

Blue Ridge Environmental Defense League

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LOOPHOLES, EXEMPTIONS AND OMISSIONS IN THE WIREGRASS BIOMASS-FIRED POWER PLANT PERMIT

The air pollution permit issued by the Georgia Environmental Protection Division for the Wiregrass Biomass-Fired Power Plant grants the company many ways to emit excess levels of pollution. A close examination of the permit, the permit application and other documents indicate that biomass power plants are not clean sources of power and that the first priority of their owner-operators is neither public health nor environmental quality.

The Permit

The air construction permit application for this plant was submitted by Golder Associates in December 2009 (093-90124) and reviewed by the Georgia Environmental Protection Division. A permit was issued effective July 19, 2010. The permit allows the construction of a 45 megawatt plant powered by wood and sewage sludge. Heat would be provided by a bubbling fluidized bed boiler with a heat input rate of 626 million British thermal units per hour (MMBtU/h).

The Loopholes

Prevention of Significant Deterioration

“Because the proposed biomass facility does not fall within one of the 28 listed source categories, the emission rate threshold for triggering PSD NSR is 250 TPY.” As seen in Table 1, Wiregrass Power’s emissions are a shade below 250, making it a minor source for New Source Review. The plant escapes the requirements of a major source under the Clean Air Act’s Prevention of Significant Deterioration (PSD) rules. This means that control technology review, source impact analysis, air quality analysis, source information, and additional impact analysis *are not required*. [Section 3.0]¹

Sulfur Dioxide

“There is no emission limit for SO₂ for boilers burning wood.” [Section 3.1.1] Therefore, the only requirement is that the plant meet an opacity standard; i.e., the density of smoke seen to come from the stack. Also, the Wiregrass plant owners plan to buy sulfur dioxide allowances under the Acid Rain (Title IV) permit trading scheme, adding to the levels of SO₂ emitted. [Section 3.1.3]

Georgia EPD’s permit allows Wiregrass Power to emit the pollutants listed on page 2.

¹ Section numbers refer to the Air Construction Permit Application for Wiregrass Power, LLC, December 2009, 093-90124

Table 1. Major Pollutants²

Pollutant	Tons per year
<i>Major pollutants (criteria)</i>	
Carbon monoxide	246.8
Nitrogen oxides	246.8
Particulate matter (PM)	135
PM < 10 microns (PM-10)	112.7
PM < 2.5 microns (PM-2.5)	86.3
Sulfur dioxide	246.8
Volatile organic compounds	60.3
Lead	1.03
Hazardous air pollutants-Total	13.9

Nitrogen Oxides

“Subpart Db contains NOx standards for fossil fuel firing. There are no specific standards for wood firing; however, when burning natural gas in combination with wood, the applicable standard for natural gas firing alone must be met. The applicable standard for natural gas-firing units is 0.30 lb/MMBtu. However, there is an exemption from this standard provided that fossil fuel firing does not exceed a 10-percent annual capacity factor for the unit.” The Wiregrass application estimates that the “maximum natural gas firing” would be 500 hours per year, or 5.7%. Therefore, NOx emission New Source Performance Standards (NSPS) do not apply to the Wiregrass unit. [Section 3.1.1]

The Wiregrass plant would also emit the following hazardous air pollutants:

Table 2. Hazardous Air Pollutants³

Hazardous air pollutant	Pounds per year
Sulfuric acid H ₂ SO ₄	30200
Benzene*	3235
Arsenic	15
Carbon tetrachloride	112
Chlorine	1940
Formaldehyde*	2577
Hydrochloric acid (HCl)	16400
Styrene	260
Trichloroethylene	74
Xylene	62
Vinyl chloride	44

* These totals are calculated based on emission limits in the GEPD Air Permit, Section 2.15

² Emissions data from Air Construction Permit Application, Table 12, “New Facility Emissions Summary,” and Form 4.00 “Emission Information,” Submitted to GEPD by Golder Associates Inc. for Wiregrass Power, LLC, December 2009, 093-90124

³ Emissions data from Air Construction Permit Application, Tables 2-2 and 2-3, Submitted to GEPD by Golder Associates Inc. for Wiregrass Power, LLC, December 2009, 093-90124.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Maximum achievable control standards are applied to air pollution sources which emit more than 10 tons per year of a specific HAP or more than 25 tons per year of all HAPs. Although the plant would emit 15 tons per year of hazardous sulfuric acid, it is not listed as a “HAP” under 40 CFR 63. The plant would emit hydrogen chloride, which is a listed HAP, but just over 8 tons per year. Therefore, the Wiregrass plant escapes NESHAP. [Section 3.1.2]

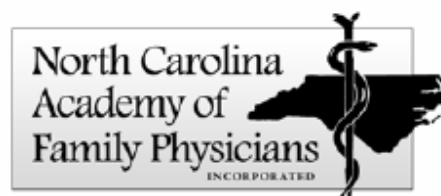
Georgia Should Do Better

In 2007 the Massachusetts Department of Environmental Protection issued guidance on biomass air pollution emissions and best available control technology, or BACT. The agency determined that biomass-fired steam electric generating units, similar to the proposed Wiregrass unit, have a threshold for sulfur dioxide emissions of 0.02 pounds per million BTU. That is, any biomass-fueled plant which would emit no more than 0.02 lb/MMBTU, it would be considered state-of-the-art and not be required to perform further analysis to meet the requirements of BACT. The Wiregrass permit issued by Georgia EPD allows SO₂ emissions of 0.09 lb/MMBTU, which is 350% over the BACT threshold set by Massachusetts DEP. Both Georgia and Massachusetts must abide by the Clean Air Act and both are regulated by the US Environmental Protection Agency. BACT in one state is BACT in other states.

The Medical Community Agrees

The North Carolina Academy of Family Physicians recommended the following:

Biomass burning of poultry litter and wood wastes creates emissions of particulate matter that research has shown increase the risk of premature death, asthma, chronic bronchitis, and heart disease. This burning process also creates numerous byproducts, including nitrogen oxides and volatile organic compounds that increase smog and ozone, which are known to increase lung disease and mortality; sulfur dioxides which also contribute to respiratory disease; arsenic which can increase the risk of cancer; mercury which can increase the risk of brain and kidney disease and affect the developing fetus; and dioxins which may increase the risk of cancer, heart disease, diabetes mellitus, developmental delays in children, neurotoxicity, and thyroid disease. These health effects would increase disability and death in all age groups, but particularly in the most vulnerable—developing fetuses, newborns, children, those with chronic illness, and the elderly. As a result of this increased disability and disease, medical costs in the state will increase.⁴



⁴ R. W. Watkins, MD, MPH, President, NC Academy of Family Physicians, Letter to D. Freeman, Secretary NC DENR, April 19, 2010