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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2034E
Plant ID No.:	023-00003
Applicant:	Virginia Electric & Power Company
Facility Name:	Mt. Storm Plant
Location:	Grant County
NAICS Code:	221112
Application Type:	Modification
Received Date:	October 14, 2014 / Resubmitted April 2, 2015
Engineer Assigned:	Steven R. Pursley, PE
Fee Amount:	$2,000.00
Date Received:	October 17, 2014
Complete Date:	April 30, 2015
Due Date:	July 29, 2015
Applicant Ad Date:	October 14, 2015
Newspaper:	*Grant County Press*
UTM's:	Easting: 649.85 km Northing: 4,340.00 km Zone: 17
Description:	Construction of a new coal delivery and handling system.

DESCRIPTION OF PROCESS

The application addresses the construction and operation of a new coal delivery and handling system. The system is designed to maximize flexibility and accommodate a variety of coal quality. Coal may be received by truck or by rail, and coal from either source may be placed (and subsequently reclaimed from a variety of locations depending on the power stations need.

The coal truck unloading facility currently covered by permit R13-2034D will be retained. The coal delivered through that system will be able to be routed either to the covered storage area (where the current blending facility is located) or to two of the four new stacking tubes to be constructed as part of this project. The current limit of 3 million tons throughput to this portion of the coal handling process will be retained.

The current coal blending area will be replaced with a covered storage area that will be used to maintain a supply of fuel that is protected from the weather. This covered storage area will have a capacity of about 25,000 tons of coal.

The new rail unloading facility and the four new stacking tubes are the major focus of this project. The new rail unloading facility will be designed to accommodate rapid discharge bottom unloading railcars of up to 120 tons of coal per car. The system will have a rated capacity of 2,000 ton per hour. As with the existing truck unloading facility, the coal delivered by railcar will have the capability of being placed either in the covered storage area or through one or all of the four new stacking tubes. Because of the current limitations on the amount of coal that can be stored in the coal yard, Dominion assumed a maximum throughput of 7.0 million tons of coal per year through the rail unloading system. This is not a change in the current capacity of the three coal fired boilers at the facility or of the coal storage area.

The new conveyor will be installed within weatherproof conveyor galleries. Transfer points from conveyor-to-conveyor will be enclosed in chutes and contained within buildings.

The railcar unloading system will be equipped with an electric thaw shed. The shed will use electric heat to thaw frozen railcars.

The system for reclaiming coal from the pile will be redesigned to minimize the utilization of bulldozers for reclamation and pile grooming. A new reclamation tunnel will be constructed under almost the full length of the current pile. This tunnel will be equipped with four locations for coal reclaim, associated with each of the four stacking tubes. In this manner, coals of varying quality can be blended in the handling system without the need to blend on the pile.

Following the reclamation system, the coal will be handled as it is today. The existing coal crushing and bunker system is being retained. No new crushers are planned at this time.

SITE INSPECTION

No site inspection of the facility was deemed necessary. The facility was last inspected on July 24, 2014 by Karl Dettinger of DAQs Eastern Panhandle Regional Office. The facility was found to be in compliance. To get to the facility from Charleston take I-79 north to exit 99. Then turn right and take Corridor H (US Rt. 33 / US Rt. 48) west approximately 40 miles until it becomes US Route 219. Follow US Rt. 219 approximately 29 miles until it intersects with State Route 32 in Thomas. Turn right and follow St. Rt. 32 approximately 2.2 miles and turn left on State Route 93 in Davis. Go approximately 13.7 miles and the plant entrance road is on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

With the exceptions of the coal sampling system, the hammermill (for frozen coal) and a grizzly screen between the rail dump hopper and conveyor A-1, the only sources of emissions due to this modification are transfer points. PM, PM_{10}, and $PM_{2.5}$ emissions from the new transfer points were calculated using AP-42 Section 13.2.4, equation 1. Emissions from the hammermill and the grizzly were calculated using the rated grain loading for the dust collectors (DC-1 & DC-2) which control their emissions. Emissions of the two coal sampling systems were calculated by modeling them as one transfer point each but assuming all possible coal is sampled. This likely grossly overestimates emissions from these sampling systems since, although each actually has several transfer points, throughput to these type of sampling systems is typically only a tiny fraction of total coal throughput.

Controlled emissions from the facility should be as follows:

	PM		PM_{10}		$PM_{2.5}$	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Transfer Points	8.99	9.29	4.25	4.39	0.65	0.67
Main Sample Sys.	0.08	0.10	0.04	0.05	0.01	0.01
Truck Sample Sys.	0.08	0.10	0.04	0.05	0.01	0.01
DC-1	2.15	3.75	2.15	3.75	2.15	3.75
DC-2	2.15	3.75	2.15	3.75	2.15	3.75
Total	**13.45**	**16.99**	**8.63**	**11.99**	**4.97**	**8.19**

REGULATORY APPLICABILITY

The proposed modification is subject to the following state and federal rules:

STATE RULES

45CSR2: To Prevent And Control Particulate Air Pollution From Combustion Of Fuel In Indirect Heat Exchangers.

The main requirement of 45CSR2 applicable to this modification is the requirement that all sources of fugitive particulate matter to be equipped with a fugitive particulate matter control system.

45CSR13: "Permits for Construction, Modification, Relocation, and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation"

The proposed modification has the potential to increase emissions by more than 6 pounds per hour and 10 tons per year. Therefore, the applicant was required to submit a permit modification application and place a class I legal ad per 45CSR§13-11.2.a. The applicant placed the ad in the October 14, 2014 issue of the *Grant County Press* and the affidavit of publication for said ad was received on October 24, 2014.

45CSR16: Standards Of Performance For New Stationary Sources.

The facility is subject to 45CSR16 because it is subject to 40 CFR 60 Subpart Y (see below).

45CSR30: Requirements For Operating Permits.

The facility is an existing Title V major source with an issued Title V permit (R30-02300003-2011). VEPCO must update their Title V permit in accordance with 45CSR30.

FEDERAL REGULATIONS:

40 CFR 60, SUBPART Y: STANDARDS OF PERFORMANCE FOR COAL PREPARATION PLANTS.

This new equipment will be subject to the requirements of 40 CFR 60 Subpart Y noted below because it will have been constructed after May 27, 2009 and will process more than 200 tons of coal per day. The facility should be in compliance with Section 254(b) (less than 10% opacity for coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal) when the particulate matter control methods and devices proposed are in operation. The facility must submit a fugitive coal dust emissions control plan as required by 40CFR§60.254(c)(2) after permit issuance.

The proposed modification is not subject to the following state and federal rules:

45CSR5 To Prevent and Control Air Pollution From the Operation of Coal Preparation Plants and Coal Handling Operations.

The facility is not subject to 45CSR5 because it is located at a power plant and therefore is regulated by 45CSR2.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

No non-criteria regulated pollutants will be emitted due to this modification.

AIR QUALITY IMPACT ANALYSIS

Since this is a minor modification to an existing major stationary source, as defined in 45CSR14, no modeling was required.

MONITORING OF OPERATIONS

In addition to the monitoring and recordkeeping already required by R13-2034D, VEPCO will be required to monitor and record the following:

* The amount of coal unloaded via rail car on a monthly basis.
* The amount of coal unloaded via truck on a monthly basis.
* The amount of coal sent to covered storage on a monthly basis.
* The amount of coal transferred from the stacking tube stock piles on a monthly basis.
* VEPCO will be required to perform opacity readings in accordance with §60.255(b)(2).

CHANGES TO PERMIT R13-2034D

Conditions 4.1.2 through 4.1.5 and 4.1.8 through 4.1.11 were kept. Additionally, the 3,000,000 tpy limit from condition 4.1.1 was kept (though not the rest of the condition). The rest of the permit is essentially brand new.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-2034E for the installation of a coal delivery and handling system at the Mt. Storm Plant near Bismark be granted to Virginia Electric and Power Company.

Steven R. Pursley, PE
Engineer

April 30, 2015