Blue Ridge Environmental Defense League
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November 25, 2011

Eric Cornwell, Program Manager
Stationary Source Permitting Program, Air Protection Branch
4244 International Parkway, Suite 120
Atlanta, Georgia 30354

RE: Permit Application No: 20770, North Star Jefferson Renewable Energy

Dear Mr. Cornwell:

On behalf of the Blue Ridge Environmental Defense League and our chapters and members in Georgia, I write to provide comments on the proposed air permit for North Star Jefferson Renewable Energy. The Division has been treating this permit as a minor source with regards to public participation and other matters. We believe the basis for this determination is incorrect. Therefore, the EPD must re-start the permitting process and re-notice the permit in the proper manner for a major source under Part 70 prevention of significant deterioration (PSD). For example, no permit documents have been made available to the residents of Wadley or Jackson County. We have been told that information which is necessary for public comments is available for review at the office of the Air Protection Branch in Atlanta, several hours away from Jefferson County; other than this and despite repeated requests, the permit application has not been made available. This is unacceptable.

North Star Jefferson would be a Major Source of Air Pollution

According to the State Implementation Plan Public Advisory issued by the Environmental Protection Division of the Georgia Department of Natural Resources, the proposed permit would allow construction and operation of a 24 MW (gross) steam-turbine generator powered by steam from a 358 MMBtu/hr boiler firing wood biomass and tire derived fuel and ancillary structures. The facility would be located in Jefferson County near the city of Wadley, Georgia.

As you know, under the federal Clean Air Act a major source subject to PSD (prevention of significant deterioration) is one which has the potential to emit more than 250 tons per year of certain air pollutants.[1] PSD facilities are subject to certain requirements for air quality review, pollution control limits and public participation. The pollutants regulated include NOx, SO2, CO, particulate matter and greenhouse gases. The threshold is lower for certain pollution sources. For example, PSD is triggered if the potential to emit is 100 tons per year from fossil-fueled steam electric plants or mixed fuel boilers with heat input of more than 250 MMBtu/hour and municipal incinerators burning more than 250 tons/day.[2] The question before the EPD is whether this unit is a biomass energy plant, a waste combustor, or both.

[1] 40 CFR §52.21(b)(1)(i)(b)
[2] 40 CFR §52.21(b)(1)(i)(a)

Based on the heat input rate of 358 MMBtu/hour for the North Star Jefferson facility and US EPA emission factors for wood burning units,[3] the potentials to emit air pollution are predicted to be as follows:

Pollutant	Emission Factor lb/MMBtu	Fuel/Control	Potential Emissions Tons per year (PTE)
PM	0.56	wet/no control device	878
PM	0.54	bark/mechanical collector	847
PM	0.10	all fuels/fabric filter	156
NOx	0.22	wet wood	345
NOx	0.49	dry wood	768
CO	0.17	fluidized bed combustion	267
CO	0.60	all but FBC	941
SO2	0.025	all fuel types	39
CO2	195.2	all conditions	306081
VOC	0.04	all conditions	63
TOC	0.06	all conditions	94

The PTE (potential to emit) is a product of the EPA emission factor in pounds per million Btu, the facilityôs rated heat input in Btu/hour and year round facility operation at 24 hours per day; i.e.,

EF lb/MMBtu x heat input 358 MMBtu/hour x 8760 hours/year = PTE

Clearly, depending on the condition of the wood fuel and the various pollution control devices required the potential to emit of the North Star Jefferson facility would be above the 250 ton/year threshold for PSD.

The US EPA issued guidance for greenhouse gases in March 2011, known as the ñTailoring Rule.ò The applicability test for GHGs to determine whether permits issued on or after July 1, 2011 are PSD is:

> PSD applies to the GHG emissions from a proposed new source if *either* of the following is true:[4]
>
> - PSD for GHGs would be required under Tailoring Rule Step 1, *or*
> - The potential emissions of GHGs from the new source would be equal to or greater than 100,000 TPY CO_2e basis and equal to or greater than the applicable major source threshold (i.e., 100 or 250 TPY, depending on the source category) on a mass basis for GHGs.

As shown in the table above, the North Start Jefferson plant could emit over 300 thousand tons of carbon dioxide per year, three times the threshold level for PSD. If the plant were to escape the requirements of a major source under the Clean Air Actôs Prevention of Significant Deterioration (PSD) rules, it would mean that control technology review, source impact analysis, air quality analysis, source information, and

[3] ñBackground Document Report on Revisions to 5th Edition AP-42, Section 1.6, Wood Residue Combustion in Boilers,ò US Environmental Protection Agency, July 2001

[4] PSD and Title V Guidance for Greenhouse Gases, EPA-457/B-11-001, March 2011

additional impact analysis would not be done. More air pollution and negative public health impacts would be the result for the residents of Wadley, Jefferson County and the Central Savannah River Area.

The Division should note that in 2007 the Massachusetts Department of Environmental Protection issued guidance on biomass air pollution emissions and best available control technology, or BACT.[5] The agency determined that any biomass-fueled plant should emit no more than 0.02 lb/MMBtu. That is the state-of-the-art and BACT. Georgia is subject to the Clean Air Act and is regulated by the US Environmental Protection Agency. BACT in one state is BACT in other states. Certainly, Georgia EPD should require the North Star Jefferson facilityøs permit to conform to this standard.

Tire Derived Fuel is not Biomass and Causes Toxic Air Pollution

If permitted by EPD, up to 20% of the fuel for the proposed facility in Jefferson County would be scrap tires. Used tires are not biomass. ñRubberò tires are manufactured from many compounds, but contain only about 14% natural rubber. The table below ranks the total composition, with natural rubber being the smallest.[6] In addition to natural rubber, modern automobile tires are made of styrene-butadieneï a synthetic co-polymer, polybutadieneï another synthetic compound, carbon black from petroleum, silica from sand or quartz, zinc oxide, steel, textile fabric and various chemicals.

Automobile Tire Composition

Carbon black	28%
Synthetic rubber	27%
Fabric, fillers, accelerators, antiozonants, etc.	16 - 17%
Steel	14 - 15%
Natural rubber	14 %

Burning tires can create higher levels of polycyclic aromatic hydrocarbons, dioxins and furans, zinc and particulate matter than the burning of coal. Burning used tires to generate electric power is problematic, unreliable and results in high levels of air pollution. This was the conclusion of an independent investigation of the circulating fluidized bed furnace (CFB) proposed for the Crawford Renewable Energy(CRE) tire-derived fuel (TDF) electric power generation plant in Crawford County, Pennsylvania:

> In summary, CREøs burning tire-derived fuel in its CFB furnaces will produce higher than projected emissions because the carbon black and zinc in tires interfere with combustion and the operation of the fluidized bed. Further, the kinetic nature of the combustion process results in the volatile matter of TDF

[5] ñBest Available Control Technology (BACT) Guidance, Biomass-Fired Electric Generating Units,ò James C. Colman, Assistant Commissioner, Bureau of Waste Prevention, MassDEP, April 18, 2007

[6] Rubber Manufacturers Association, website accessed November 25, 2011, http://www.rma.org/scrap_tires/scrap_tire_markets/scrap_tire_characteristics/#anchor156842

burning above the bed and therefore burning incompletely. The consequence is higher levels of emissions.[7]

Further, it is important to note that high air pollution emissions from this toxic fuel caused the shutdown of Tire Energy Corporationôs scrap tire-fueled energy plant in Martinsville, Virginia in 2007.

Environmental Justice

According to the United States Census Bureau, the population of Wadley is 2,088. The city is 77.11% African American, 20.26% White, 0.14% Native American, 0.05% Asian and 1.92% from other races. The median household income is $15,300 and 40.2% of the population is below the poverty line. By comparison, Jefferson County is 56.28% African American, 42.09% White, 0.12% Native American, 0.16% Asian, 0.01% Pacific Islander and 0.83% from other races. The median income for a household in the county was $26,120 and 23.00% of the population is below the poverty line.

It would be an environmental injustice if the State of Georgia were to permit a facility which emits excessive levels of toxic air pollution in a community which has higher rates of poverty and a greater percentage of black residents, relative to the rest of Jefferson County. The prospect of jobs must not sacrifice the health of our communities.

Conclusion

PSD regulations require: (1) a Best Available Control Technology (BACT) analysis; (2) a PSD increment analysis; (3) a NAAQS impact analysis; (4) a nonattainment area impact analysis; (5) an impact on class 1 areas analysis. At a minimum, Georgia EPD must attach the strictest PSD standards to the proposed permit. Moreover, the burning of wood and tires to produce power is an ill-considered idea; tires should not even be considered to be biomass and the residents of Jefferson County and Georgia do not deserve an additional, unnecessary source of toxic air pollution imposed upon their community. Finally, we request that a public hearing be held before EPD takes any action on this permit.

Respectfully,

Louis A. Zeller, Science Director
Blue Ridge Environmental Defense League

CC: Furqan Y. Shaikh, NOx Permitting Unit Manager

[7] Lake Erie Group of Sierra Club Pennsylvania Chapterôs Position Paper on Tires-to-Energy Plant proposed for Meadville, PA, http://lakeeriegroup.webs.com/tireplant.htm