

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **032017-018**

Project Number: 2016-12-015
Installation Number: 097-0001

Parent Company: The Empire District Electric Company

Parent Company Address: P.O. Box 127, Joplin, MO 64802

Installation Name: Asbury Power Plant

Installation Address: 21133 Uphill Lane, Asbury, MO 64832

Location Information: Jasper County, S17, T30N, R33W

Application for Authority to Construct was made for:
Construction of a new dry CCR landfill and the installation of a new bottom ash handling system. This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

Prepared by
Alana Hess
New Source Review Unit

Director or Designee
Department of Natural Resources

MAR 31 2017

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. The permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start-up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department's Southwest Regional Office within 15 days after the actual start-up of these air contaminant sources.

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources, but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060(12)(A)10. "Conditions required by permitting authority."

Asbury Power Plant
Jasper County, S17, T30N, R33W

1. Coal Combustion Residual (CCR) Landfill Restrictions
 - A. Asbury Power Plant shall not dispose of any offsite generated waste in the CCR landfill.
 - B. Asbury Power Plant shall maintain monthly records onsite of all landfilled waste types and their origin.
2. Paved Haul Roads Requirements
 - A. Asbury Power Plant shall pave all surfaces as indicated in Appendix B with materials such as asphalt, concrete, or other materials subject to approval by the Air Pollution Control Program.
 - B. Asbury Power Plant shall conduct maintenance and/or repair of the road surface as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating. Records of all maintenance and repair activities shall be kept on site indicating the specific activity, road location, and date.
 - C. Asbury Power Plant shall water, sweep, vacuum, or otherwise clean the haul roads indicated in Appendix B whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary. Watering may be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads. Sweeping/vacuuming may be suspended when there will be no traffic on the roads. Records of all activities shall be kept on site indicating the specific activity and date.
3. Submerged Flight Conveyors Requirements
 - A. Asbury Power Plant shall route all EP7 Boiler bottom ash through a submerged flight conveyor before depositing the ash into a bunker.
 - B. The initial portion of the submerged flight conveyor shall be submerged in water during operation.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

4. Record Keeping and Reporting Requirements

A. Asbury Power Plant shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

B. Asbury Power Plant shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

5. Phased Construction Requirements

Commencing construction and operation of the emission sources associated with this project may be conducted in phases over several months. Asbury Power Plant shall notify the Compliance/Enforcement Section in writing within 15 days after the commencement of operation of each phase.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2016-12-015

Installation ID Number: 097-0001

Permit Number: 032017-018

Installation Address:

Asbury Power Plant
21133 Uphill Lane
Asbury, MO 64832

Parent Company:

The Empire District Electric Company
P.O. Box 127
Joplin, MO 64802

Jasper County, S17, T30N, R33W

REVIEW SUMMARY

- The Empire District Electric Company has applied for authority to construct a new dry CCR landfill and install a new bottom ash handling system.
- The application was deemed complete on January 24, 2017.
- HAP emissions are expected from the proposed equipment. HAP will be emitted from the handling of coal combustion residuals; however, all individual HAP emissions are below their respective SMALs for this project.
- None of the regulations currently promulgated under 40 CFR Parts 60, 61, and 63 apply to the emission sources permitted by this project.
- Water carryover from the operation of the submerged flight conveyor controls emissions from the bottom ash handling system.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Jasper County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2, Item #26 "Fossil-fuel-fired steam electric plants of more than 250 MMBtu/hr heat input". The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels and below the SMALs.

- Emissions testing is not required for the new emission sources as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- Asbury Power Plant is required to other update their Part 70 operating permit application, Project 2014-05-088, to include the provisions of this construction permit no later than one year after the start-up of these emission sources.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

The Empire District Electric Company's Asbury Power Plant converts the energy from coal and other fuels to produce steam that powers an electric generating turbine with a total rated capacity of 212.8 MW. The Asbury Power Plant includes one 2,730 MMBtu/hr cyclone boiler. The boiler is capable of combusting sub-bituminous coal, bituminous coal, distillate oil, tire derived fuel (TDF), and petroleum coke. The boiler was installed in 1970. The Asbury Power Plant operates a circulating dry lime scrubber, powdered activated carbon injection, SCR, and a baghouse to control emissions from the boiler. Other emission sources at the installation include coal unloading, conveying, stockpiles, and crushing equipment; an emergency generator; fly ash and byproduct handling; a parts washer; distillate fuel oil tanks; and space heating. The facility is an existing major source for both construction and operating permits.

The following New Source Review permits have been issued to the Asbury Power Plant by the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
022012-010	Installation of a flue gas desulfurization and powdered activated carbon system

PROJECT DESCRIPTION

The Empire District Electric Company proposes to construct a new CCR landfill to replace the existing CCR impoundment at the Asbury Power Plant. In addition to the construction of the new CCR landfill, the Empire District Electric Company proposes to install a new bottom ash/slag handling system. This project will not result in any physical changes to or changes in the method of operation of the boiler. The existing fly ash and byproducts handling system (Permit 022012-010) is also unaffected by this project.

Bottom Ash

Prior to this project bottom ash was sluiced from the boiler to the existing CCR impoundment resulting in little or no emissions.

A fully enclosed and water tight conveying system will condition the bottom ash to approximately 20% moisture as it moves from beneath the boiler to a three-sided load

out containment bunker (~ 60 ft by 60 ft). A front end loader will load the bottom ash from the three-sided bunker into trucks. The trucks will travel a paved haul road and an unpaved haul road to arrive at the new CCR landfill. The bottom ash MHDR is bottlenecked by the MHDR of the boiler to 54,005 dry tons per year (6.16 dry tons per hour). The bottom ash MHDR was determined based on the following information:

- The MHDR of the boiler of 2,730 MMBtu/hr
- A coal lower heating value of 8,541 Btu/lb (obtained from the installation's 2015 and 2016 coal analyses)
- A maximum coal ash content of 6.64% (obtained from the installation's 2015 and 2016 coal analyses)
- 2015 and 2016 actual fly ash and byproducts handling rates of 35,130 tons and 37,378 tons.
- A fly ash and byproducts make-up of 42.33 wt% fly ash (Permit 022012-010)

If bottom ash handling should ever exceed 54,005 dry tons per year, the permittee shall true-up this permit to reflect the true MHDR of the bottom ash handling system. Emissions from the bottom ash handling system were evaluated at PTE for this project.

Fly Ash

As previously stated no changes are being made to the fly ash and byproducts handling system installed under Permit 022012-010. The new CCR landfill is located further away from the fly ash and byproducts handling system than the existing CCR impoundment. The increased distance will result in an increase in haul road emissions. Emissions from the hauling of fly ash and byproducts to the new CCR landfill were determined by subtracting the baseline actual fly ash and byproducts hauling emissions from the potential fly ash and byproducts hauling emissions.

CCR Landfill

Coal combustion residuals consisting of fly ash, byproducts, and bottom ash will be unloaded from trucks into the new CCR landfill. Grading/bulldozing, vehicular activity, and wind erosion will result in emissions from the new CCR landfill. Emissions from truck loadout and the new CCR landfill were determined by subtracting the baseline actual truck loadout and existing CCR impoundment emissions from potential truck loadout and new CCR landfill emissions.

Table 2: Project Emission Sources

Emission Source	Description	Project Emission Calculation Method
21	CCR Landfill grading with bulldozer (includes vehicular activity)	PTE – BAE
22	CCR Landfill wind erosion, 10 acres exposed	PTE – BAE
24A	Fly Ash & Byproducts Unpaved Haul Road, 0.44 miles	PTE – BAE
24B	Bottom Ash Unpaved Haul Road, 0.44 miles	PTE
24C	Bottom Ash Paved Haul Road, 0.46 miles	PTE
24D	Fly Ash, & Byproducts Paved Haul Road,	PTE – BAE

Emission Source	Description	Project Emission Calculation Method
	0.19 miles	
25A	Bottom Ash Flight Conveyor drop into bunker, 7.4 wet tph	PTE
25B	Bottom Ash Bunker wind erosion, 0.08 acres	PTE
26A	Bottom Ash Loadout from bunker to trucks, 7.4 wet tph	PTE
26B	Bottom Ash Front End Loader vehicle activity, 100 ft	PTE
27	CCR Loadout from trucks to landfill, 15.91 wet tph	PTE - BAE

Calculations of baseline actual emissions were based on the same calculation methods as for potential emissions, but with baseline actual throughput instead of MHDR.

Table 3: Baseline Actual Throughput & Emissions

Emission Source	Description	2012 Actual Throughput	2013 Actual Throughput	Baseline Actual Throughput	Baseline Actual Emissions (tons)		
					PM	PM ₁₀	PM _{2.5}
21	CCR Impoundment grading with scraper/dozer (includes vehicular activity)	70,774 tons	77,686 tons	74,230 tons	0.69	0.24	0.07
22	CCR Impoundment wind erosion	70,774 tons	77,686 tons	74,230 tons	1.47	0.73	0.29
24A	Fly Ash & Byproducts Unpaved Haul Road	41,685 tons	45,756 tons	43,720 tons	5.83	1.66	0.17
27	Fly Ash & Byproducts Loadout from trucks to landfill	41,685 tons	45,756 tons	43,720 tons	0.009	0.004	0.002

EMISSIONS/CONTROLS EVALUATION

Bottom Ash Handling System (25A, 25B, & 26A)

Potential emissions from 25A Bottom Ash Flight Conveyor drop into bunker and 26A Bottom Ash Loadout from bunker to trucks were calculated using the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 13.2.4 "Aggregate Handling and Storage Piles" (November 2006). The mean wind speed of 8.95 mph was obtained from 10-year data recorded at Joplin Regional Airport. A

moisture content of 4.8% was selected as this is the highest value that can be used to maintain the A quality rating of the emission calculation method. Actual moisture content is anticipated to be higher (~20%); however, use of 4.8% is conservative and results in very low potential emissions. The equation was developed to represent emissions from aggregate handling, but has been used in other industries. The Empire District Electric Company submitted mixed ash silt content test results of 1.7% and 0.5%. To be conservative, the higher value of 1.7% was used in emissions calculations. This value is within the range of silt contents for which the emission calculation method retains an A quality rating.

Potential emissions from 25B Bottom Ash Bunker wind erosion were calculated using the alternative method in the *WRAP Fugitive Dust Handbook*, Chapter 9 "Storage Pile Wind Erosion" (September 2006). The method references an EPA published method. The higher Empire District Electric Company submitted mixed ash silt content test results of 1.7% was used in emissions calculations. The percent of time unobstructed wind speed exceeds 12 mph was determined to be 25.7% and was obtained from 10-year data recorded at Joplin Regional Airport. The number of days per year with greater than 0.01 inch of precipitation was conservatively set at zero as the bunker will be three-sided and to avoid double-counting control. PM, PM₁₀, and PM_{2.5} control efficiencies of 90%, 90%, and 74%, respectively, were applied based on the material being wet. The control efficiencies were obtained from a combination of AP-42 Table B.2-3 AIRS Code 061 and *WRAP Fugitive Dust Handbook* pages 2 and 3.

Unpaved Haul Roads & Front End Loader Vehicle Activity (24A, 24B, & 26B)

Emissions from the unpaved haul road were calculated using Equations 1a and 2 from AP-42, Section 13.2.2 "Unpaved Roads" (November 2006), a silt content of 8.4% (estimated as Western Surface Coal Mining haul road to/from pit), an unloaded truck weight of 15 tons, a loaded truck weight of 33.3 tons, and 105 days per year with 0.01 inches or more of precipitation.

Paved Haul Roads (24C & 24D)

Emissions from the paved haul roads were calculated using Equation 2 from AP-42, Section 13.2.1 "Paved Haul Roads" (January 2011), a silt loading of 7.4 g/m², an unloaded truck weight of 15 tons, a loaded truck weight of 33.3 tons, and 105 days per year with at least 0.01" of precipitation.

CCR Landfill (21, 22, & 27)

Potential emissions from 27 CCR Loadout from trucks to landfill were calculated using AP-42, Section 13.2.4 "Aggregate Handling and Storage Piles" (November 2006). A mean wind speed of 8.95 mph was obtained from 10-year data recorded at Joplin Regional Airport. The mean wind speed was increased by a factor of 25% to account for the height of the landfill cells. A moisture content of 4.8% was selected as this is the highest value that can be used to maintain the A quality rating of the emission calculation method. Actual moisture content is anticipated to be higher (~20%); however, use of 4.8% is conservative and results in very low potential emissions. The

equation was developed to represent emissions from aggregate handling, but has been used in other industries. According to an EPRI study, AP-42 over predicts emissions from dropping and grading material at CCR landfills. The study developed a ratio of measured to AP-42 predicted emissions. The mean ratio for PM and PM₁₀ was determined to be 53/260, and the mean ratio for PM_{2.5} was determined to be 19/29. The emissions calculated using AP-42 were reduced by applying these EPRI ratios.

Potential emissions from 21 CCR Landfill grading with scraper/dozer (includes vehicular activity) were calculated using AP-42, Section 11.9 "Western Surface Coal Mining" (October 1998) and the grading emission equation. A mean vehicle speed of 5 mph was selected. Emissions were reduced by applying the EPRI ratio discussed above. According to the EPRI study, each load of material required 8 minutes of grading. To be conservative, emissions calculations assumed each load of material required 9 minutes of grading. Based on the maximum annual bottom ash, fly ash, and byproducts handling rates, the average weight of material per load established from baseline period data, and the conservative 9 minutes of grading per load, grading emissions were evaluated at 1,140 hours per year.

Potential emissions from 22 CCR Landfill wind erosion were calculated using the alternative method in the *WRAP Fugitive Dust Handbook*, Chapter 9 "Storage Pile Wind Erosion" (September 2006). The method references an EPA published method. A conservative mixed ash silt content test results of 5% was used to account for bottom ash, fly ash, and byproducts. The percent of time unobstructed wind speed exceeds 12 mph was determined to be 25.7% and was obtained from 10-year data recorded at Joplin Regional Airport. The number of days per year with greater than 0.01 inch of precipitation was conservatively set at zero to avoid double-counting control. PM, PM₁₀, and PM_{2.5} control efficiencies of 90%, 90%, and 74%, respectively, were applied based on the material being wet. The control efficiencies were obtained from a combination of AP-42 Table B.2-3 AIRS Code 061 and *WRAP Fugitive Dust Handbook* pages 2 and 3.

HAP Emissions

Fly ash and bottom ash contains particulate HAPs. The highest concentration from among five references for each individual HAP were applied to the potential PM emissions from fly ash and bottom ash operations to obtain the potential HAP emissions. The references do not indicate whether the HAP concentrations are for the total mass of the compound or just the mass of the metal portion of the compound. It was conservatively assumed that the concentration was only for the metal portion of the compound for comparison to the SMALs.

The following table provides an emissions summary for this project. Existing potential emissions from the installation have not been previously determined and were not calculated as part of this project. It is known that the installation is an existing major source based on past actual emissions. Existing actual emissions were obtained from the installation's 2015 EIQ. Potential emissions of the project represent the potential emissions increase, assuming continuous operation (8,760 hours per year).

Table 4: Emissions Summary (tpy)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2015 EIQ)	Potential Emissions of the Project
PM	25.0	N/D	N/D	24.243
PM ₁₀	15.0	N/D	58.44	6.91
PM _{2.5}	10.0	N/D	41.55	1.04
SO _x	40.0	Major	1,134.10	N/A
NO _x	40.0	Major	1,246.10	N/A
VOC	40.0	N/D	22.53	N/A
CO	100.0	N/D	162.22	N/A
HAP	25.0	N/D	3.02	0.005

N/A = Not Applicable; N/D = Not Determined

Table 5: Individual HAP Emissions Summary (tpy)

Pollutant	CAS No.	SMAL	Potential Emissions of the Project
Antimony Compounds	20-00-8	5	1.12×10^{-5}
Arsenic Compounds	20-01-9	0.005	4.45×10^{-4}
Beryllium Compounds	20-03-1	0.008	3.71×10^{-5}
Cadmium Compounds	20-04-2	0.01	2.88×10^{-5}
Chromium Compounds	20-06-4	5	1.58×10^{-3}
Cobalt Compounds	20-07-5	0.1	6.87×10^{-5}
Lead Compounds	20-11-1	0.01	2.49×10^{-4}
Manganese Compounds	20-12-2	0.8	1.64×10^{-3}
Mercury Compounds	20-13-3	0.01	1.29×10^{-6}
Nickel Compounds	20-14-4	1	7.19×10^{-4}
Selenium Compounds	20-16-6	0.1	1.85×10^{-4}

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

The Empire District Electric Company's Asbury Power Plant shall comply with the following requirements applicable to the emission sources in Table 2. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- 10 CSR 10-6.065 *Operating Permits*
- 10 CSR 10-6.110 *Submission of Emission Data, Emission Fees and Process Information*
- 10 CSR 10-6.165 *Restriction of Emission of Odors*
- 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required* it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 9, 2016, received December 12, 2016, designating The Empire District Electric Company as the owner and operator of the installation.
- 2015 Asbury combusted coal analysis.xlsx, submitted by Jeff Burkett on January 11, 2017.
- 2016 Asbury combusted coal analysis.xlsx, submitted by Jeff Burkett on January 11, 2017.
- 2015-2016 Asbury byproduct_flyash hauling to CCR landfill.xlsx, submitted by Jeff Burkett on January 11, 2017.
- New CCR Landfill_project 2016-12-015_Additional information.docx, submitted by Jeff Burkett on February 14, 2017.

The following documents are permit references:

- *Characterization of Coal Combustion Residues from Electric Utilities – Leaching and Characterization Data*. EPA. December 2009. EPA-600/R-09/151.
- *Reuse Options for Coal Fired Power Plant Bottom Ash and Fly Ash*. Jayaranjan, Hullebusch, Annachatre. *Reviews in Environmental Science and Biotechnology*. April 1, 2014.
- *Chemical Constituents in Coal Combustion Product Leachate: Beryllium*. EPRI. November 2006.
- *Coal Ash: Characteristics, Management and Environmental Issues*. EPRI. September 2009.
- *Technical Memorandum, Technical Briefing Paper on Selenium*. Exponent. July 2010.
- *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1*. EPA.
- *WRAP Fugitive Dust Handbook*. Countess Environmental. September 7, 2006.
- *Missouri Emissions Inventory System (MoEIS)*. Missouri Department of Natural Resources, 2015. <https://www.dnr.mo.gov/moeis/main/login>
- Global Climate Station Summaries. NOAA. <http://gis.ncdc.noaa.gov/map/viewer/#app=cdo&cfg=isdsummaries&theme=isdsummaries>

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu ...	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ..	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EIQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

APPENDIX B

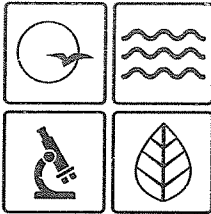
Haul Roads Requiring Paving



Imagery ©2017 DigitalGlobe, USDA Farm Service Agency, Map data ©2017 Google 100 ft

Measure distance
Total distance: 1,449.40 ft (441.78 m)





Missouri Department of

dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

MAR 3 1 2017

Mr. Fred Prutch
Plant Manager
Asbury Power Plant
21133 Uphill Lane
Asbury, MO 64832

RE: New Source Review Permit - Project Number: 2016-12-015

Dear Mr. Prutch:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application, and revision of your operating permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to §§621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.




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Mr. Fred Prutch
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If you have any questions regarding this permit, please do not hesitate to contact Alana Hess, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp
New Source Review Unit Chief

SH:ahj

Enclosures

c: Southwest Regional Office
PAMS File: 2016-12-015

Permit Number: **032017-018**