PA DEP SOUTHWEST REGIONAL OFFICE **MEMO**

TO Air Quality Permit File: TVOP-11-00332 & AR-11-00332
Cambria CoGen Company / Cambria Generation Facility

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DATE September 28, 2015

RE Review of Applications for Title V Operating Permit & Acid Rain Permit
Cambria CoGen Company / Cambria Generation Facility
Cambria Township, Cambria County
APS#743588; AUTH #870034; PF#271745

Background:

On May 26, 1989, Plan Approval PA-11-306-002 was issued to authorize construction and temporary operation of the Cambria Generation Facility, a waste coal-fired, electric power plant. The equipment authorized by this PA is the equipment currently operating at the Cambria Generation Facility, with two exceptions. It did not authorize construction of the natural gas-fired, auxiliary boiler. Construction of the natural gas-fired, Nebraska Boiler (98.38 MMBtu/hr) was authorized later that year by the Department. Also, the PA included a backup, natural gas-fired, BMR Air Heater (inactive Source ID 105) to be used in waste coal drying, when both CFB power boilers were not operating. The BMR Air Heater was permanently removed from service on February 18, 2011.

The application for an initial facility-wide Title V Operating Permit (TVOP) was received on August 7, 1995. The initial TVOP was issued on August 2, 2001, with an expiration date of August 2, 2006. On January 17, 2006, the company submitted an application to renew this permit. The renewed TVOP was issued on August 25, 2006, with an expiration date of August 25, 2011. The permit was amended on April 6, 2007, to permanently remove a 12 MMBtu/hr, NG-fired, backup boiler (Source ID 034) from the permit and change the names of the Responsible Official and Permit Contact. This boiler did not exist.

An application for a Significant Modification of the TVOP was received on May 1, 2008. The modification was to add the applicable requirements of the Clean Air Interstate Rule (CAIR) to

the TVOP. A decision was made to make this change at the time of permit renewal and the application was considered disposed on February 18, 2011. The Cross State Air Pollution Rule (CSAPR) has since replaced CAIR. The applicable requirements of CSAPR have been added to the proposed TVOP.

EPA issued 40 CFR Part 63 Subpart DDDDD - National Emission Standards for Industrial, Commercial, Institutional (ICI) Boilers and Process Heaters Industrial Boiler MACT rule during 2003, with a compliance date for existing boilers of September 13, 2007. This rule was vacated by the DC Circuit of the US Court of Appeals on June 8, 2007. The vacation invoked the MACT "hammer" requirement for establishment of a case-by-case MACT for Pyropower Units A and B (Source IDs 031 and 032) at Cambria. An application for a PA to establish a case-by case MACT was submitted on November 30, 2009. It was disposed on March 29, 2011; after EPA promulgated a revised rule on March 21, 2011.

The application for a Title V Operating Permit for the Cambria Generation Facility was received on February 18, 2011. This document is a review of that application for a Title V Operating Permit. The application was found to be Administratively Complete on March 24, 2011.

The company also submitted an application for an Acid Rain Permit, received on January 25, 2012. The application was not assigned an authorization number by the Department at the time of submittal. This application is being processed by being physically attached to the renewed TVOP, in conformance with policies determined by EPA - Region III.

Emissions and Control:

The main sources at the Cambria Generation Facility are two (2) circulating fluidized bed (CFB) waste coal-fired boilers (Source IDs 031 and 032), with maximum fuel heat inputs of 630 MMBtu/hour, each, which power a single electrical generator. Net electrical output from the twin boiler system is 87-MW. Nominal heat content of the waste coal is 6,800 Btu/pound. However, this material was abandoned in the past for multiple reasons and its heat can vary significantly. Emissions from the CFB boilers are controlled by limestone fed into the fluidized bed to control sulfur dioxide (SO_2) emissions, low combustion temperatures and selective non-catalytic reduction systems (SNCR) to control NO_x emissions, coarse particulate cyclone separation with reinjection into the bed, followed by fabric filters to control PM emissions and further control SO_2 emissions. The shake and deflate cleaning baghouse has woven, GORE® High Durability, Acid-Resistant, Fiberglass Fabric filter bags. Collection of SO_2 and acid gases, including hydrochloric acid and hydrofluoric acid, by calcium in the limestone takes place in the boiler and downstream system, especially during flue gas travel through the dust cake on the filter bags. Low grade virgin coal is also burned in the boilers as necessary, and natural gas is combusted during startup and emergencies.

Supporting equipment at this site includes one (1), limited-use (≤ 5% capacity utilization), 98.38 MMBtu, auxiliary NG-fired boiler, one (1), 210-bhp, emergency diesel firepump engine, coal and limestone processing, handling and conveying equipment, an ash handling system, and plant roads.

Sources at Cambria are shown in Table 1:

Table 1
Cambria Cogeneration Company - Cambria Generation Facility (TVOP-11-00332)
Facility Criteria Pollutant Emission Control

ID	Source Name	Emission Control	Installation or Startup
031	Pyropower Unit A (630 MMBtu/hr)	Low temperature combustion in CFB limits generation of NO_x, SNCR controls NO_x, limestone in bed controls SO_2, and baghouse controls particulate	3/14/1991
032	Pyropower Unit B (630 MMBtu/hr)	Low temperature combustion in CFB limits generation of NO_x, SNCR controls NO_x, limestone in bed controls SO_2, and baghouse controls particulate	3/14/1991
033	Nebraska Boiler (98.38 MMBtu/hr)	≤5% capacity utilization, Low NO_x burner	3/14/1991
101	Fuel Preparation	Baghouse collector	3/14/1991
102	Ash Handling Pile	Ash wetted exiting CFB boilers	3/14/1991
104	Limestone Handling System	Enclosed	3/14/1991
107	Fuel Conveying[1]	Road watering and sweeping	3/14/1991
108	Emergency Diesel Firepump Engine (210-bhp)[2]		3/14/1991

[1] This source includes truck hauling road dust, transfers, and storage.

[2] Operation of this source is limited to 500 hours per year.

Cambria CoGen Company
Cambria Generation Facility
Operating Permit #TVOP-11-00332

Potential To Emit criteria pollutants from the sources at the Cambria Generation Facility are shown below:

Table 2
Cambria Cogeneration Company - Cambria Generation Facility (TVOP-11-00332)
Facility Potential To Emit Criteria Pollutants

Source	$PM_{2.5}$		PM_{10}		SO_2		CO		NO_x		VOC	
	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr
031-Pyropower Unit A[1]	13.6	59.45	18.5	80.86	556	2,435.28	84	367.48	168	736.00	0.93	4.08
032-Pyropower Unit B[1]	13.6	59.45	18.5	80.86	556	2,435.28	84	367.48	168	736.00	0.86	3.76
033-Nebraska Boiler[2]	0.71	0.16	0.71	0.16	0.056	0.01	3.8[3]	0.83	9.8[3]	2.15	0.52	0.11
101-Fuel Preparation	0.14	0.63	0.29	1.26								
102-Ash Handling Pile	0.23	1.00	0.46	2.00								
104-Limestone Handling System	0.011	0.05	0.023	0.10								
107-Fuel Conveying	1.34	5.85	2.7	11.70								
108-Emergency Firepump[4]	0.46	0.12	0.46	0.12	0.43	0.11	0.0067	0.00	0.031	0.01	0.53	0.13
Total	**30**	**126.71**	**42**	**177.05**	**1,112**	**4,870.68**	**172**	**735.80**	**346**	**1,474.16**	**2.8**	**8.08**

[1] Emission estimates for the CFB boilers with the exceptions of CO and VOC are based on permit limits.

[2] This source is a limited-use boiler further limited by RACT (RACT annual capacity utilization ≤ 5%.)

[3] Emissions based on manufacturer guarantee.

[4] Operation is limited to 500 hours per year.

Emission estimates of pollutants from sources that are not specified otherwise are based on AP-42 (Actual basis at maximum authorized operation.).

Values shown in this table were rounded from the values calculated in the spreadsheet contained in Attachment 1.

The CFB boilers at the Cambria Generation Facility are also a source of lead, another criteria air pollutant, as well as ammonia and Hazardous Air Pollutant (HAP) emissions. Actual emissions of lead from the facility are 8.33 pounds per year at maximum CFB boiler throughputs. Ammonia is considered a regulated pollutant, but is neither a criteria pollutant, nor HAP. Potential To Emit ammonia from the facility is 17.08 tons per year, based on the ammonia slip limit of 5 ppm.

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Based on information gathered during the Information Collection Request (ICR) for the utility MACT during 2010, other testing, and AP-42, The Potential To Emit HAPs from the sources at Cambria are estimated to be the following:

Table 3
Cambria Cogeneration Company - Cambria Generation Facility (TVOP-11-00332)
Facility Potential To Emit HAP Pollutants

Source ID / **Pollutant**	031 Pyropower Unit A	032 Pyropower Unit B	033 Nebraska Boiler	Units 101, 102, 104, & 107 Other Sources[1]	Unit 108 Firepump Diesel Engine	**Facility Emission of Individual HAPs**	**Units**
Hydrochloric Acid	80.07	63.51	0.00	0.00	0.00	**143.58**	**tons per year**
Hydrogen Fluoride	0.57	0.55	0.00	0.00	0.00	**1.12**	**tons per year**
Cyanide	0.27	0.27	0.00	0.00	0.00	**0.53**	**tons per year**
Benzene	0.14	0.14	0.00	0.00	0.00	**0.28**	**tons per year**
Benzyl chloride	0.07	0.07	0.00	0.00	0.00	**0.15**	**tons per year**
Isophorone	0.06	0.06	0.00	0.00	0.00	**0.12**	**tons per year**
Acetaldehyde	0.06	0.06	0.00	0.00	0.00	**0.12**	**tons per year**
Methyl chloride	0.06	0.06	0.00	0.00	0.00	**0.11**	**tons per year**
Manganese	0.05	0.05	0.00	0.00	0.00	**0.10**	**tons per year**
Mercury	6.62	6.62	0.01	0.00	0.00	**13.26**	**pounds per year**
Other HAPs	0.48	0.48	0.04	0.00	0.00	**1.00**	**tons per year**
Sum of All HAPs	**81.83**	**65.25**	**0.04**	**0.00**	**0.00**	**147.12**	**tons per year**

[1] Concentration of HAP metals in coal is normally very small (~0.1%) and HAPs in fugitive emissions of coal dust is considered to be negligible.

HAP emissions are based on AP-42 emission factors except for Hg, HCl and HF. Hg emission testing was performed on both CFB boilers at Cambria on May 14, 2010. Estimation of mercury emissions from these boilers are based on this testing. Testing has also been conducted for HCl and HF emissions. The emission factors derived from that testing was taken from the company's 2014 Annual Emission Inventory Submittal.

Values shown in this table were rounded from the values calculated in the spreadsheet contained in Attachment 1.

Potential To Emit greenhouse gas from the facility was also evaluated. Results of this evaluation are shown in Table 4

Table 4
Cambria Cogeneration Company - Cambria Generation Facility (TVOP-11-00332)
Potential To Emit Facility Greenhouse Gas (GHG)

Source	Greenhouse Gas							
	CO_2		CH_4		N_2O		Total CO_2e	
	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr
031-Pyropower Unit A[1]	124,290	544,389	13.6	60	2.0	8.7	125,223	548,477
032-Pyropower Unit B[1]	124,605	545,769	13.6	60	2.0	8.7	125,539	549,863
033-Nebraska Boiler[2]	11,500	2,518	0.22	0.047	0.022	0.0047	11,511	2,521
101-Fuel Preparation								
102-Ash Handling Pile								
104-Limestone Handling System								
107-Fuel Conveying								
108-Firepump[2]	240	60	0.0097	0.0024	00194	0.00049	241	60
Total	**260,634**	**1,092,737**	**27**	**119**	**4.0**	**17.5**	**262,515**	**1,100,921**

[1] Emission estimates for the CFB boilers are based on CEM monitoring at Cambria.

[2] Emission estimates are based on 40 CFR Part 98, Tables C-1 and C-2.

Emission of CO_2e is based on these GHG equivalents. (1 Ton CH_4 = 25 Tons CO_2e and 1 Ton N_2O = 298 Tons CO_2e, based on Table A-1 of Section A to 40 CFR Part 98.)

Values shown in this table were rounded from the values calculated in the spreadsheet contained in Attachment 1.

I. Emission Increases

The only change made at Cambria, since the renewal of the current Operating Permit on August 26, 2006, with a permanent change of emissions, was the removal of the BMR Air Heater (Source ID 105) from service. Utilization of this source had previously been limited to a maximum of 5% for compliance with Reasonable Available Control Technology (RACT) requirements. Therefore, the total increase of each pollutant emission is less than that necessary to be a significant increase (NO_x-40 TPY, CO-100 TPY, SO_2-40 TPY, $PM_{2.5}$-10 TPY, PM_{10}-15 TPY, VOC-40 TPY, lead-0.6 TPY, and CO_2e-75,000 TPY) in emissions under New Source Review. Changes to the emission baseline of the Cambria Generation Facility are shown below:

Table 5
Cambria Cogeneration Company - Cambria Generation Facility (TVOP-11-00332)
Emission Change since Last Renewal of the TVOP

Source	$PM_{2.5}$ Ton/ Year	PM_{10} Ton/ Year	SO_2 Ton/ Yr	CO Ton/ Yr	NO_x Ton/ Yr	VOC Ton/ Yr	CO_2e Ton/ Yr
Facility Emission Baseline on August 26, 2006	127	177	4,871	737	1,475	8.1	1,102,355
4/12/2013-RFD 11-00332C - Temporary Testing of a Coal Flow Aid	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/28/2013-Removal of the BMR Air Heater (Source ID 105) from Service.[1]	-0.064	-0.064	-0.0051	-0.71	-0.84	-0.046	-1,433
8/6/2014- RFD 11-00332D - Removal of dust collector not actually in service. (C04 for Source ID 107.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/21/2015-RFD 11-00332E - Injection of additive to combustor to create a marketable ash.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emission Increase	-0.064	-0.064	-0.0051	-0.71	-0.84	-0.046	-1,433
Current Facility Emission Baseline	**127**	**177**	**4,871**	**736**	**1,474**	**8.1**	**1,100,921**

[1] Source ID 105 was removed from the facility inventory because Cambria stated in a letter on the date listed that heater had not been used for ten years. Emissions listed for this source are based on EPA's AP-42 and the limit on hours of operation in RACT.

Values shown in this table were rounded from the values calculated in the spreadsheet contained in Attachment 1.

II. Additional Requirement for Testing

In the past, periodic monitoring for compliance with the particulate emission standards of 0.1 pounds per MMBtu established at 25 Pa Code § 123.11(a)(3) and particulate emission standards determined under BAT was typically accomplished through stack testing at least once during the term of permit (every five years). In accordance with the final report issued by DEP on December 22, 2010, entitled "Evaluation of Total Particulate Matter Emissions From Coal-Fired Electric Generation Units," the Department now requires stack testing to demonstrate compliance with the allowable particulate rate from coal-fired EGU boilers to be conducted at least every two years. This requirement has been added to the proposed Operating Permit, along with standardized EGU testing language. The particulate (Filterable) emission standard of 16.8 pounds from each of Pyropower Units A and B (Source IDs 031 and 032) was previously established under BAT. Testing for compliance is accomplished by EPA Reference Method 5 and shall be conducted no less often than each 24-months.

With the promulgation of a $PM_{2.5}$ standard, and the development of a refined test method (OTM-028) for fine particulate, the Department wanted information regarding $PM_{2.5}$ emissions from the largest sources of $PM_{2.5}$; coal-fired and waste coal-fired electric generating units (EGUs). On January 30, 2009, the owners/operators of 34 coal-fired electric generating units (EGU) and waste coal-fired power plants were notified in writing requesting that source testing for condensable and filterable particulates should be completed by June 30, 2009. The Cambria Generation Facility was included. Results of data collected as indicated that: CFB EGUs, with either fabric filters or electrostatic precipitators (ESPs) to control emissions of particulate, averaged total particulate emissions of 0.022 lbs/MMBTU, with the filterable portion at 0.015 lb/MMBtu (68% of total particulate) and the condensable portion at 0.007 lb/MMBtu (32% of total), pulverized coal fired EGUs without scrubber controls averaged 0.106 lb/MMBtu for total particulate emissions, with 0.031 lb/MMBtu for the filterable portion (30% of total) and 0.075 lb/MMBtu for the condensable portion (70%), and pulverized coal-fired EGUs with scrubber controls averaged 0.033 lb/MMBtu for total particulate emissions, with 0.024 lb/MMBtu for the filterable portion (73% of total) and 0.009 lb/MMBtu for the condensable portion (27%).

To provide a site specific quantification of emissions of total PM_{10} and $PM_{2.5}$ (both include filterable and condensable portions) by EPA Reference Methods 201A and 202, I would recommend that testing for filterable PM_{10}, filterable $PM_{2.5}$ and condensable particulate also be performed every two years. This additional particulate testing requirement, whose results will be used in air program planning, has been added to the proposed Operating Permit. This condition requires testing for filterable PM_{10}, filterable $PM_{2.5}$, and condensable particulate emissions, also at intervals of every two years, using EPA Reference Methods 201A and 202, or Department approved equivalent. However, should the two CFB boilers at Cambria qualify as Low Emitting EGUs (LEE) for total non-mercury metals under the requirements of 40 CFR Part 63, Subpart UUUUU, §63.10000(c)(1), I also recommend testing be conducted for compliance and site specific quantification by EPA Reference Methods 5 and 202 every three years, instead. For these LEEs to demonstrate compliance with emission limitations for non-mercury metals, Subpart UUUUU uses testing of filterable particulate by EPA Reference Method 5 every three years. This would enable the test programs that demonstrate compliance with BAT, Subpart UUUUU, and the informational condensable particulate testing to be combined, causing cost savings for both the company and the Department. It would encourage companies to reduce particulate emissions to qualify units as LEEs. Finally, particulate emissions from LEEs are of less importance, since they emit less than 50% of the emission limitation under Subpart UUUUU.

Regulatory Analysis:

This facility is a major source of air emissions for $PM_{2.5}$, PM_{10}, NO_x, SO_2, CO, and CO_2e, but is a minor source of VOC. Also, emission of a single Hazardous Air Pollutant (HAP), hydrochloric acid, is greater than 10 tons per year and emissions of the sum of all HAP emissions are greater

than 25 tons per year from the facility. Therefore, the Cambria Generation Facility is considered a major source for HAPs. A review of potentially applicable Federal New Source Performance Standards (NSPS), Federal National Emission Standards for Hazardous Air Pollutants (NESHAPs), other federal regulations, and Pennsylvania air pollution control regulations was made and the results are shown below.

I. NSPS

a. **40 CFR Part 60 Subpart D - Standards of Performance for Fossil-Fuel-Fired Steam Generators. -** This subpart applies to any fossil-fuel-fired steam generating unit that has a maximum heat input capacity of more than 250 MMBtu per hour and last commenced construction or modification after August 17, 1971, and prior to September 18, 1978. Construction of the three fossil-fuel-fired steam generators currently at Cambria was begun on March 14, 1991. Therefore, no boiler at the Cambria Generation Facility is subject to the requirements of 40 CFR Part 60, Subpart D.

b. **40 CFR Part 60 Subpart Da - Standards of Performance for Electric Utility Steam Generating Units** - This subpart applies to fossil-fueled electrical steam generating units with a maximum heat input capacity of greater than 250 MMBtu/hour and construction or modification commenced after September 18, 1978. The two CFB Boilers were constructed during 1991; each boiler has a maximum heat input capacity of 630 MMBtu/hour and supplies more than 25 MW of power to the electrical grid. Therefore, Subpart Da is applicable to Pyropower Units A and B at Cambria.

In addition, within Subpart Da, the applicability of some emission limitations is differentiated based on whether construction or modification of the facility was initiated before, or after certain dates. Under 40 CFR § 60.42Da, the particulate emission limitation has no segregation by date of construction and is 0.03 lb/MMBtu of filterable particulate as determined by EPA Reference Method 5.

Under 40 CFR § 60.43Da(a), facilities that burn solid fuel and commenced construction on, or before February 28, 2005, require control of SO_2 emissions based on a sliding scale that begins at a minimum of 70% SO_2 collection with controlled emissions of less than, or equal to 0.6 lb SO_2 per MMBtu and ends with a minimum of 90% SO_2 collection for emissions controlled to, or greater than 1.2 lb SO_2 per MMBtu. These collection efficiencies are required to be met on a 30-day rolling average basis. Monitoring requirements under Subpart Da are met by complying with the requirements of the Acid Rain Program. BAT analysis for control of SO_2 emissions resulted in a requirement that SO_2 collection efficiency of each of Pyropower Units A and B average a minimum of 92%, with compliance determined on a 30-day rolling average basis. This exceeds and ensures compliance with the SO_2 removal requirements of Subpart Da.

40 CFR § 60.44Da(a)(1) Footnote [1] states that facilities that were constructed, reconstructed, or modified before July 9, 1997 and burn at least 25 percent coal refuse are exempt from limits on NO_x emissions under Subpart Da. Therefore, 40 CFR Part 60, Subpart Da has applicable emission limits for particulate and SO_2 and monitoring, testing, work, record keeping, and reporting requirements for the CFB boilers (Source IDs 031 and 032) at Cambria.

c. **40 CFR Part 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.** - This subpart applies to any fossil-fuel-fired steam generating unit that has a maximum heat input capacity of more than 100 MMBtu per hour, with certain exceptions. Only the CFB boilers (Source IDs 031 and 032) at Cambria have a maximum heat input capacity this large. § 60.40Db(e) states that units that meet the applicability requirements of Subpart Da are not subject to Subpart Db. Therefore, no boilers at the Cambria Generation Facility are subject to the requirements of 40 CFR Part 60, Subpart Db.

d. **40 CFR Part 60 Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.** - Subpart Dc is applicable to facilities with steam generating units constructed after June 9, 1989 with a minimum heat input capacity of 10 MMBTU/hour, and a maximum heat input capacity of 100 MMBTU/hour. The only boiler at Cambria that has a maximum heat input capacity in this range is the Nebraska Boiler (Source ID 033). This boiler is only fueled by natural gas. Under Subpart Dc, natural gas-fired boilers have no emission limits for particulate or opacity and demonstrate compliance for SO_2 by recording fuel use on a monthly basis. Accordingly, the owner/operator of Cambria has continuing requirements for record keeping for the fuel throughput of the Nebraska Boiler, under 40 CFR Part 60, Subpart Dc.

e. **40 CFR Part 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.** - Storage vessels that have applicable requirements under Subpart Kb must store liquids that have a vapor pressure of at least 3.5 kilopascals (0.51 psi). The only storage tank at Cambria which contains liquid with a vapor pressure greater than this is a 240-gallon gasoline storage tank. Tanks with applicable provisions under Subpart Kb must also have a minimum capacity of 75 cubic meters. Therefore, no storage vessel at the Cambria Generation Facility is subject to the requirements of 40 CFR Part 60, Subpart Kb.

f. **40 CFR Part 60 Subpart Y - Standards of Performance for Coal Preparation and Processing Plants** - The facility contains coal preparation and processing equipment that have applicable requirements under Subpart Y. Since this equipment was constructed after October 27, 1974 and not after April 28, 2008, the equipment must comply with the provisions of § 60.251, § 60.252(a), § 60.253(a), § 60.254(a), § 60.255(a), and § 60.256(a) to comply with Subpart Y. Fuel preparation at the facility includes thermal drying. Since Cambria contains no pneumatic coal cleaning equipment, § 60.253 is not applicable to the Cambria Generation Facility.

Subpart Y, §60.254(a) limits the opacity of gases from coal processing and conveying of equipment, coal storage systems, coal transfer, and loading systems to less than 20 percent opacity. However, 25 PA Code 25 § 123.1 is more restrictive, as it allows no fugitive emissions from these sources. Compliance with § 123.1 will ensure compliance with the 20% requirement of 40 CFR §60.254(a). Subpart Y specifies monitoring, reporting, or record keeping requirements for coal prep plants with thermal dryers. The facility is also subject to reporting and record keeping requirements in the General Provisions in Subpart A, most notably 40 CFR § 60.4 and 60.7. The first requires submittal of documents to the EPA and the Department. The latter requires EPA and DEP notification of construction and initial startup and records of startup, shutdown, or malfunction.

According to 40 CFR Part 60, Subpart Y, the opacity and testing requirements of § 60.8, § 60.254, and § 60.255 require testing between 60 and 180 days of startup. Demonstration of compliance with the opacity standard for coal processing and conveying equipment at the Cambria Generation Facility would require use of EPA Reference Method 9 for Visual Observation of Opacity, with the procedure modified as described in § 60.257. However, PA DEP may grant a waiver of testing, providing the sources at the facility demonstrate ongoing compliance with 25 Pa. Code § 123.1. Therefore, sources at Cambria have not been and are not subject to performance testing under the Subpart, provided compliance with § 123.1 is demonstrated. A notification will be sent to EPA, prior to issuance of this permit that a performance test waiver has been granted to the operators of the Cambria Generation Facility.

g. **40 CFR Part 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants.** - This subpart has applicable requirements for Nonmetallic Mineral Processing Plants constructed after August 31, 1983. However, it specifies different requirements for processes constructed on, or after April 22, 2008. The definition of nonmetallic mineral, for the purposes of Subpart OOO, is defined in §60.670. This definition includes limestone.

Therefore, equipment that processes limestone at the Cambria Cogen Facility has applicable requirements under Subpart OOO. All limestone processing equipment at Cambria was constructed after August 31, 1983 and before April 22, 2008, and must meet the requirements of Subpart OOO for units constructed during this period, including particulate emission and opacity limits, monitoring, record keeping, and reporting requirements.

h. **40 CFR Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.** - The only engine at Cambria is the 210-bhp, Emergency Diesel Firepump Engine (Source ID 108). This engine is a Stationary Compression Ignition Internal Combustion Engine. However, only firepump engines manufactured after July 1, 2006, have applicable requirements under this subpart and Source ID 108 was constructed prior to this time. Therefore, no source at the Cambria Generation Facility is subject to the requirements of Subpart IIII.

i. **40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.** - The Cambria Generation Facility contains no engines which are stationary spark ignition internal combustion engines. Therefore, no source at the Cambria Generation Facility is subject to the requirements of Subpart JJJJ.

II. NESHAPs

a. **40 CFR Part 63 Subpart Q - National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers.** - This Subpart is applicable to major sources of HAPs with cooling towers that use chromium based water treatment chemicals. The cooling towers at Cambria do not use chromium based water treatment chemicals. Therefore, this subpart does not apply to any source at the Cambria Generation Facility.

b. **40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. (RICE)** - Subpart ZZZZ establishes national emissions limitations and operating limitations for HAPs emitted by RICE at major and area sources of HAP emissions. The Cambria Generation Facility is a major source of HAP emissions. The 210-bhp, Emergency Diesel Firepump Engine (Source ID 108) is a RICE. This engine is considered an existing compression ignition, emergency, RICE under Subpart ZZZZ. This engine has operating time, maintenance, and record keeping requirements under this subpart. These requirements under Subpart ZZZZ became effective May 3, 2013.

c. **40 CFR Part 63 Subpart DDDDD - National Emission Standards for Industrial, Commercial, Institutional (ICI) Boilers and Process Heaters.** - Some Industrial, Commercial, Institutional (ICI) Boilers and Process Heaters at major sources of HAPs are subject to Subpart DDDDD. Electric utility steam generating units are not subject to this subpart. The Cambria Generation Facility is a major source of HAPs. The two CFB boilers at the facility, Pyropower Units A and B, are electric utility steam generating units (EGUs). Therefore, these boilers have no applicable requirements under Subpart DDDDD.

The natural gas-fired, 98.38 MMBtu/hr, Nebraska Boiler (Source ID 033) does have applicable requirements under Subpart DDDDD. This boiler is considered an existing limited-use boiler and the effective date is January 16, 2016, under the subpart. The operator will be required to submit an initial notification, perform a tune-up for each unit once every 5 years, and operate the boiler in a manner to minimize emissions.

d. **40 CFR Part 63 Subpart UUUUU - National Emission Standards for Hazardous Air Pollutants (NESHAP) for electric utilities.** - The applicability of Subpart UUUUU as defined in § 63.10042 of this subpart, has been evaluated. The two CFB boilers (Source IDs 031 and 032) at Cambria meet the definition of fossil fuel-fired, electric utility steam

generating units (EGUs) as defined in § 63.10042: Fossil fuel-fired means an electric utility steam generating unit (EGU) that is capable of combusting more than 25 MW of fossil fuels. To be "capable of combusting" fossil fuels, an EGU would need to have these fuels allowed in its operating permit and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired means any EGU that fired fossil fuels for more than 10.0 percent of the average annual heat input during any 3 consecutive calendar years, or for more than 15.0 percent of the annual heat input during any one calendar year after the applicable compliance date. Fossil fuel is defined in 40 CFR §63.10042 as natural gas, oil, coal, and any form of solid, liquid, or gaseous fuel derived from such material.

Both Pyropower Units A and B (Source IDs 031 and 032) meet the definition of exiting units under Subpart UUUUU, since they were constructed prior to May 3, 2011. Also, neither of these boilers have been reconstructed since then under the criteria in 40 CFR §63.2. The units are subject to requirements limiting the emission of three types of HAPs. These are mercury, non-mercury metallic HAPs, and HAP acid gases. Mercury is separated from other metallic HAPs since it may be emitted in elemental form and in compounds as a gas in the flue gas. Mercury must be measured directly. Non-mercury metallic HAPs can be measured directly or using filterable particulate as a surrogate. HAP acid gases can be monitored using either HCl or SO_2 emissions as a surrogate. Because filterable particulate surrogate testing for non-mercury metallic HAPs an also be utilized to replace CAM, this surrogate sampling is specified in the permit condition for Subpart UUUUU.

Under §63.9984(b) owners/operators must comply with the requirements of this subpart by April 16, 2015, and they must demonstrate that compliance by conducting required performance testing and other activities no later than 180 days after that date. Under §63.10030(b), an initial notification must have been submitted by the owner/operators no later than 120 days after April 16, 2012. However in accordance with 40 CFR §63.6(i)(4)(i)(A), the Department has granted the owners/operators of the Cambria Generation Facility two extensions which have changed the dates for compliance with Subpart UUUUU. On April 25, 2014, the Department authorized a one year extension to the date of compliance with Subpart UUUUU, to April 16, 2016. In accordance with Clean Air Act §112(i)(3)(B) and 40 CFR §63.6(i)(4)(i)(A), an "additional extension of up to 3 years may be added for mining waste operations, if the 1-year extension of compliance is insufficient to dry and cover mining waste in order to reduce emissions of any hazardous air pollutant." Therefore, on December 3, 2014, the Department authorized an additional 3-year extension, until April 16, 2019, for the applicable requirements of Subpart UUUUU related HAP acid gases only. Tests were conducted at Cambria with temporary dry reagent injection systems on waste coal CFB units to reduce emissions of acid gas HAPs from these boilers. While these tests successfully removed acid gases, it was found that this acid gas emission control operation also produced a large increase in mercury emissions from the unit. It was determined that modification of this technology, or another technology, would be necessary to comply with the acid gas requirements of the subpart. The second extension was authorized to allow time to solve this issue. Also, on June 29, 2015, the Supreme Court of the United States

remanded the case of an appeal regarding Subpart UUUUU, MICHIGAN ET AL. v. ENVIRONMENTAL PROTECTION AGENCY ET AL. to The United States Court of Appeals for the District of Columbia Circuit for reexamination. This may lead to significant changes in the rule, including possible vacation. Therefore, Subpart UUUUU is included in the proposed permit by reference. The two CFB boilers will have emission limits, work practice, testing, monitoring, record keeping, and reporting requirements under Subpart UUUUU.

e. **40 CFR Part 63 Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers.** - Combustion boilers which produce steam or hot water and are located at area sources of HAP emissions have requirements under this subpart, with certain exceptions. The Cambria Generation Facility is a major, not an area source of HAPs. Therefore, this subpart is not applicable to any of the emission processes at Cambria.

III. Air Programs

a. Best Available Retrofit Technology (BART)

The Regional Haze regulation in 40 CFR 51.308(e) requires state implementation plans (SIPs) to contain emission limits representing Best Available Retrofit Technology (BART) for certain facilities that may reasonably be anticipated to cause or contribute to visibility impairment at a Class I area. The BART requirements apply to units that collectively have the potential to emit 250 tons per year of one or more of a visibility-impairing pollutant and were in existence on August 7, 1977, but were not in operation before August 7, 1962. Since the emission processes at the Cambria Generation Facility were constructed after 1977, BART is not an applicable requirement for Cambria.

b. NOx Allowance Program/CAIR/PA CAIR/CSAPR

The NO_x allowance requirements 25 Pa Code Sections §§123.101-123.121 and the NO_x Budget Trading Program in 25 Pa Code Sections §§ 145.1- 145.100 Subchapter A were contained in the existing Operating Permit. The CAIR NO_x and SO_2 provisions of 25 Pa Code Sections §§145.201-145.233, Subchapter D were adopted by PA DEP on April 11, 2008, and became effective on April 12, 2008. These regulations addressed the requirements of EPA's Clean Air Interstate Rule (CAIR) with some requirements specific to emission sources in Pennsylvania. These conditions superseded the requirements in both the PA Code and also the Federal Code of Regulations which comprised the default CAIR program for Pennsylvania. The requirements in this subchapter, as well as the remaining applicable federal requirements, are known as "PA CAIR." EPA announced final acceptance of these requirements as a revision to the State

Implementation Plan (SIP) for the Commonwealth of Pennsylvania on December 10, 2009. These requirements replaced the NO_x allowance and trading program of §§123.101-123.121 and §§ 145.1- 145.100.

On December 23, 2008, the US Court of Appeals for the DC Circuit decided that EPA had exceeded its authority under the Clean Air Act in adopting the federal CAIR. The court decision remanded the CAIR rule, and required EPA to develop a rule within a reasonable time, under court guidelines to replace it. However, the CAIR rule was not vacated by this decision. Until CAIR was replaced, its implementation, including review of modifications of the federal requirements allowed by states, continued. This allowed EPA to review and approve the requirements for PA CAIR after the date that the CAIR Rule was remanded.

On July 6, 2011, EPA finalized the Cross-State Air Pollution Rule ("CSAPR") which was intended to replace CAIR and achieve greater reasonable progress towards the goal of achieving natural visibility conditions in Class I areas than the source-specific BART, in those states covered by the Transport Rule. Within this proposed rule, EPA stated that it anticipated the Transport Rule will result in greater emission reductions overall than CAIR. This rule had an effective date of January 1, 2012, and would have replaced the requirements of PA specific CAIR on that day. However, the United States Court of Appeals for the D.C. Circuit issued an order granting a motion to stay CSAPR on December 30, 2011. Per this order, "Respondent [EPA] is expected to continue administering the Clean Air Interstate Rule pending the court's resolution of these petitions for review." Final action was not taken on these proposals. On August 21, 2012, the same court vacated CSAPR, deciding that in the rule, EPA had exceeded the authority given it by Congress in the Clean Air Act in multiple aspects. Therefore, the Pennsylvania specific rule for CAIR remained in effect, at that time.

On April 29, 2014, the U.S. Supreme Court issued an opinion reversing the August 21, 2012, D.C. Circuit decision that had vacated CSAPR. Following the remand of the case to the D.C. Circuit, EPA requested that the court lift the CSAPR stay and toll (delay) the CSAPR compliance deadlines by three years. On October 23, 2014, the D.C. Circuit granted EPA's request. On November 21, 2014, EPA issued a ministerial rule that aligned the dates in the CSAPR rule text with the revised court-ordered schedule, including 2015 Phase 1 implementation and 2017 Phase 2 implementation. The applicable requirements of CSAPR are now in effect and have replaced the requirements of the NO_x Budget and NO_x Allowance Trading Program contained in the existing Operating Permit. CSAPR has requirements for company representation, emission trading, monitoring, record keeping and recording for the Main Boilers at Cambria.

c. **40 CFR Part 64, Compliance Assurance Monitoring. (CAM)**

This part was promulgated on October 22, 1997. The CAM Rule requires monitoring sufficient to provide a reasonable assurance of compliance with applicable emission requirements. In

accordance with 40 CFR §64.2(a), this rule applies to "pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source."

Each of the CFB boilers is subject to emission limitations for particulate matter, SO_2, NO_x, CO and certain HAPs (when 40 CFR 63, Subpart UUUUU becomes applicable). Cambria Generation Facility does not use a control device to achieve compliance with the CO limits for the CFB boilers, so CAM for CO is not required. They currently do use control devices to achieve compliance with their limits for particulate matter, SO_2, NO_x; and will use control devices to achieve compliance with their limits for certain HAPs. Additionally, the units do have potential pre-control emissions of particulate matter, SO_2, NO_x and HCl that are equal to or greater than the major source threshold for these pollutants. Therefore, the requirement for CAM for these pollutants must be evaluated.

In accordance with 40 CFR §64.2(b)(1)(i), CAM does not apply to emission limitations or standards proposed by the Administrator after November 15, 1990, pursuant to section 111 or 112 of the Act. The HCl limit established by 40 CFR 63, Subpart UUUUU was proposed by the Administrator after November 15, 1990; therefore CAM is not required for HCl. In accordance with 40 CFR §64.2(b)(1)(vi) CAM does not apply to emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method. TVOP-11-00332 specifies CEMs for SO_2 and NO_x, so CAM is not required for these pollutants. Therefore, a CAM plan is only required for particulate matter.

In the CAM Plan for the two CFB Pyropower boilers, the company indirectly monitors the particulate matter emissions using opacity as a surrogate. Opacity is continuously monitored with a Continuous Opacity Monitor (COM) in the each of the two flues of the stack that exhausts the flue gas from these boilers. A properly operating baghouse is a constant emitter, meaning that the emission rate of particulate remains the same with changing inlet flue gas dust concentration. This CAM Plan is included as a condition for Pyropower Boilers Units A and B in the existing Operating Permit and is included in the proposed TVOP.

The effective date for 40 CFR, Part 63, Subpart UUUUU-National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units for Pyropower Units A and B (Source IDs 031 and 032) at Cambria is April 16, 2016. Subpart UUUUU in the proposed Title V Operating Permit requires that quarterly testing of these boilers for particulate by EPA Reference Method 5 take place within 90-days of its effective date and be

repeated at no greater than quarterly intervals, to be used as a surrogate to demonstrate compliance with emissions of total, non-mercury, metallic HAPs for the subpart.

Under Subpart UUUUU, when emission of particulate is used as a surrogate for total, non-mercury, metallic HAP emissions, the subpart requires quarterly testing by EPA Reference Method 5. The surrogate emission limit is 0.03 lb/MMBtu of particulate. If a unit qualifies as a Low Emitting EGU (LEE) by measuring less than 50% of the appropriate emission limit for 36-months with 12 consecutive, quarterly EPA Reference Method 5 test results of less than 0.015 lb/MMBtu for particulate, testing may be reduced to once every three years until a test measures 0.015 lb/MMBtu, or greater.

40 CFR § 64.2 states:

(b) "*Exemptions*—(1) *Exempt emission limitations or standards.* The requirements of this part (Part 64-Compliance Assurance Monitoring) shall not apply to any of the following emission limitations or standards:

(i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act."

This exemption exists because EPA is required to write requirements that demonstrate continuous compliance with emission limitations into regulations proposed after this date. Subpart UUUUU, § 63.1000(c)(1)(iv) states that existing, coal-fired EGUs may demonstrate compliance with the surrogate emission limit of particulate for total, non-mercury, metallic HAPs by an initial performance test (by EPA Reference Method 5) and repetition of this test repeated quarterly. The proposed permit contains this requirement, which is direct measurement of particulate emissions. To meet the particulate emission limit for the CFB Boilers of 16.8 pounds per hour at full load, developed in the Plan Approval, emissions must be less than 0.027 lb/MMBtu. This emission limit is 10% lower than the 0.03 lb/MMBtu allowed by Subpart UUUUU. Therefore, the proposed permit has requirements to directly monitor particulate, removing the need for a particulate matter CAM plan for these sources, once this requirement becomes effective. Since the permit condition which defines 40 CFR Part 63, Subpart UUUUU, requires that the demonstration of compliance with emissions for non-mercury metallic HAPs be by particulate testing, a disclaimer has been added to the condition specifying the CAM Plan. This disclaimer states that the requirement for a CAM plan is no longer applicable, once filterable particulate testing is an applicable requirement.

d. **40 CFR Parts 72, 73, 75, 77 - Acid Rain Program**

The Cambria Generation Facility has not had an issued Acid Rain Permit even though it has been subject to the applicable requirements of the CAIR SO_2, NO_x, and NO_x Ozone Season Trading

Programs. Even though an application for an Acid Rain Permit was submitted during 2012, analysis for applicability of the requirement for an Acid Rain Permit was conducted as part of this review. 40 CFR § 72.6 Applicability, defines which facilities must possess an Acid Rain Permit. Subsection (b) lists types of units that are not required to have an Acid Rain Permit. Subsection (b)(6) in this list states "An independent power production facility that: (i) Has, as of November 15, 1990, one or more qualifying power purchase commitments to sell at least 15 percent of its total planned net output capacity; and (ii) Consists of one or more units designated by the owner or operator with total installed net output capacity not exceeding 130 percent of its total planned net output capacity. If the emissions rates of the units are not the same, the Administrator may exercise discretion to designate which units are exempt." Cambria met the definition of Independent Power Production Facility (IPP) in Part 72 and was classified by the Federal Energy Regulatory Commission (FERC) as a small power production facility. The status was because its primary energy source is a waste (Waste coal that has been considered a waste, rather than a product, longer than one year.) and the facility committed to delivery of electric power prior to November 15, 1990. This made it a Qualified Facility (QF) for the Public Utility Regulatory Policies Act of 1978 (PURPA). However, the twenty (20) year agreement with PennElec to purchase the electricity generated at Cambria expired in 2011 and power is now sold to the PJM grid through its auction process. Therefore, an Acid Rain Permit is now necessary for the Cambria Generation Facility.

Since Cambria is also subject to these trading programs, it has applicable requirements contained in 40 CFR, Part 72 - Permits Regulation, Part 73 - Sulfur Dioxide Allowance System. Part 75 – Continuous Emission Monitoring, Permits Regulation, Part 77 - Excess Emissions, and these parts are included by reference in the proposed Operating Permit.

e. 40 CFR Part 98, Mandatory Greenhouse Gas Reporting

This part was promulgated on October 30, 2009. Per 40 CFR Section 98.2(a), the Greenhouse Gas (GHG) reporting requirements and related monitoring, record keeping, and reporting requirements of this part apply to the owners and operators of any facility that is located in the United States and that meets the requirements of either paragraph (a)(1), (a)(2), or (a)(3) of this section. The CFB boilers at Cambria are in the category of an electricity generation units that report CO_2 mass emissions year round through 40 CFR part 75 (subpart D) listed in Table A-3 of the subpart, that are subject to this part under (a)(1) of this section. Pyropower Units A and B (Source IDs 031 and 032) are subject to the Acid Rain Program and therefore the facility is subject to this part. Therefore, the station is subject to 40 CFR Part 98 Subpart C for the calendar year 2010 and later years. This makes the station subject to specific requirements of Part 98.

However, public comments to the Greenhouse Gas Mandatory Reporting Rule (GHG MRR) questioned the requirements of this rule to meet current definitions of ''applicable requirement''

at 40 CFR 70.2 and 71.2. The commentators requested that USEPA confirm their interpretation of the regulations. The EPA provided the following response: "As currently written, the definition of ''applicable requirement'' in 40 CFR 70.2 and 71.2 does not include a monitoring rule such as today's action, which is promulgated under CAA sections 114(a)(1) and 208." The preamble of the final version of the GHG MRR, located at 74 Fed Reg 209, pp. 56287-56288, states that the GHG MRR is not considered an "applicable requirement" under the Title V Operating Permit program. Therefore, this Subpart, while an obligation for the Cambria Generation Facility, is not considered an applicable requirement for this Title V Operating Permit.

The Greenhouse Gas Tailoring Rule was issued in May 2010. This rule establishes a process for conducting Prevention of Significant Deterioration (PSD) reviews, including Best Available Control Technology (BACT) determinations for control of greenhouse gases (GHG) when a new source or a modification to an existing source results in emissions of GHGs in excess of certain thresholds. Since May, 2010, there have not been any modifications to the Cambria Generation Facility that triggered a GHG PSD review.

IV. Pennsylvania Air Pollution Control Regulations

The Pennsylvania Department of Environmental Protection (PADEP) is authorized to enforce rules for the control of air pollution. The following State Air Pollution Control regulations were evaluated for their applicability to proposed operating permit:

a. **25 Pa Code § 123.1 (Prohibition of Certain Fugitive Emissions)** - Operation of this facility has applicable emission generating activities which are limited under this regulation.

b. **25 Pa Code § 123.2 (Fugitive Particulate Matter)** - The operation of this facility has applicable emission generating activities from stockpiling and the use of plant roads which are limited to zero at the point these emissions pass outside the property, under this regulation.

c. **25 Pa Code § 123.11 (Combustion Units)** - Combustion units are defined in § 123.1 as stationary equipment used to burn fuel primarily for the purpose of power or heat by indirect heat transfer. This definition includes external combustion sources, but excludes internal combustion sources since they operate by direct heat transfer. Pyropower Units A and B (Source IDs 031 and 032) and the Nebraska Boiler (Source ID 033) are combustion units.

The particulate emission limitation of 0.1 lb/MMBtu described in Part (a)(3) of this section applies to the two CFB boilers (Source IDs 031 & 032) at Cambria. Emissions from the Nebraska Boiler are calculated based on (a)(2) and limited to a maximum of 0.276 pounds per MMBtu. Compliance with these limits is based on filterable particulate only.

d. **25 Pa Code § 123.13 (Processes)** - Processes which are not combustion units at Cambria are subject to this regulation, which limits emission of particulate. In the regulation,

certain emission processes have limitations based on the type of material throughput. None of the emission limitations based on the material throughput of specific emission processes exist at Cambria. Therefore, the emission limitations in §123.13(c) apply to all of the sources at Cambria with the exception of the three boilers (Source IDs 031, 032, and 033). This section is applicable to Source IDs 101, 102, 104, 107, and 108.

e. **25 Pa Code § 123.21 (General)** - This regulation prohibits the concentration of oxides of sulfur in emitted flue gas to 500 ppm, expressed as SO_2. Emissions from combustion units are limited by § 123.22, instead. None of the other processes at Cambria are described in § § 123.23 - 123.25. Therefore, this section is applicable to sources which are not defined as combustion units and can emit SO_2. This is the diesel engine. (Source ID 108)

f. **25 Pa Code § 123.22 (Combustion Units)** - The Cambria Generation Facility is not located in an air basin. This section limits SO_2 emissions from the Nebraska Boiler and the coal-fired EGUs at the station to 4.0 pounds SO_2 per MMBtu. The FGD systems reduce SO_2 to below this emission rate and compliance is verified by the SO_2 CEM. The BAT requirement for a minimum SO_2 reduction of 92% makes this requirement redundant.

g. **25 Pa Code § 123.25 (Monitoring Requirements)** - The requirements of this section apply to the coal-fired boilers at Cambria. However, under 40 CFR § 72.6, Cambria must comply with the federal requirements for CEM monitoring in 40 CFR Part 75. Part 75 exceeds the requirements of § 123.25 and these Pa code requirements are not listed in the proposed Operating Permit.

h. **25 Pa Code § 123.31 (Odor Emissions)** - The facility is subject to this regulation and daily inspections demonstrate compliance.

i. **25 Pa Code § 123.41 (Limitations - Visible Emissions)** – The facility is subject to this regulation which limits opacity to less than 20% for periods aggregating more than three minutes in any 1 hour and less than 60% at any time. Daily inspections demonstrate compliance.

j. **25 Pa Code § 123.42 (Exceptions - Visible Emissions)** - These exceptions are applicable to the limitations in paragraph 123.41 and the opacity limitation established under §123.41.

k. **25 Pa Code Chapter § 127.441 (Operating permit terms and conditions)** - Operators of the Cambria Generation Facility shall fulfill the following requirements:

A. The permittee shall maintain comprehensive, accurate records which, at a minimum, shall include:

   a. The number of hours per month that each piece of equipment operated.

   b. The amount of fuel used per month in each piece of equipment.

B. The owner/operator shall keep daily records of all product delivery. These records shall be kept on site for a period of five years and be made available to the Department upon request.

l. **25 Pa Code Chapter § 129.14 (Open Burning Operations)** - The Cambria Generation Facility is not located in an air basin. This section allows open burning outside of air basins provided certain requirements are met.

V. Existing Operating Permit

Emission limitations and other conditions from the existing Operating Permit were carried forward into this operating permit with some deletions, changes and additions. The applicability of specific NSPS and MACT standards that have become effective since the issuance of this TVOP have been evaluated and the applicable requirements included in the proposed operating permit. Requirements for a daily walk-around inspection of the facility for the presence of visible emissions and malodors have also been added. An existing source, the 210-bhp Emergency Firepump Engine, was added as Source ID 108. As mentioned above, Cambria is now required to have an Acid Rain Permit and this was added. 40 CFR Part 60, Subpart Dc was added to Section D, Source ID 033. 40 CFR Part 60, Subpart Y was added to Section D, Source ID 101. 40 CFR Part 60, Subpart OOO was added to Section D, Source ID 104. 40 CFR Part 63, Subpart ZZZZ was added to Section D, Source ID 108. Applicable requirements for 40 CFR Part 60, Subpart Da, Part 63, Subpart UUUUU, and the Cross-State Air Pollution Rule (CSAPR) have been added to Section E, Source Group G01 Main Boilers.

The existing permit contains restrictions limiting emissions, carried forward from Plan Approval No. 11-306-002A, issued on March 13, 1996, and Reasonably Available Control Technology (RACT) Permit No. 11-000-332, issued December 28, 1995. These limits were necessary to conform to Best Available Technology (BAT) and RACT. In the proposed permit, a note was added in each these conditions, stating the original source of the requirement.

Cambria CoGen Company
Cambria Generation Facility
Operating Permit #TVOP-11-00332

Conclusions and Recommendations:

Cambria CoGen Company has proposed in this application to operate a waste coal and coal powered electrical power plant in Cambria Township, Cambria County. An inspection of the facility was conducted on August 26, 2014, by Phil Sapala of PA DEP and no deviations from the conditions of the Title V Operating Permit were found. The application for an initial Acid Rain Permit is attached to the proposed TVOP and would also be issued by this action. The last stack test for particulate was conducted on March 31 and April 2, 2009, and stack emissions from the two CFB Boilers were measured and found to be in compliance with the limitations in the permit. Testing for ammonia was last conducted on April 23, 2010, and both boilers were found to be in compliance.

I recommend the issuance of an Operating Permit, subject to the attached permit conditions, for this application.

Permit Authorized by this Authorization			
Quantity	Facility Name		PF ID: 271745
1	Cambria CoGen Company /Cambria Generation Facility (OP-11-00332)		
		APS ID: 743588	Auth. ID: 870034
Short Descr.	Electric power plant with 2-coal refuse-fired CFB boilers (87-MW Total Output)		
Permits Inactivated by this Authorization			
Permit #			
		APS ID:	Auth. ID:

Attachment 1
Cambria Cogen-Cambria Generation Facility (TVOP-11-00332)
Emission Caculations

Cambria Cogen-Cambria Generation Facility

MLH
DEP
09/04/2015

Processes

Source ID	Name						
31	Pyropower Unit A	630.00 MMBTU/HR	8760 hours/yr	Coal & NG			
32	Pyropower Unit B	630.00 MMBTU/HR	8760 hours/yr	Coal & NG			
33	Nebraska Boiler	98.38 MMBTU/HR	438 hours/yr	NG	Limited to 5% maximum of capacity utilization by RACT.	0.4	4
101	Fuel Handling System	2700000 Tons/Year	8760 hours/yr			8.618088	86.18088
102	Ash Handling Pile	78.5 Tons/Hour	8760 hours/yr				
104	Limestone Handling System	50.00 Tons/Hour	8760 hours/yr				
107	Fuel Conveying (Road Dust, Transfer, and Storage losses)	35771 Truck miles/Year	8760 hours/yr				
108	Emergency Diesel Firewater Pump Engine	210 bhp	500 hours/yr	Diesel			

Begin Emission Calculations

(For these calculations: Maximum throughput is used. When emissions are limited, those limits are used. When emissions do not have a regulatory limit, the actual emission is estimated.
The estimate is based on the most accurate source available. Possible sources of information are site specific testing, EPA's AP-42, or other sources.)

For AP-42, Coal: 26 MMBtu/ton coal — AP-42, Table 1.1-5
1 lb-mole = 385.4 ft^3 at 68 Deg. F & 1 atm
M.W. Ammonia = 17

Criteria Emissions:

		FlueGas		
31	Pyropower Unit A	240,000 ACFM	400 Deg F	
32	Pyropower Unit B	240,000 ACFM	400 Deg F	

To determine PM10 & PM2.5 PTE from each boiler

16.8 PPH of PT (limit)

=0.0092/0.011 — 0.836 Ratio of PM10-FIL/PM-Fil (AP-42, Volume 1, Figure 1.1-1)
=0.006/0.011 — 0.545 Ratio of PM2.5-FIL/PM-Fil (AP-42, Volume 1, Figure 1.1-1)

0.007 lb/MMBtu PM-COND, PA ICR for Particulate, December 22, 2010, Average of Waste Coal Boiler Tests

For VOC use testing based company emission factor

	Unit A	Unit B		
Annual Boiler Heat Input	4,872,987	4,996,923	MMBtu/year	(From EPA/CAMD for 2014)
2014 VOC reported emission	3.6	3.4	tons per year	(From 2014 AIMS EI report)
Emission Factor	0.00148	0.00136	lb VOC/MMBtu	

	PM2.5	PM10	SO2	CO	NO2	VOC	Lead	NH3
31	13.57 lb/MMBtu	18.46 PPH	556 PPH	83.9 lb/hr	736 TPY	0.00148 lb/MMBtu	3.71E-04 PPH	5 PPMV
32	13.57 lb/MMBtu	18.46 PPH	556 PPH	83.9 lb/hr	736 TPY	0.00136 lb/MMBtu	5.80E-04 PPH	5 PPMV
31	Permit Limit-Subtracting PT>PM2.5-FIL and adding PM-COND	Permit Limit-Subtracting PT>PM10-FIL and adding PM-COND	24-hour average, hourly emission limit.	24-hour average, hourly emission limit.	Annual Emission Limit.	Stack Testing	Stack Test ICR	Emission Limit
32						Stack Testing	Stack Test ICR	Emission Limit

Natural Gas — 1,040 Btu/FT^3

	PM-2.5	PM-10	SO2	CO	NO2	VOC
33 Nebraska Boiler	7.6 lb/MMCF	7.6 lb/MMCF	0.6 lb/MMCF	3.8 lb CO/hr	9.84 lb NOx/hr	5.5 lb/MMCF
33	All PM-10FIL is PM-2.5 Fil	AP-42, 1.4-2	AP-42, 1.4-2	Manu Guar.	Manu Guar.	AP-42, 1.4-2

	PM2.5	PM10				
	0.63 TPY	1.26 TPY	For Source ID 101, application reported:	4.2 TPY PM10@2.7MM TPY. This Tput is limited by the CFB Boilers to:	808609	TPY. Therefore, the value was proportioned to be based on maximum possible Tput.
101 Fuel Handling System						
102 Ash Handling Pile	1.00 TPY	2 TPY				

104	Limestone Handling System	0.05 TPY	0.1 TPY
107	Fuel Conveying (Road Dust, Transfer, and Storage losses)	5.85 TPY	11.7 TPY
101		(AP-42 Dry Coal Cleaning PM-2.5=15%,PM10=30%)	
102			1995 TVOP application
104			
107			

		PM2.5		PM-10		SO2		CO		NO2		VOC	
108	Emergency Diesel Firewater Pump Engine	0.0022	lb/hp-hr	0.0022	lb/hp-hr	0.00205	lb/hp-hr	0.00668	lb CO/hr	0.031	lb NOx/hr	0.0025	lb/hp-hr
108		For IC Eng: All PM-10FIL is PM-2.5 Fil		AP-42, 3.3-1		AP-42, 3.3-1		AP-42, 3.3-1		AP-42, 3.3-1		AP-42, 3.3-1	

Criteria Emission Table

ID	Source	Pollutant												Lead		NH3	
		PM2.5		PM10		SO2		CO		NOx		VOC					
		Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr
31	Pyropower Unit A	13.6	59.45	18.5	80.86	556	2,435.28	84	367.48	168	736.00	0.93	4.08	0.00037	1.62E-03	1.95	8.54
32	Pyropower Unit B	13.6	59.45	18.5	80.86	556	2,435.28	84	367.48	168	736.00	0.86	3.76	0.00058	2.54E-03	1.95	8.54
33	Nebraska Boiler	0.72	0.16	0.72	0.16	0.057	0.01	3.8	0.83	9.8	2.15	0.52	0.11	**Unit A**	**3.25 lb/Yr**		
101	Fuel Handling System	0.14	0.63	0.29	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**Unit B**	**5.08 lb/Yr**		
102	Ash Handling Pile	0.23	1.00	0.46	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
104	Limestone Handling System	0.011	0.05	0.023	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
107	Fuel Conveying (Road Dust, Transfer, and Storage losses)	1.34	5.85	2.7	11.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
108	Emergency Diesel Firewater Pump Engine	0.46	0.12	0.46	0.12	0.43	0.11	0.0067	0.00	0.031	0.01	0.53	0.13				
	Total	**30**	**126.71**	**42**	**177.05**	**1,112**	**4,870.68**	**172**	**735.80**	**346**	**1,474.16**	**2.8**	**8.08**	**0.00095**	**0.0042**	**3.900**	**17.08**
															8.33 lb/Yr		

HAPs

HAP emissions for the emission sources at Cambria are based on AP-42 except for Hg, HCl, & HF from the CFB Boilers. EFs for Hg are based on testing required for the HG ICR. Emission factors for HCl and HF were taken from the 2013 Emission Inventory submittal for Cambria.

CFB Boilers A and B

Calculate Emission Factors for HCl and HF.

	Unit A	Unit B		
Annual Boiler Heat Input	4,872,987	4,996,923	MMBtu/year	(From EPA/CAMD for 2014)
2014 HCl reported emission	70.7	57.5	tons per year	(From 2014 AIMS EI report)
Emission Factor	0.0290	0.0230	lb HCl/MMBtu	
2014 HF reported emission	0.5	0.5	tons per year	(From 2014 AIMS EI report)
Emission Factor	0.00021	0.00020	lb HF/MMBtu	

AP-42, Chapter 1.1- Coal Fired Boilers, Tables 1.1-13, 14, 15, & 18
HAP Emission Factors

EMISSION	FACTOR lb/ton	RATING	Conversion to lb/MMBtu	(EPA used 26 MMBtu/ton for the AP-42 emission factors. This conversion was done to produce Heat Content independent EFs. The additional rock content of waste coal was assumed to contain no organic or heavy metal HAPs.)
Biphenyl	1.70E-06	D	6.54E-08	
Acenaphthene	5.10E-07	B	1.96E-08	
Acenaphthylene	2.50E-07	B	9.62E-09	
Anthracene	2.10E-07	B	8.08E-09	
Benzo(a)anthracene	8.00E-08	B	3.08E-09	
Benzo(a)pyrene	3.80E-08	D	1.46E-09	
Benzo(b,j,k)fluoranthene	1.10E-07	B	4.23E-09	
Benzo(g,h,i)perylene	2.70E-08	D	1.04E-09	
Chrysene	1.00E-07	C	3.85E-09	
Fluoranthene	7.10E-07	B	2.73E-08	
Fluorene	9.10E-07	B	3.50E-08	
Indeno(1,2,3-cd)pyrene	6.10E-08	C	2.35E-09	
Naphthalene	1.30E-05	C	5.00E-07	
Phenanthrene	2.70E-06	B	1.04E-07	
Pyrene	3.30E-07	B	1.27E-08	
5-Methyl chrysene	2.20E-08	D	8.46E-10	
Acetaldehyde	5.70E-04	C	2.19E-05	
Acetophenone	1.50E-05	D	5.77E-07	
Acrolein	2.90E-04	D	1.12E-05	
Benzene	1.30E-03	A	5.00E-05	
Benzyl chloride	7.00E-04	D	2.69E-05	
Bis(2-ethylhexyl)phthalate (DEHP)	7.30E-05	D	2.81E-06	
Bromoform	3.90E-05	E	1.50E-06	

	Carbon disulfide	1.30E-04	D	5.00E-06	
	2-Chloroacetophenone	7.00E-06	E	2.69E-07	
	Chlorobenzene	2.20E-05	D	8.46E-07	
	Chloroform	5.90E-05	D	2.27E-06	
	Cumene	5.30E-06	E	2.04E-07	
	Cyanide	2.50E-03	D	9.62E-05	
	2,4-Dinitrotoluene	2.80E-07	D	1.08E-08	
	Dimethyl sulfate	4.80E-05	E	1.85E-06	
	Ethyl benzene	9.40E-05	D	3.62E-06	
	Ethyl chloride	4.20E-05	D	1.62E-06	
	Ethylene dichloride	4.00E-05	E	1.54E-06	
	Ethylene dibromide	1.20E-06	E	4.62E-08	
	Formaldehyde	2.40E-04	A	9.23E-06	
	Hexane	6.70E-05	D	2.58E-06	
	Isophorone	5.80E-04	D	2.23E-05	
	Methyl bromide	1.60E-04	D	6.15E-06	
	Methyl chloride	5.30E-04	D	2.04E-05	
	Methyl ethyl ketone	3.90E-04	D	1.50E-05	
	Methyl hydrazine	1.70E-04	E	6.54E-06	
	Methylene chloride	2.90E-04	D	1.12E-05	
	Phenol	1.60E-05	D	6.15E-07	
	Propionaldehyde	3.80E-04	D	1.46E-05	
	Tetrachloroethylene	4.30E-05	D	1.65E-06	
	Toluene	2.40E-04	A	9.23E-06	
	1,1,1-Trichloroethane	2.00E-05	E	7.69E-07	
	Styrene	2.50E-05	D	9.62E-07	
	Xylenes	3.70E-05	C	1.42E-06	
	Vinyl acetate	7.60E-06	E	2.92E-07	
	Hydrochloric Acid	1.2	B	Other EF used	
	Hydrofluoric Acid	0.15	B	Other EF used	
	Antimony	1.80E-05	A	6.92E-07	Since oxides of these metals are HAPs, they were included in the total. However, the AP-42 EFs used are for the metals only.
	Arsenic	4.10E-04	A	1.58E-05	No correction was made to include the oxide portion. This would be a very minor correction to total HAP emissions.
	Beryllium	2.10E-05	A	8.08E-07	"
	Cadmium	5.10E-05	A	1.96E-06	"
	Chromium	2.60E-04	A	1.00E-05	"
	Chromium (VI)	7.90E-05	D	3.04E-06	"
	Cobalt	1.00E-04	A	3.85E-06	"
	Lead	4.20E-04	A	1.62E-05	"
	Manganese	4.90E-04	A	1.88E-05	"
	Mercury	8.30E-05	A	3.19E-06	Other EF used
	Nickel	2.80E-04	A	1.08E-05	"
Hg EF used	Mercury - Unit A, May 14, 2014 testing			1.20E-06	
	Mercury - Unit A, May 14, 2014 testing			1.20E-06	
HCl EF used	HCl - Unit A - 2014 EI			0.0290	
	HCl - Unit B - 2014 EI			0.0230	
HF EF used	HF - Unit A - 2014 EI			0.000205	
	HF - Unit B - 2014 EI			0.000200	

Nebraska Boiler

AP-42, Chapter 1-4 Natural Gas Fired Boilers Tables 1.4-3 & 4
HAP Emission Factors

CAS	No.	Use these numeric factors (Values) Emission Factor Rating		Basis Pollutant Emission Factor lb/MMCF	lb/MMCF
91-57-6	2-Methylnaphthalene	2.40E-05	D	2.40E-05	2.40E-05
56-49-5	3-Methylchloranthrene	9.00E-07	E	<1.8E-06	9.00E-07
	7,12-Dimethylbenz(a)anthracene	8.00E-06	E	<1.6E-05	8.00E-06
83-32-9	Acenaphthene	9.00E-07	E	<1.8E-06	9.00E-07
203-96-8	Acenaphthylene	9.00E-07	E	<1.8E-06	9.00E-07
120-12-7	Anthracene	1.20E-06	E	<2.4E-06	1.20E-06
56-55-3	Benz(a)anthracene	9.00E-07	E	<1.8E-06	9.00E-07
71-43-2	Benzene	2.10E-03	B	2.10E-03	2.10E-03
50-32-8	Benzo(a)pyrene	6.00E-07	E	<1.2E-06	6.00E-07
205-99-2	Benzo(b)fluoranthene	9.00E-07	E	<1.8E-06	9.00E-07
191-24-2	Benzo(g,h,i)perylene	6.00E-07	E	<1.2E-06	6.00E-07
207-08-9	Benzo(k)fluoranthene	9.00E-07	E	<1.8E-06	9.00E-07
218-01-9	Chrysene	9.00E-07	E	<1.8E-06	9.00E-07
53-70-3	Dibenzo(a,h)anthracene	6.00E-07	E	<1.2E-06	6.00E-07
25321-22-(	Dichlorobenzene	1.20E-03	E	1.20E-03	1.20E-03
206-44-0	Fluoranthene	3.00E-06	E	3.00E-06	3.00E-06
86-73-7	Fluorene	2.80E-06	E	2.80E-06	2.80E-06
50-00-0	Formaldehyde	7.50E-02	B	7.50E-02	7.50E-02
110-54-3	Hexane	1.80E+00	E	1.80E+00	1.80E+00
193-39-5	Indeno(1,2,3-cd)pyrene	9.00E-07	E	<1.8E-06	9.00E-07
91-20-3	Naphthalene	6.10E-04	E	6.10E-04	6.10E-04
85-01-8	Phenanathrene	1.70E-05	D	1.70E-05	1.70E-05

129-00-0	Pyrene	5.00E-06	E	5.00E-06	5.00E-06
108-88-3	Toluene	3.40E-03	C	3.40E-03	3.40E-03
7440-38-2	Arsenic	2.00E-04	E	2.00E-04	2.00E-04
7440-41-7	Beryllium	6.00E-06	E	<1.2E-05	6.00E-06
7440-43-9	Cadmium	1.10E-03	D	1.10E-03	1.10E-03
7440-47-3	Chromium	1.40E-03	D	1.40E-03	1.40E-03
7440-48-4	Cobalt	8.40E-05	D	8.40E-05	8.40E-05
7439-96-5	Manganese	3.80E-04	D	3.80E-04	3.80E-04
7439-97-6	Mercury	2.60E-04	D	2.60E-04	2.60E-04
7440-02-0	Nickel	2.10E-03	C	2.10E-03	2.10E-03
7782-49-2	Selenium	1.20E-05	E	<2.4E-05	1.20E-05

		1.89			

210-bhp, Emergency Firepump Engine

*1 hp-hr = 2544.4 BTU

EPA uses: 7,000 Btu Heat Input/hp-hr mechanical energy output
or
0.007 MMBtu Heat Input/hp-hr mechanical energy output
36.3% Efficiency in Table 3.3-1

HAP Emission Factors for Diesel Engines <500-BHP, AP-42, Table 3.3-1&2

	Emission Factor (lb/MMBtu) (fuel input)	Emission Factor (lb/hp-hr) (power output)*	EMISSION FACTOR RATING	Basis Pollutant Emission Factor lb/MMBtu	lb/MMBtu	lb/MMBtu
Benzene	9.33E-04	6.53E-06	E	9.33E-04	0.000933	0.000933
Toluene	4.09E-04	2.86E-06	E	4.09E-04	0.000409	0.000409
Xylenes	2.85E-04	2.00E-06	E	2.85E-04	0.000285	0.000285
Propylene	2.58E-03	1.81E-05	E	2.58E-03	0.00258	0.00258
1,3-Butadiene	1.96E-05	1.37E-07	E	<3.91E-05	<3.91E-05	0.00001955
Formaldehyde	1.18E-03	8.26E-06	E	1.18E-03	0.00118	0.00118
Acetaldehyde	7.67E-04	5.37E-06	E	7.67E-04	0.000767	0.000767
Acrolein	4.63E-05	3.24E-07	E	<9.25E-05	<9.25E-05	0.00004625
Polycyclic aromatic hydrocarbons(PAH)			E			
Naphthalene	8.48E-05	5.94E-07	E	8.48E-05	0.0000848	0.0000848
Acenaphthylene	2.53E-06	1.77E-08	E	<5.06E-06	<5.06E-06	0.00000253
Acenaphthene	7.10E-07	4.97E-09	E	<1.42E-06	<1.42E-06	0.00000071
Fluorene	2.92E-05	2.04E-07	E	2.92E-05	0.0000292	0.0000292
Phenanthrene	2.94E-05	2.06E-07	E	2.94E-05	0.0000294	0.0000294
Anthracene	1.87E-06	1.31E-08	E	1.87E-06	0.00000187	0.00000187
Fluoranthene	7.61E-06	5.33E-08	E	7.61E-06	0.00000761	0.00000761
Pyrene	4.78E-06	3.35E-08	E	4.78E-06	0.00000478	0.00000478
Benzo(a)anthracene	1.68E-06	1.18E-08	E	1.68E-06	0.00000168	0.00000168
Chrysene	3.53E-07	2.47E-09	E	3.53E-07	3.53E-07	0.000000353
Benzo(b)fluoranthene	4.96E-08	3.47E-10	E	<9.91E-08	<9.91E-08	4.955E-08
Benzo(k)fluoranthene	7.75E-08	5.43E-10	E	<1.55E-07	<1.55E-07	7.75E-08
Benzo(a)pyrene	9.40E-08	6.58E-10	E	<1.88E-07	<1.88E-07	0.000000094
Indeno(1,2,3-cd)pyrene	1.88E-07	1.31E-09	E	<3.75E-07	<3.75E-07	1.875E-07
Dibenz(a,h)anthracene	2.92E-07	2.04E-09	E	<5.83E-07	<5.83E-07	2.915E-07
Benzo(g,h,I)perylene	2.45E-07	1.71E-09	E	<4.89E-07	<4.89E-07	2.445E-07
TOTAL PAH*	1.68E-04	1.18E-06	E	1.68E-04	0.000168	0.000168

*Value for TOTAL PAH uses list of measured values with non-detected ranges divided by 2.

Potential HAP Emissions	Unit 031 Tons/Year	Unit 032 Tons/Year		Unit 033 Tons/Year	Units 101, 102, 104, & 107 Tons/Year No HAPs	Unit 108 Tons/Year
Biphenyl	1.80E-04	1.80E-04	2-Methylnaphthalene	4.97197E-07	Benzene	3.43E-04
Acenaphthene	5.41E-05	5.41E-05	3-Methylchloranthrene	1.86449E-08	Toluene	1.50E-04
Acenaphthylene	2.65E-05	2.65E-05	7,12-Dimethylbenz(a)ant	1.65732E-07	Xylenes	1.05E-04
Anthracene	2.23E-05	2.23E-05	Acenaphthene	1.86449E-08	Propylene	9.48E-04
Benzo(a)anthracene	8.49E-06	8.49E-06	Acenaphthylene	1.86449E-08	1,3-Butadiene	7.18E-06
Benzo(a)pyrene	4.03E-06	4.03E-06	Anthracene	2.48599E-08	Formaldehyd	4.34E-04
Benzo(b,j,k)fluoranthene	1.17E-05	1.17E-05	Benz(a)anthracene	1.86449E-08	Acetaldehyde	2.82E-04
Benzo(g,h,i)perylene	2.87E-06	2.87E-06	Benzene	4.35048E-05	Acrolein	1.70E-05
Chrysene	1.06E-05	1.06E-05	Benzo(a)pyrene	1.24299E-08		
Fluoranthene	7.54E-05	7.54E-05	Benzo(b)fluoranthene	1.86449E-08		
Fluorene	9.66E-05	9.66E-05	Benzo(g,h,i)perylene	1.24299E-08		
Indeno(1,2,3-cd)pyrene	6.47E-06	6.47E-06	Benzo(k)fluoranthene	1.86449E-08		
Naphthalene	1.38E-03	1.38E-03	Chrysene	1.86449E-08		

Phenanthrene	2.87E-04	2.87E-04	Dibenzo(a,h)anthracene	1.24299E-08		
Pyrene	3.50E-05	3.50E-05	Dichlorobenzene	2.48599E-05		
5-Methyl chrysene	2.33E-06	2.33E-06	Fluoranthene	6.21497E-08		
Acetaldehyde	6.05E-02	6.05E-02	Fluorene	5.80064E-08		
Acetophenone	1.59E-03	1.59E-03	Formaldehyde	0.001553742		
Acrolein	3.08E-02	3.08E-02	Hexane	0.037289804		
Benzene	1.38E-01	1.38E-01	Indeno(1,2,3-cd)pyrene	1.86449E-08		
Benzyl chloride	7.43E-02	7.43E-02	Naphthalene	1.26371E-05		
Bis(2-ethylhexyl)phthalate (DEHP)	7.75E-03	7.75E-03	Phenanathrene	3.52181E-07		
Bromoform	4.14E-03	4.14E-03	Pyrene	1.03583E-07		
Carbon disulfide	1.38E-02	1.38E-02	Toluene	7.04363E-05		
2-Chloroacetophenone	7.43E-04	7.43E-04	Arsenic	4.14331E-06		
Chlorobenzene	2.33E-03	2.33E-03	Beryllium	1.24299E-07		
Chloroform	6.26E-03	6.26E-03	Cadmium	2.27882E-05	TOTAL PAH*	0.00006174
Cumene	5.62E-04	5.62E-04	Chromium	2.90032E-05		
Cyanide	2.65E-01	2.65E-01	Cobalt	1.74019E-06		
2,4-Dinitrotoluene	2.97E-05	2.97E-05	Manganese	7.87229E-06		
Dimethyl sulfate	5.09E-03	5.09E-03	Mercury	5.38631E-06		
Ethyl benzene	9.98E-03	9.98E-03	Nickel	4.35048E-05		
Ethyl chloride	4.46E-03	4.46E-03	Selenium	2.48599E-07		
Ethylene dichloride	4.25E-03	4.25E-03				
Ethylene dibromide	1.27E-04	1.27E-04				
Formaldehyde	2.55E-02	2.55E-02				
Hexane	7.11E-03	7.11E-03				
Isophorone	6.16E-02	6.16E-02				
Methyl bromide	1.70E-02	1.70E-02				
Methyl chloride	5.62E-02	5.62E-02				
Methyl ethyl ketone	4.14E-02	4.14E-02				
Methyl hydrazine	1.80E-02	1.80E-02				
Methylene chloride	3.08E-02	3.08E-02				
Phenol	1.70E-03	1.70E-03				
Propionaldehyde	4.03E-02	4.03E-02				
Tetrachloroethylene	4.56E-03	4.56E-03				
Toluene	2.55E-02	2.55E-02				
1,1,1-Trichloroethane	2.12E-03	2.12E-03				
Styrene	2.65E-03	2.65E-03				
Xylenes	3.93E-03	3.93E-03				
Vinyl acetate	8.07E-04	8.07E-04				
Antimony	1.91E-03	1.91E-03				
Arsenic	4.35E-02	4.35E-02				
Beryllium	2.23E-03	2.23E-03				
Cadmium	5.41E-03	5.41E-03				
Chromium	2.76E-02	2.76E-02				
Cobalt	1.06E-02	1.06E-02				
Lead	4.46E-02	4.46E-02				
Manganese	5.20E-02	5.20E-02				
Nickel	2.97E-02	2.97E-02				
Mercury	3.31E-03	3.31E-03				
HCl	8.01E+01	6.35E+01				
HF	5.66E-01	5.52E-01				
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	81.83	**65.25**		**0.04**		**0.00**

	147.12	

Hg Pounds per Year	
6.62	**6.62**

Potential HAP Emissions	Unit 031 Tons/Year	Unit 032 Tons/Year		Unit 033 Tons/Year	Units 101, 102, 104, & 107 Tons/Year No HAPs		Unit 108 Tons/Year	Potential HAP Emissions Tons/Year
1,1,1-Trichloroethane	0.002122615	0.002122615						**0.004245231**
1,3-Butadiene						1,3-Butadiene	7.18463E-06	**7.18463E-06**
2-Chloroacetophenone	0.000742915	0.000742915						**0.001485831**
2-Methylnaphthalene			2-Methylnaphthalene	4.97197E-07				**4.97197E-07**
2,4-Dinitrotoluene	2.97166E-05	2.97166E-05						**5.94332E-05**
3-Methylchloranthrene			3-Methylchloranthrene	1.86449E-08				**1.86449E-08**
5-Methyl chrysene	2.33488E-06	2.33488E-06						**4.66975E-06**
7,12-Dimethylbenz(a)anthracene			7,12-Dimethylbenz(a)ant	1.65732E-07				**1.65732E-07**
Acenaphthene	5.41267E-05	5.41267E-05	Acenaphthene	1.86449E-08				**0.000108272**
Acenaphthylene	2.65327E-05	2.65327E-05	Acenaphthylene	1.86449E-08				**5.3084E-05**
Acetaldehyde	0.060494538	0.060494538				Acetaldehyde	0.000281873	**0.121270949**
Acetophenone	0.001591962	0.001591962						**0.003183923**
Acrolein	0.030777923	0.030777923				Acrolein	1.69969E-05	**0.061572843**
Anthracene	2.22875E-05	2.22875E-05	Anthracene	2.48599E-08				**4.45998E-05**
Benzene	0.13797	0.13797	Benzene	4.35048E-05		Benzene	0.000342878	**0.276326382**
Benzo(a)anthracene	8.49046E-06	8.49046E-06	Benz(a)anthracene	1.86449E-08				**1.69996E-05**
Benzo(a)pyrene	4.03297E-06	4.03297E-06	Benzo(a)pyrene	1.24299E-08				**8.07837E-06**
Benzo(b)fluoranthene			Benzo(b)fluoranthene	1.86449E-08				**1.86449E-08**
Benzo(b,j,k)fluoranthene	1.16744E-05	1.16744E-05						**2.33488E-05**
Benzo(g,h,i)perylene	2.86553E-06	2.86553E-06	Benzo(g,h,i)perylene	1.24299E-08				**5.74349E-06**
Benzo(k)fluoranthene			Benzo(k)fluoranthene	1.86449E-08				**1.86449E-08**
Benzyl chloride	0.074291538	0.074291538						**0.148583077**
Biphenyl	0.000180422	0.000180422						**0.000360845**
Bis(2-ethylhexyl)phthalate (DEHP)	0.007747546	0.007747546						**0.015495092**

Bromoform	0.0041391	0.0041391					**0.0082782**
Carbon disulfide	0.013797	0.013797					**0.027594**
Chlorobenzene	0.002334877	0.002334877					**0.004669754**
Chloroform	0.006261715	0.006261715					**0.012523431**
Chrysene	1.06131E-05	1.06131E-05	Chrysene	1.86449E-08			**2.12448E-05**
Cumene	0.000562493	0.000562493					**0.001124986**
Cyanide	0.265326923	0.265326923					**0.530653846**
Dibenzo(a,h)anthracene			Dibenzo(a,h)anthracene	1.24299E-08			**1.24299E-08**
Dichlorobenzene			Dichlorobenzene	2.48599E-05			**2.48599E-05**
Dimethyl sulfate	0.005094277	0.005094277					**0.010188554**
Ethyl benzene	0.009976292	0.009976292					**0.019952585**
Ethyl chloride	0.004457492	0.004457492					**0.008914985**
Ethylene dibromide	0.000127357	0.000127357					**0.000254714**
Ethylene dichloride	0.004245231	0.004245231					**0.008490462**
Fluoranthene	7.53528E-05	7.53528E-05	Fluoranthene	6.21497E-08			**0.000150768**
Fluorene	0.000096579	0.000096579	Fluorene	5.80064E-08			**0.000193216**
Formaldehyde	0.025471385	0.025471385	Formaldehyde	0.001553742	Formaldehyd	0.00043365	**0.052930161**
HCl	80.06981344	63.50528115					**143.5750946**
Hexane	0.007110762	0.007110762	Hexane	0.037289804			**0.051511327**
HF	0.566264593	0.552219836					**1.118484429**
Indeno(1,2,3-cd)pyrene	6.47398E-06	6.47398E-06	Indeno(1,2,3-cd)pyrene	1.86449E-08			**1.29666E-05**
Isophorone	0.061555846	0.061555846					**0.123111692**
Methyl bromide	0.016980923	0.016980923					**0.033961846**
Methyl chloride	0.056249308	0.056249308					**0.112498615**
Methyl ethyl ketone	0.041391	0.041391					**0.082782**
Methyl hydrazine	0.018042231	0.018042231					**0.036084462**
Methylene chloride	0.030777923	0.030777923					**0.061555846**
Naphthalene	0.0013797	0.0013797	Naphthalene	1.26371E-05			**0.002772037**
Phenanthrene	0.000286553	0.000286553	Phenanathrene	3.52181E-07			**0.000573458**
Phenol	0.001698092	0.001698092					**0.003396185**
Propionaldehyde	0.040329692	0.040329692					**0.080659385**
Propylene					Propylene	0.00094815	**0.00094815**
Pyrene	3.50232E-05	3.50232E-05	Pyrene	1.03583E-07			**7.01499E-05**
Styrene	0.002653269	0.002653269					**0.005306538**
Tetrachloroethylene	0.004563623	0.004563623					**0.009127246**
Toluene	0.025471385	0.025471385	Toluene	7.04363E-05	Toluene	0.000150308	**0.051163513**
TOTAL PAH*					TOTAL PAH*	0.00006174	**0.00006174**
Vinyl acetate	0.000806594	0.000806594					**0.001613188**
Xylenes	0.003926838	0.003926838			Xylenes	0.000104738	**0.007958414**
Antimony	0.001910354	0.001910354					**0.003820708**
Arsenic	0.043513615	0.043513615	Arsenic	4.14331E-06			**0.087031374**
Beryllium	0.002228746	0.002228746	Beryllium	1.24299E-07			**0.004457617**
Cadmium	0.005412669	0.005412669	Cadmium	2.27882E-05			**0.010848127**
Chromium	0.027594	0.027594	Chromium	2.90032E-05			**0.055217003**
Cobalt	0.010613077	0.010613077	Cobalt	1.74019E-06			**0.02122789**
Lead	0.044574923	0.044574923					**0.089149846**
Manganese	0.052004077	0.052004077	Manganese	7.87229E-06			**0.104016026**
Mercury	0.00331128	0.00331128	Mercury	5.38631E-06			**0.006627946**
Nickel	0.029716615	0.029716615	Nickel	4.35048E-05			**0.059476736**
Selenium			Selenium	2.48599E-07			**2.48599E-07**

							147.1194434

Potential HAP Emissions	Unit 031	Unit 032	Unit 033	Units 101, 102, 104, & 107	Unit 108	Potential HAP Emissions
	Tons/Year	Tons/Year	Tons/Year	Tons/Year	Tons/Year	Tons/Year
				No HAPs		
HCl	80.06981344	63.50528115				**143.575095**
HF	0.566264593	0.552219836				**1.11848443**
Cyanide	0.265326923	0.265326923				**0.53065385**
Benzene	0.13797	0.13797	4.35048E-05		0.000342878	**0.27632638**
Benzyl chloride	0.074291538	0.074291538				**0.14858308**
Isophorone	0.061555846	0.061555846				**0.12311169**
Acetaldehyde	0.060494538	0.060494538			0.000281873	**0.12127095**
Methyl chloride	0.056249308	0.056249308				**0.11249862**
Manganese	0.052004077	0.052004077	7.87229E-06			**0.10401603**
Other HAPs						
Lead	0.044574923	0.044574923				**0.08914985**
Arsenic	0.043513615	0.043513615	4.14331E-06			**0.08703137**
Methyl ethyl ketone	0.041391	0.041391				**0.082782**
Propionaldehyde	0.040329692	0.040329692				**0.08065938**
Acrolein	0.030777923	0.030777923			1.69969E-05	**0.06157284**
Methylene chloride	0.030777923	0.030777923				**0.06155585**
Nickel	0.029716615	0.029716615	4.35048E-05			**0.05947674**
Chromium	0.027594	0.027594	2.90032E-05			**0.055217**
Formaldehyde	0.025471385	0.025471385	0.001553742		0.00043365	**0.05293016**
Hexane	0.007110762	0.007110762	0.037289804			**0.05151133**
Toluene	0.025471385	0.025471385	7.04363E-05		0.000150308	**0.05116351**
Methyl hydrazine	0.018042231	0.018042231				**0.03608446**
Methyl bromide	0.016980923	0.016980923				**0.03396185**
Carbon disulfide	0.013797	0.013797				**0.027594**
Cobalt	0.010613077	0.010613077	1.74019E-06			**0.02122789**

Ethyl benzene	0.009976292	0.009976292				**0.01995258**	
Bis(2-ethylhexyl)phthalate (DEHP)	0.007747546	0.007747546				**0.01549509**	
Chloroform	0.006261715	0.006261715				**0.01252343**	
Cadmium	0.005412669	0.005412669	2.27882E-05			**0.01084813**	
Dimethyl sulfate	0.005094277	0.005094277				**0.01018855**	
Tetrachloroethylene	0.004563623	0.004563623				**0.00912725**	
Ethyl chloride	0.004457492	0.004457492				**0.00891498**	
Ethylene dichloride	0.004245231	0.004245231				**0.00849046**	
Bromoform	0.0041391	0.0041391				**0.0082782**	
Xylenes	0.003926838	0.003926838			0.000104738	**0.00795841**	
Mercury	0.00331128	0.00331128	5.38631E-06			**0.00662795**	
	6.62	6.62	0.01			**13.26**	**Pounds/yr**
Styrene	0.002653269	0.002653269				**0.00530654**	
Chlorobenzene	0.002334877	0.002334877				**0.00466975**	
Beryllium	0.002228746	0.002228746	1.24299E-07			**0.00445762**	
1,1,1-Trichloroethane	0.002122615	0.002122615				**0.00424523**	
Antimony	0.001910354	0.001910354				**0.00382071**	
Phenol	0.001698092	0.001698092				**0.00339618**	
Acetophenone	0.001591962	0.001591962				**0.00318392**	
Naphthalene	0.0013797	0.0013797	1.26371E-05			**0.00277204**	
Vinyl acetate	0.000806594	0.000806594				**0.00161319**	
2-Chloroacetophenone	0.000742915	0.000742915				**0.00148583**	
Cumene	0.000562493	0.000562493				**0.00112499**	
Propylene					0.00094815	**0.00094815**	
Phenanthrene	0.000286553	0.000286553	3.52181E-07			**0.00057346**	
Biphenyl	0.000180422	0.000180422				**0.00036084**	
Ethylene dibromide	0.000127357	0.000127357				**0.00025471**	
Fluorene	0.000096579	0.000096579	5.80064E-08			**0.00019322**	
Fluoranthene	7.53528E-05	7.53528E-05	6.21497E-08			**0.00015077**	
Acenaphthene	5.41267E-05	5.41267E-05	1.86449E-08			**0.00010827**	
Pyrene	3.50232E-05	3.50232E-05	1.03583E-07			**7.015E-05**	
TOTAL PAH*					0.00006174	**0.00006174**	
2,4-Dinitrotoluene	2.97166E-05	2.97166E-05				**5.9433E-05**	
Acenaphthylene	2.65327E-05	2.65327E-05	1.86449E-08			**5.3084E-05**	
Anthracene	2.22875E-05	2.22875E-05	2.48599E-08			**4.46E-05**	
Dichlorobenzene			2.48599E-05			**2.486E-05**	
Benzo(b,j,k)fluoranthene	1.16744E-05	1.16744E-05				**2.3349E-05**	
Chrysene	1.06131E-05	1.06131E-05	1.86449E-08			**2.1245E-05**	
Benzo(a)anthracene	8.49046E-06	8.49046E-06	1.86449E-08			**1.7E-05**	
Indeno(1,2,3-cd)pyrene	6.47398E-06	6.47398E-06	1.86449E-08			**1.2967E-05**	
Benzo(a)pyrene	4.03297E-06	4.03297E-06	1.24299E-08			**8.0784E-06**	
1,3-Butadiene					7.18463E-06	**7.1846E-06**	
Benzo(g,h,i)perylene	2.86553E-06	2.86553E-06	1.24299E-08			**5.7435E-06**	
5-Methyl chrysene	2.33488E-06	2.33488E-06				**4.6698E-06**	
2-Methylnaphthalene			4.97197E-07			**4.972E-07**	
Selenium			2.48599E-07			**2.486E-07**	
7,12-Dimethylbenz(a)anthracene			1.65732E-07			**1.6573E-07**	
3-Methylchloranthrene			1.86449E-08			**1.8645E-08**	
Benzo(b)fluoranthene			1.86449E-08			**1.8645E-08**	
Benzo(k)fluoranthene			1.86449E-08			**1.8645E-08**	
Dibenzo(a,h)anthracene			1.24299E-08			**1.243E-08**	

						147.119443	
Sum of Other HAPs not including Mercury	0.48	0.48	0.04	0.00	0.00	1.00	

Table 3
Cambria CogenerationCompany
Cambria Generation Facility (TVOP-11-00332)
Facility HAP Emissions

Source ID	31	32	33	Units 101, 102, 104, & 107	Unit 108	**Facility Emission of Individual HAPs**	**Units**
Pollutant	Pyropower Unit A	Pyropower Unit B	Nebraska Boiler	Other Sources	Firepump Diesel Engine		
	Tons per Year	Tons per Year	Tons per Year	Tons per Year	Tons per Year		
Hydrochloric Acid	80.07	63.51	0.00	0.00	0.00	**143.58**	**Tons/Year**
Hydrogen Fluoride	0.57	0.55	0.00	0.00	0.00	**1.12**	**Tons/Year**
Cyanide	0.27	0.27	0.00	0.00	0.00	**0.53**	**Tons/Year**
Benzene	0.14	0.14	0.00	0.00	0.00	**0.28**	**Tons/Year**
Benzyl chloride	0.07	0.07	0.00	0.00	0.00	**0.15**	**Tons/Year**
Isophorone	0.06	0.06	0.00	0.00	0.00	**0.12**	**Tons/Year**
Acetaldehyde	0.06	0.06	0.00	0.00	0.00	**0.12**	**Tons/Year**
Methyl chloride	0.06	0.06	0.00	0.00	0.00	**0.11**	**Tons/Year**
Manganese	0.05	0.05	0.00	0.00	0.00	**0.10**	**Tons/Year**
Mercury	6.62	6.62	0.01	0.00	0.00	**13.26**	**Pounds/ Year**
Other HAPs	0.48	0.48	0.04	0.00	0.00	**1.00**	**Tons/Year**
Sum of All HAPs	**81.83**	**65.25**	**0.04**	**0.00**	**0.00**	**147.12**	**Tons/Year**

All emissions are based on Emission Factors for HAPS are from AP-42, except for Hg,HCl, and HF which are based on stack testing at Cambria.

GHG Emissions

III. GHG Estimate for Cambria Generation Facility

The CEMs on the two CFB Boilers at Cambria Cogen measure emissions of CO2 and calculate N2O and CH4 emissions based on CO2. Emission factors based on these CEMs are calculated below.

Calculate Emission Factors for CO2, N2O, and CH4

	Unit A	Unit B		
Annual Boiler Heat Input	4,872,987	4,996,923	MMBtu/year	(From EPA/CAMD for 2014)
2014 CO2 reported emission	480,684.7	494,159.5	tons per year	(From 2014 AIMS EI report)
Emission Factor	197.2854	197.7855	lb CO2/MMBtu	
2014 N2O reported emission	7.7	7.9	tons per year	(From 2014 AIMS EI report)
Emission Factor	0.00316	0.00316	lb N2O/MMBtu	
2014 CH4 reported emission	52.6	54.1	tons per year	(From 2014 AIMS EI report)
Emission Factor	0.02159	0.02165	lb CH4/MMBtu	

Greenhouse Gas Emission Factors
40 CFR 98 Tables C-1 and C-2

	Emission Factor (kg/MMBtu)			Default HHV (mmBtu/gal)
Fuel	**CO2**	**N2O**	**CH4**	
Bituminous Coal	93.40	1.60E-03	1.10E-02	
Subbituminous Coal	97.02	1.60E-03	1.10E-02	
Natural Gas	53.02	1.00E-04	1.00E-03	
Distillate Fuel Oil No. 2	73.96	6.00E-04	3.00E-03	0.138
Distillate Fuel Oil No. 6	75.10	6.00E-04	3.00E-03	
Kerosene	75.20	6.00E-04	3.00E-03	
Propane	61.46	6.00E-04	3.00E-03	0.091

Global Warming Potentials (100 year horizon) Table A-1 to Spart A of Part 98 (Values effective on January 1, 2014.)

GHG	CAS No	GWP
CO_2	124-38-9	1
N_2O	10024-97-2	298
CH_4	74-82-8	25

Conversions

1 kg =	2.20462 lbs
1 mTon =	1.10231 ton

	Emission Factor (lb/MMBtu)			Default HHV (mmBtu/gal)
Fuel	**CO2**	**N2O**	**CH4**	
Bituminous Coal	205.91	3.53E-03	2.43E-02	
Subbituminous Coal	213.89	3.53E-03	2.43E-02	
Natural Gas	116.89	2.20E-04	2.20E-03	
Distillate Fuel Oil No. 2	163.05	1.32E-03	6.61E-03	0.138
Distillate Fuel Oil No. 6	165.57	1.32E-03	6.61E-03	
Kerosene	165.79	1.32E-03	6.61E-03	
Propane	135.50	1.32E-03	6.61E-03	0.091

GHG Emission Table

Source	Greenhouse Gas							
	CO_2		CH_4		N_2O		Total CO_2e	
	Lb/Hr	Ton/Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr	Lb/ Hr	Ton/ Yr
31-Pyropower Unit A	124,290	544,389	13.6	60	2.0	8.7	125,223	548,477
32-Pyropower Unit B	124,605	545,769	13.6	60	2.0	8.7	125,539	549,863
33-Nebraska Boiler	11,500	2,518	0.22	0.047	0.022	0.0047	11,511	2,521
101-Fuel Handling System	0	0	0	0	0	0	0	0
102-Ash Handling Pile	0	0	0	0	0	0	0	0
104-Limestone Handling System	0	0	0	0	0	0	0	0
107-Fuel Conveying (Road Dust, Transfer, and Storage losses)	0	0	0	0	0	0	0	0
108-Emergency Diesel Firewater Pump Engine	240	60	0.0097	0.0024	0.00194	0.00049	241	60
Total	**260,634**	**1,092,737**	**27**	**119**	**4.0**	**17.5**	**262,515**	**1,100,921**

Increases in Baseline Emissions

Removal of the BMR Air Heater (Source ID 105).

It consists of a NG burner with a capacity of: 40 MMBtu/hr
Under RACT, utilization was limited to a maximum of: 5.00%

Emission Factors (AP-42, Ch. 1-4)	PM-2.5	PM-10	SO2	CO	NO2	VOC	CO2	Part 98 CH4	N2O
	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMBtu	lb/MMBtu	lb/MMBtu
	7.6	7.6	0.6	84	100	5.5	163.05	6.61E-03	1.32E-03

Table 5
Cambria Cogeneration Company - Cambria Generation Facility (TVOP-11-00332)
Emission Change Since Last Renewal of the TVOP

Source	$PM_{2.5}$ Ton/ Yr	PM_{10} Ton/ Yr	SO_2 Ton/ Yr	CO Ton/ Yr	NO_x Ton/ Yr	VOC Ton/ Yr	CO2e Ton/ Yr
Facility Emission Baseline on August 26, 2006	127	177	4,871	737	1,475	8.1	1,102,355
4/12/2013-RFD 11-00332C - Temporary Testing of a Coal Flow Aid	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/28/2013-Removal of the BMR Air Heater (Source ID 105) from Service.1	-0.064	-0.064	-0.0051	-0.71	-0.84	-0.046	(1,433)
8/6/2014- RFD 11-00332D - Removal of dust collector not actually in service. (C04 for Source ID 107.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/21/2015-RFD 11-00332E - Injection of additive to combustor to create a marketable ash	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emission Increase	**-0.064**	**-0.064**	**-0.0051**	**-0.71**	**-0.84**	**-0.046**	**(1,433)**
Current Facility Emission Baseline	**127**	**177**	**4,871**	**736**	**1,474**	**8.1**	**1,100,921**