BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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November 25, 2009

Keith Overcash
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

Re: PSD Determination Air Permit No. 09947R00

Dear Mr.Overcash:

On behalf of the directors and members of the Blue Ridge Environmental Defense League, I write to provide comments on the Division of Air Quality's preliminary determination that a construction and operation permit can be issued to Hertford Renewable Energy (HRE) for a new 60 MW unadulterated wood-fired boiler in Hertford County. This facility would be required to file an application for a complete Title V permit within 12 months of commencing operations.

The HRE plant is the first new unadulterated woody biomass plant to apply for a permit since North Carolina enacted Session Law 2007-397 requiring the state's electric suppliers to provide electricity from renewable energy resources. For this reason, I request a public hearing to receive comment on the impact of this facility.

Renewable energy resources in Session Law 2007-397 include "biomass that uses Best Available Control Technology (BACT) for air emissions".[1] The statute specifically require all ***new facilities*** that supply electricity to meet BACT:

Control of Emissions. – As used in this subsection, Best Available Control Technology (BACT) means an emissions limitation based on the **maximum degree a reduction in the emission of air pollutants that is achievable for a facility**, taking into account energy, environmental, and economic impacts and other costs. **A biomass combustion process at any *new renewable energy facility* that delivers electric power to an electric power supplier shall meet BACT.** (emphasis added)

[1] DSIREUSA North Carolina Incentives/Policies for Renewable and Efficiency 8-27-09

The Division has made the following determinations of Best Available Control Technology and NOx emissions limits:

"Therefore, DAQ selects SNCR as BACT for NOx emissions with an emission limit of 0.10 pounds per million Btu heat input (lb/MMBtu) for the power boiler. Compliance with the above limit will be determined utilizing a continuous emission monitoring system (CEMS) over a 30 day average."[2]

For particulate matter DAQ determined that an electrostatic precipitator met BACT requirements:

"Because the applicant selected the most effective control technology, an ESP (achieving the same emission rate as that achieved by a bagfilter), no further analysis is necessary."

"BACT is proposed to be set at 0.02 lb/million Btu [3-hour average]. Compliance will be determined by periodic stack testing."[3]

Good combustion control practices and boiler design are specified as BACT for carbon monoxide, sulfur dioxide and volatile organic compounds.

Wood-fired boiler **(ID No. ES-BLR-1)**	NO_x (as NO_2)		0.10 lb/MMBtu [30-day average]	Selective non-catalytic reduction (SNCR)
	CO	0.25 lb/MMBtu at 90 to 100% load [30-day average]		Proper boiler design and good combustion control practices
		0.30 lb/MMBtu at 60 to < 90% load [30-day average]		

[2] Air Permit Application Review/Preliminary Determination
[3] Ibid.

		0.40 lb/MMBtu at 40 to <60% load [30-day average]	
	VOC (as CH_4)	0.017 lb/MMBtu [3-hour average]	Proper boiler design and good combustion control practices
	PM_{10}/$PM_{2.5}$ (filterable only)	0.02 lb/million Btu [3-hour average]	Electrostatic precipitator OR Fabric filter
	SO_2	0.025 lb/million Btu [3-hour average]	N/A

To satisfy the definition of BACT found in the statute, emissions should reflect the "**maximum degree a reduction in the emission of air pollutants that is achievable"**. In its discussion of the PSD determination for Hertford, DAQ cites this definition of BACT:

BACT is defined as follows [40 CFR 51.155 (b)(12)]:

An emissions limitation...based on the maximum degree of reduction for each pollutant... which would be emitted from any proposed major stationary source or major modification which the reviewing authority, on a case-by-case basis, taking into account energy, environment, and economic impacts and other costs, determines is achievable... for control of such a pollutant. (emphasis added)

Using its PSD program authority to establish BACT on a case-by-case basis, DAQ has specified the pollution control technology required and determined the emissions rates in the draft permit as noted above. Those emission rates do not reflect the "maximum degree of reduction" required.

In Georgia, another Decker Energy biomass plant, Fitzgerald Renewable Energy projects these emissions from a similar 50 MW plant:[4]

7.2 Emission Controls

FRE will not trigger Prevention of Significant Deterioration permitting requirements and will be permitted as a minor source emitter. Biomass fired units are inherently the cleanest solid fuel sources of power due to the organic nature of the fuel (refer to Figure 7-2 below). Biomass is an extremely low sulfur fuel compared to coal and petcoke. The state of the art combustion FRE will be utilizing will result in CO2, SO2, and NOx emission rates which cannot be achieved by other solid fuels.

[4] Alternatives Evaluation and Site Selection Study USDA Rural Development December 2008 page 25-26

The emissions characteristics of the project will be in the following ranges:
• NOx lbs/mmbut < 0.075
• CO lbs/mmbtu < 0.075
• VOC's, SOx, and PM emissions are below EPA's major source thresholds
Because CO and NOx emissions will not exceed 250 tons per year, a minor source permit will be required for FRE. The minor source process will take approximately six months to complete.

In Massachusetts, the Division Of Energy Resources (DOER) has published guidance on emissions from wood-fired boilers.[5] For the two critical pollutants, NOx and PM, the limits are significantly less than those proposed for Hertford. For NOx, DOER recommends 0.065 lbs/MMBtu and for PM, 0.012 lbs /MMBtu.

RPS Monthly Average Emission Limits
for Wood-Fired and Other Solid-Fueled Steam Boilers

Nameplate Capacity	**NOx**	**PM**
> 10 MW	0.065 lbs/MMBtu	0.012 lbs/MMBtu.

Massachusetts BACT emissions limits for permitting wood-fired boilers are 35% lower for NOx and 40% lower for PM. Assuming that the technology available to biomass plants in Massachusetts and Georgia is also available to plants in North Carolina, the Division should require equivalent, or lower, emission limits. DAQ has set the emissions reduction bar for the first new woody biomass plant in North Carolina too low.

According to the PSD Determination, with the exception of ammonia, HRE is exempt from NC's Air Toxics Program because it will burn unadulterated wood:

2Q .0700 "Toxic Air Pollutant Procedures" and 2D .1100 "Control of Toxic Air Pollutants"
The proposed power boiler operation will result in deminimis increases in several TAPs listed in 2Q .0711. Since the power boiler is a combustion source that will **only burn unadulterated fuel (wood or biodiesel), the facility is exempt from the TAP rule pursuant to 2Q .0702(a)(18).** However, the facility proposes to utilize SNCR as a control device for the power boiler that will result in "ammonia slip" from the unreacted ammonia. The ammonia emissions will be much greater than then deminimis level of 0.68 pounds per hour in 2Q .0711; therefore, the Permittee has requested that the ammonia emissions be modeled to 95% of the acceptable ambient level (AAL) listed in 2D .1104 to maximize operating flexibility.

In addition, the permittee has requested that HCL emissions be uncontrolled but include a permit limit of 95% of North Carolina's AAL:

"The application was also amended on July 31, 2009 to revise the boiler hydrogen chloride (HCl) emission factor that resulted in the retraction of control equipment (dry sorbent injection and associated silo) for acid gas (HCl) removal."

[5] Guideline on the RPS Eligibility of Biomass Generation Units, November 7, 2007

In its October 26, 2009 letter to DAQ regarding the Titan Cement PSD Determination, EPA made this comment:

"Region 4 recognizes the NCDENR currently does not have a mechanism to regulate HCL at this time. However, we do encourage you to look at the proposed controls and analysis how the facility will meet this potential limit."

Hydrogen chloride should be controlled and monitored, not just modeled and after the fact tested.

In June 2009 the Environmental Management Commission adopted new air toxics rules that would have applied to HRE. Because of industry objections filed with the Rules Review Commission, these rules have been referred to the General Assembly for possible legislation in the next session.

EPA is currently preparing new rules to regulate CO2 and other greenhouse gases. HRE will be a major source of CO2 emissions and will undoubtedly exceed the proposed 25,000 tons per year threshold. As EPA discusses in its **"Fact Sheet -- Proposed Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule"[6]:**

- The final emissions thresholds for GHG emissions under the federal PSD and operating permits programs will take effect immediately upon promulgation of the final rule. **At that time, EPA will put the new thresholds into effect in state, local and tribal agency programs that run PSD and Title V operating programs under EPA approval.** Those agencies will continue to have the option to seek EPA approval for lower thresholds if they demonstrate that they can adequately implement the PSD program at the lower thresholds.

The PSD Determination should include discussion of the imminent regulation of greenhouse gases from HRE. Again, as North carolina's first ***new renewable energy facility*** burning woody biomass, the HRE permit deserves additional opportunity for public review and comment at a public hearing.

Thank you for the opportunity to comment.

Sincerely,

David Mickey
Blue Ridge Environmental Defense League

CC: Don van der Vaart, Ph.D, P.E., J.D.

[6] http://www.epa.gov/nsr/fs20090930action.html