existing emissions units. -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in subsection 2.63) and the baseline actual emissions (as defined in subdivisions 2.8.a and 2.8.b), for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).*

Mathematically, the operation is conducted as follows:

1. If PAE ≤ BAE, then
   "Existing Units Emissions Increase" = 0

2. If PAE (adjusted) > BAE, then
   "Existing Units Emissions Increase" = PAE (adjusted) - BAE

Per above, the existing units emissions increase = 0. Consequently, the analyses presented herein showed that the project does not result in a "modification," a "significant emissions increase" for any NSR pollutant, or a "major modification."

Yearly Information

Year	HI (MMBtu)	MMBtu (%)	Op Hrs (Hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM-10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (2) (Tons)	CO2 (Tons)	CH4 (Tons)	N2O (Tons)	CO2 e (Tons)
2011	6,791,957	100.00%	8,277	813.70	1,024.12	195.98	23.58	71.79	65.26	3.74	0.0077	48.56	662,195	39.07	5.68	664,865
2012	6,790,046	100.00%	8,447	910.03	908.75	206.92	24.84	75.67	68.80	3.97	0.0081	48.55	669,414	41.17	5.99	672,228
2013	6,674,524	100.00%	8,425	1,056.98	913.92	183.41	25.11	69.99	60.88	3.55	0.0072	47.72	673,262	40.47	5.89	676,028
2014	6,729,360	100.00%	8,475	1,108.18	1,027.52	136.06	27.84	77.61	67.49	3.85	0.0080	48.11	688,952	40.80	5.93	691,740
2015	6,477,764	100.00%	8,358	1,061.96	963.03	138.54	11.13	60.93	60.51	4.03	0.0080	46.32	675,855	39.25	5.71	678,537
2016	Information Not Available															

Monthly Information

Date	HI (MMBtu)	MMBtu (%)	Op Hrs (Hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM-10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (Tons)	CO2 (Tons)	CH4 (Tons)	N2O (Tons)	CO2 e (Tons)
Jan-11	655,788	9.66%	744	78.57	98.88	18.92	2.28	6.93	6.30	0.36	0.0007	4.69	63,114	3.74	0.54	63,670
Feb-11	502,291	7.40%	587	60.18	75.74	14.49	1.74	5.31	4.83	0.28	0.0006	3.59	49,131	2.90	0.42	49,329
Mar-11	617,290	9.09%	744	73.95	93.08	17 81	2 14	6.52	5.93	0.34	0.0007	4.41	61,087	3.61	0.52	61,333
Apr-11	566,221	8.34%	720	67.84	85.38	16.34	1.97	5.98	5.44	0.31	0.0006	4.05	55,497	3.27	0.48	55,721
May-11	580,836	8.55%	718	69.59	87.58	16.76	2.02	6 14	5.58	0.32	0.0007	4.15	55,997	3.30	0.48	56,222
Jun-11	590,176	8.69%	720	70.71	88.99	17.03	2.05	6.24	5.67	0.32	0.0007	4.22	57,544	3.39	0.49	57,776
Jul-11	572,350	8.43%	717	68.57	86.30	16.52	1.99	6.05	5.50	0.32	0.0007	4.09	56,138	3.31	0.48	56,364
Aug-11	565,021	8.32%	735	67.69	85.20	16.30	1.96	5.97	5.43	0.31	0.0006	4.04	55,922	3.30	0.48	56,148
Sep-11	286,860	4.22%	398	34.37	43.25	8.28	1.00	3.03	2.76	0.16	0.0003	2.05	28,145	1.66	0.24	28,258
Oct-11	612,275	9.01%	744	73.35	92.32	17 67	2 13	6.47	5.88	0.34	0.0007	4.38	59,247	3.49	0.51	59,485
Nov-11	591,118	8.70%	706	70.82	89.13	17.06	2.05	6.25	5.68	0.33	0.0007	4.23	57,202	3.37	0.49	57,432
Dec-11	651,731	9.60%	744	78.08	98.27	18.81	2.26	6.89	6.26	0.36	0.0007	4.66	62,873	3.71	0.54	63,126
Jan-12	638,269	9.40%	744	85.54	85.42	19.45	2.34	7.11	6.47	0.37	0.0008	4.56	62,547	3.87	0.56	62,812
Feb-12	564,655	8.32%	680	75.68	75.57	17.21	2.07	6.29	5.72	0.33	0.0007	4.04	55,026	3.42	0.50	55,260
Mar-12	605,504	8.92%	744	81.15	81.04	18.45	2.22	6.75	6.13	0.35	0.0007	4.33	58,967	3.67	0.53	59,218
Apr-12	577,419	8.50%	712	77.39	77.28	17.60	2.11	6.43	5.85	0.34	0.0007	4.13	55,830	3.50	0.51	56,069
May-12	586,689	8.64%	743	78.63	78.52	17.88	2.15	6.54	5.94	0.34	0.0007	4.19	57,940	3.56	0.52	58,183
Jun-12	580,541	8.55%	720	77.81	77.70	17.69	2.12	6.47	5.88	0.34	0.0007	4.15	56,971	3.52	0.51	57,211
Jul-12	557,371	8.21%	728	74.70	74.60	16.99	2.04	6.21	5.65	0.33	0.0007	3.99	55,074	3.38	0.49	55,305
Aug-12	569,489	8.39%	744	76.33	76.22	17.35	2.08	6.35	5.77	0.33	0.0007	4.07	55,476	3.45	0.50	55,712
Sep-12	325,006	4.79%	424	43.56	43.50	9.90	1.19	3.62	3.29	0.19	0.0004	2.32	31,745	1.97	0.29	31,879
Oct-12	572,469	8.43%	744	76.72	76.62	17.45	2.09	6.38	5.80	0.33	0.0007	4.09	57,627	3.47	0.50	57,864
Nov-12	596,080	8.78%	720	79.89	79.78	18.16	2.18	6.64	6.04	0.35	0.0007	4.26	60,074	3.61	0.53	60,321
Dec-12	616,554	9.08%	744	82.63	82.52	18.79	2.26	6.87	6.25	0.36	0.0007	4.41	62,138	3.74	0.54	62,393
Jan-13	599,119	8.98%	737	94.88	82.04	16.46	2.25	6.28	5.46	0.32	0.0006	4.28	60,380	3.63	0.53	60,628
Feb-13	552,616	8.28%	672	87.51	75.67	15.19	2.08	5.80	5.04	0.29	0.0006	3.95	55,694	3.35	0.49	55,923
Mar-13	633,216	9.49%	744	100.28	86.70	17.40	2.38	6.64	5.78	0.34	0.0007	4.53	63,816	3.84	0.56	64,079
Apr-13	534,374	8.01%	673	84.62	73.17	14.68	2.01	5.60	4.87	0.28	0.0006	3.82	53,856	3.24	0.47	54,077
May-13	567,357	8.50%	744	89.85	77.69	15.59	2.13	5.95	5.17	0.30	0.0008	4.06	57,179	3.44	0.50	57,414
Jun-13	564,133	8.45%	720	89.34	77.25	15.50	2.12	5.92	5.15	0.30	0.0006	4.03	56,877	3.42	0.50	57,111
Jul-13	556,678	8.34%	714	88.16	76.22	15.30	2.09	5.84	5.08	0.30	0.0006	3.98	56,102	3.37	0.49	56,333
Aug-13	575,382	8.62%	743	91.12	78.79	15.81	2.16	6.03	5.25	0.31	0.0006	4.11	57,988	3.49	0.51	58,226
Sep-13	553,430	8.29%	720	87.64	75.78	15.21	2.08	5.80	5.05	0.29	0.0006	3.96	55,774	3.36	0.49	56,003
Oct-13	347,293	5.20%	494	55.00	47.55	9.54	1.31	3.64	3.17	0.18	0.0004	2.48	34,894	2.11	0.31	35,038
Nov-13	586,324	8.78%	720	92.85	80.28	16.11	2.21	6.15	5.35	0.31	0.0006	4.19	58,858	3.55	0.52	59,101
Dec-13	604,600	9.06%	744	95.74	82.79	16.61	2.27	6.34	5.51	0.32	0.0007	4.32	61,843	3.67	0.53	62,094
Jan-14	600,644	8.93%	744	98.91	91.71	12.14	2.48	6.93	6.02	0.34	0.0007	4.29	61,399	3.64	0.53	61,648
Feb-14	530,561	7.88%	672	87.37	81.01	10.73	2.19	6.12	5.32	0.30	0.0006	3.79	54,827	3.22	0.47	55,047
Mar-14	619,399	9.20%	744	102.00	94.58	12.52	2.56	7 14	6.21	0.35	0.0007	4.43	63,544	3.76	0.55	63,800
Apr-14	568,028	8.44%	720	93.54	86.73	11.49	2.35	6.55	5.70	0.32	0.0007	4.06	58,502	3.44	0.50	58,737
May-14	556,309	8.27%	744	91.61	84.94	11.25	2.30	6.42	5.58	0.32	0.0007	3.98	57,460	3.37	0.49	57,690
Jun-14	538,070	8.00%	691	88.61	82.16	10.88	2.23	6.21	5.40	0.31	0.0006	3.85	55,136	3.26	0.47	55,359
Jul-14	571,669	8.50%	743	94.14	87.29	11.56	2.36	6.59	5.73	0.33	0.0007	4.09	58,582	3.47	0.50	58,819
Aug-14	610,100	9.07%	744	100.47	93.16	12.34	2.52	7.04	6.12	0.35	0.0007	4.36	62,344	3.70	0.54	62,597
Sep-14	567,721	8.44%	720	93.49	86.69	11.48	2.35	6.55	5.69	0.32	0.0007	4.06	57,451	3.44	0.50	57,687
Oct-14	382,180	5.68%	489	62.94	58.36	7.73	1.58	4.41	3.83	0.22	0.0005	2.73	38,091	2.32	0.34	38,250
Nov-14	596,811	8.87%	720	98.28	91.13	12.07	2.47	6.88	5.99	0.34	0.0007	4.27	60,407	3.62	0.53	60,655
Dec-14	587,868	8.74%	744	96.81	89.76	11.89	2.43	6.78	5.90	0.34	0.0007	4.20	61,208	3.56	0.52	61,452
Jan-15	518,026	8.00%	643	84.92	77.01	11.08	0.89	4.87	4.84	0.32	0.0006	3.70	54,365	3.14	0.46	54,579
Feb-15	499,861	7.72%	672	81.95	74.31	10.69	0.86	4.70	4.67	0.31	0.0006	3.57	52,707	3.03	0.44	52,914

Yearly Information

Year	HI (MMBtu)	MMBtu (%)	Op Hrs (Hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM-10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (2) (Tons)	CO2 (Tons)	CH4 (Tons)	N2O (Tons)	CO2 e (Tons)
2011	6,791,957	100.00%	8,277	813.70	1,024.12	195.98	23.58	71.79	65.26	3.74	0.0077	48.56	662,195	39.07	5.68	664,865
2012	6,790,046	100.00%	8,447	910.03	908.75	206.92	24.84	75.67	68.80	3.97	0.0081	48.55	669,414	41.17	5.99	672,228
2013	6,674,524	100.00%	8,425	1,056.98	913.92	183.41	25.11	69.99	60.88	3.55	0.0072	47.72	673,262	40.47	5.89	676,028
2014	6,729,360	100.00%	8,475	1,108.18	1,027.52	136.06	27.84	77.61	67.49	3.85	0.0080	48.11	688,952	40.80	5.93	691,740
2015	6,477,764	100.00%	8,358	1,061.96	963.03	138.54	11.13	60.93	60.51	4.03	0.0080	46.32	675,855	39.25	5.71	678,537
2016	Information Not Available															

Monthly Information

Date	HI (MMBtu)	MMBtu (%)	Op Hrs (Hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM-10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (Tons)	CO2 (Tons)	CH4 (Tons)	N2O (Tons)	CO2 e (Tons)
Mar-15	579,721	8.95%	744	95.04	86.19	12.40	1.00	5.45	5.42	0.36	0.0007	4.15	60,230	3.51	0.51	60,470
Apr-15	553,528	8.55%	706	90.74	82.29	11.84	0.95	5.21	5.17	0.34	0.0007	3.96	56,549	3.35	0.49	56,778
May-15	558,742	8.63%	724	91.60	83.07	11.95	0.96	5.26	5.22	0.35	0.0007	4.00	57,867	3.38	0.49	58,098
Jun-15	548,414	8.47%	720	89.91	81.53	11.73	0.94	5.16	5.12	0.34	0.0007	3.92	57,046	3.32	0.48	57,273
Jul-15	552,392	8.53%	740	90.56	82.12	11.81	0.95	5.20	5.16	0.34	0.0007	3.95	58,264	3.35	0.49	58,492
Aug-15	572,564	8.84%	744	93.87	85.12	12.25	0.98	5.39	5.35	0.36	0.0007	4.09	61,188	3.47	0.50	61,426
Sep-15	531,162	8.20%	712	87.08	78.97	11.36	0.91	5.00	4.96	0.33	0.0007	3.80	57,512	3.22	0.47	57,732
Oct-15	383,850	5.93%	492	62.93	57.07	8.21	0.66	3.61	3.59	0.24	0.0005	2.74	39,555	2.33	0.34	39,714
Nov-15	579,366	8.94%	717	94.98	86.13	12.39	1.00	5.45	5.41	0.36	0.0007	4.14	59,147	3.51	0.51	59,387
Dec-15	600,138	9.26%	744	98.39	89.22	12.84	1.03	5.64	5.61	0.37	0.0007	4.29	61,425	3.64	0.53	61,673
Jan-16	608,841	NA	NA	104.60	98.36	NA	NA	NA	NA	NA	NA	4.35	62,575	3.69	0.54	62,827
Feb-16	581,522	NA	NA	98.53	93.65	NA	NA	NA	NA	NA	NA	4.16	59,533	3.53	0.51	59,774
Mar-16	582,610	NA	NA	106.77	102.48	NA	NA	NA	NA	NA	NA	4.17	59,975	3.53	0.51	60,216
Apr-16	544,758	NA	NA	98.89	92.97	NA	NA	NA	NA	NA	NA	3.90	61,726	3.30	0.48	61,951
May-16	571,368	NA	NA	105.70	96.74	NA	NA	NA	NA	NA	NA	4.09	65,509	3.46	0.50	65,746
Jun-16	510,400	NA	NA	88.86	82.48	NA	NA	NA	NA	NA	NA	3.65	58,616	3.09	0.45	58,827
Jul-16	569,000	NA	NA	84.06	82.89	NA	NA	NA	NA	NA	NA	4.07	58,157	NA	NA	58,157
Max Monthly	691,731.0	0.1	744.0	106.77	102.48	19.45	2.56	7.14	6.47	0.37	0.0008	4.66	65,509	3.67	0.56	65,746

Emission Factors for Projected Actuals
(based on maximum monthly emissions divided by the maximum monthly heat input)

NOx (T/MMBtu)	SO2 (1) (T/MMBtu)	CO (T/MMBtu)	PM (T/MMBtu)	PM-10 (T/MMBtu)	PM2.5 (T/MMBtu)	VOC (T/MMBtu)	Pb (T/MMBtu)	H2SO4 (T/MMBtu)	CO2 (T/MMBtu)	CH4 (T/MMBtu)	N2O (T/MMBtu)	CO2 e (T/MMBtu)
1.04E-04	1.00E-04	2.98E-05	3.93E-06	1.10E-05	9.92E-06	5.73E-07	1.17E-09	7.15E-06	1.01E-01	5.94E-06	8.84E-07	1.01E-01

1. SO2 based on MATS limit of 0.20 lb/mmBtu for April 16, 2017 forward and prior to April 16 it is 0.23 lb/MMBtu (0.000115 T/MMBtu).
2. H2SO4 based on past emission factor of 0.0143 lb/MMBtu from the 2010 PM ICR Stack Test Report.

2-Year Averages																
Date		HI (MMBtu)	Op Hrs (hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (Tons)	CO2 (Tons)	CH4 (Tons)	N2O (Tons)	CO2 e (Tons)
Nov-11	Oct-13	6,758,247.50	8,429.00	963.66	923.50	196.73	24.90	73.16	65.38	3.78	0.0077	48.32	671,025	40.75	5.93	673,810
Dec-11	Nov-13	6,755,850.50	8,436.00	974.67	919.08	196.26	24.97	73.11	65.21	3.78	0.0077	48.30	671,853	40.84	5.94	674,644
Jan-12	Dec-13	6,732,285.00	8,436.00	983.51	911.34	195.16	24.98	72.83	64.84	3.76	0.0077	48.14	671,338	40.82	5.94	674,128
Feb-12	Jan-14	6,713,472.50	8,436.00	990.19	914.48	191.51	25.05	72.74	64.61	3.74	0.0076	48.00	670,764	40.70	5.92	673,546
Mar-12	Feb-14	6,696,425.50	8,432.00	996.04	917.20	188.27	25.12	72.65	64.41	3.73	0.0076	47.88	670,665	40.60	5.91	673,439
Apr-12	Mar-14	6,703,373.00	8,432.00	1,006.46	923.97	185.31	25.29	72.85	64.45	3.73	0.0076	47.93	672,953	40.64	5.91	675,731
May-12	Apr-14	6,698,677.50	8,436.00	1,014.54	928.70	182.25	25.41	72.91	64.38	3.72	0.0076	47.90	674,289	40.61	5.91	677,065
Jun-12	May-14	6,683,487.50	8,436.50	1,021.03	931.91	178.94	25.49	72.85	64.19	3.71	0.0076	47.79	674,049	40.52	5.89	676,818
Jul-12	Jun-14	6,662,252.00	8,422.00	1,026.43	934.14	175.53	25.54	72.71	63.95	3.69	0.0076	47.64	673,131	40.39	5.88	675,892
Aug-12	Jul-14	6,669,401.00	8,429.50	1,036.15	940.49	172.82	25.70	72.90	63.99	3.69	0.0076	47.69	674,885	40.43	5.88	677,648
Sep-12	Aug-14	6,689,706.50	8,429.50	1,048.23	948.96	170.31	25.92	73.25	64.17	3.70	0.0076	47.83	678,319	40.56	5.90	681,091
Oct-12	Sep-14	6,811,064.00	8,577.50	1,073.19	970.55	171.10	26.50	74.71	65.37	3.77	0.0077	48.70	691,173	41.29	6.01	693,995
Nov-12	Oct-14	6,715,919.50	8,450.00	1,066.30	961.42	166.24	26.24	73.73	64.39	3.71	0.0076	48.02	681,405	40.72	5.92	684,188
Dec-12	Nov-14	6,716,285.00	8,450.00	1,075.49	967.10	163.19	26.39	73.85	64.36	3.71	0.0076	48.02	681,572	40.72	5.92	684,355
Jan-13	Dec-14	6,701,942.00	8,450.00	1,082.58	970.72	159.74	26.47	73.80	64.18	3.70	0.0076	47.92	681,107	40.63	5.91	683,884
Feb-13	Jan-15	6,661,395.50	8,403.00	1,077.61	968.21	157.05	25.79	73.10	63.87	3.70	0.0076	47.63	678,100	40.38	5.87	680,860
Mar-13	Feb-15	6,635,018.00	8,403.00	1,074.82	967.53	154.80	25.18	72.55	63.69	3.71	0.0076	47.44	676,806	40.22	5.85	679,355
Apr-13	Mar-15	6,608,269.50	8,403.00	1,072.20	967.27	152.30	24.49	71.96	63.51	3.72	0.0076	47.25	674,813	40.06	5.83	677,551
May-13	Apr-15	6,617,846.50	8,419.50	1,075.27	971.83	150.87	23.96	71.76	63.65	3.75	0.0077	47.32	676,159	40.12	5.84	678,901
Jun-13	May-15	6,613,539.00	8,409.50	1,076.14	974.52	149.05	23.37	71.41	63.68	3.77	0.0077	47.29	676,503	40.09	5.83	679,243
Jul-13	Jun-15	6,605,679.50	8,409.50	1,076.43	976.67	147.17	22.78	71.03	63.67	3.79	0.0077	47.23	676,588	40.04	5.82	679,324
Aug-13	Jul-15	6,603,536.50	8,422.50	1,077.63	979.61	145.43	22.21	70.71	63.71	3.82	0.0078	47.22	677,668	40.03	5.82	680,404
Sep-13	Aug-15	6,602,127.50	8,423.00	1,079.00	982.78	143.64	21.62	70.39	63.76	3.84	0.0078	47.21	679,268	40.02	5.82	682,004
Oct-13	Sep-15	6,590,993.50	8,419.00	1,078.72	984.38	141.72	21.03	69.98	63.71	3.86	0.0078	47.13	680,138	39.95	5.81	682,868
Nov-13	Oct-15	6,609,272.00	8,418.00	1,082.69	989.13	141.05	20.71	69.97	63.92	3.89	0.0079	47.26	682,468	40.06	5.83	685,206
Dec-13	Nov-15	6,605,793.00	8,416.50	1,083.75	992.06	139.19	20.10	69.62	63.96	3.91	0.0079	47.23	682,613	40.04	5.82	685,349
Jan-14	Dec-15	6,603,562.00	8,416.50	1,085.07	995.27	137.30	19.48	69.27	64.00	3.94	0.0080	47.22	682,403	40.02	5.82	685,139
Feb-14	Jan-16	6,607,660.50	8,044.50	1,087.92	998.60	131.23	18.24	65.81	60.99	3.77	0.0076	47.24	682,991	40.05	5.83	685,728
Mar-14	Feb-16	6,633,140.95	7,708.50	1,093.50	1,004.91	125.87	17.14	62.75	58.33	3.62	0.0073	47.43	685,344	40.20	5.85	688,091
Apr-14	Mar-16	6,614,746.55	7,336.50	1,095.88	1,008.86	119.60	15.86	59.17	55.22	3.44	0.0069	47.30	683,559	40.09	5.83	686,299
May-14	Apr-16	6,603,111.46	6,976.50	1,098.55	1,011.98	113.86	14.69	55.90	52.37	3.28	0.0066	47.21	685,171	40.02	5.82	687,906
Jun-14	May-16	6,610,641.15	6,604.50	1,105.60	1,017.88	108.24	13.54	52.69	49.58	3.12	0.0063	47.27	689,196	40.07	5.83	691,934
Jul-14	Jun-16	6,596,806.14	6,259.00	1,105.72	1,018.04	102.80	12.42	49.59	46.89	2.96	0.0060	47.17	690,936	39.98	5.82	693,668
Max		6,811,064.00	8,577.50	1,105.72	1,018.04	196.73	26.50	74.71	65.38	3.94	0.0080	48.70	691,173	41.29	6.01	693,995

Maximum Two Year Average Emissions - Baseline Emissions

	HI (MMBtu)	Op Hrs (Hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (Tons)	CO2 (tons)	CH4 (tons)	N2O (tons)	CO2 e (tons)
Baseline	6,811,064.00	8,577.50	1,105.72	1,018.04	196.73	26.50	74.71	65.38	3.94	0.01	48.70	691,173	41.29	6.01	693,995

Projected Actuals (Annual)
(based on projected actual emission factors and projected actual heat input)

Year	HI (MMBtu)	Op Hrs (Hrs)	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (Tons)	CO2 (tons)	CH4 (tons)	N2O (tons)	CO2 e (tons)
2017	6,471,753	8,278	1,060.21	675.37	193.14	25.44	70.93	64.22	3.71	0.01	46.27	650,509	38.43	5.59	652,860
2018	6,471,753	8,278	1,060.21	647.18	193.14	25.44	70.93	64.22	3.71	0.01	46.27	650,509	38.43	5.59	652,860
2019	6,195,472	7,884	1,014.95	619.55	184.90	24.36	67.91	61.48	3.55	0.01	44.30	622,739	36.79	5.35	624,990
2020	6,489,550	8,301	1,063.12	648.95	193.67	25.51	71.13	64.39	3.72	0.01	46.40	652,298	38.53	5.60	654,656
2021	6,471,753	8,278	1,060.21	647.18	193.14	25.44	70.93	64.22	3.71	0.01	46.27	650,509	38.43	5.59	652,860
Max	6,489,550	8,301	1,063.12	675.37	193.67	25.51	71.13	64.39	3.72	0.01	46.40	652,298	38.53	5.60	654,656

PSD Applicability Determination

Category	Fuel Consumed	Limestone Consumed	NOx (Tons)	SO2 (Tons)	CO (Tons)	PM (Tons)	PM10 (Tons)	PM2.5 (Tons)	VOC (Tons)	Pb (Tons)	H2SO4 (Tons)	CO2 (tons)	CH4 (tons)	N2O (tons)	CO2 e (tons)
Net Change	NA	NA	-42.60	-342.67	-3.06	-0.99	-3.58	-0.98	-0.22	-0.0004	-2.2988	-38,674	-2.76	-0.40	-39,339
PSD Threshold	NA	NA	40	40	100	25	15	10	40	0.6	7	NA	NA	NA	75,000
PSD Permitting Triggered	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Net Change = Projected Actuals (Annual) - Baseline Emissions