

Suggested Permit Language  
ADAGE Hamilton County  
Proposed Nominal Net 53-MW Woody Biomass Power Plant

**Suggested Permit Language for Condition #6 of Section III, B (Power Island)**

*Rational for suggested permit language:*

ADAGE is proposing a 10% increased in the Boiler Heat input of 758 to account for two potential variables that could affect the estimated rated capacity of the BFB boiler. The two variables are 1) moisture content of the woody biomass to be utilized which can vary dramatically in Northern Florida and 2) accuracy of the methods that are commonly used to define heat input. The proposed language taking into account these two variables is provided below:

*Suggested Permit Language:*

Power Island Normal Operating Capacity: The maximum estimated heat input rating of the BFB boiler when combusting clean woody biomass is 834 MMBtu/hour (averaged over a twelve hour period). The actual heat input of this boiler will vary based on the moisture content of the clean wood and boiler operating conditions. Confirmation of the heat input will be based on steam process parameters or the methodology as defined in Appendix F of 40 CFR 75. The exact method for determination of the heat input shall be provided to the Department 90-days prior to commencement of operation of the BFB Boiler.

[Application No. 0470016-001-AC and Rule 62-4.070(3), F.A.C.]

**Suggested Permit Language for Condition #10 of Section III, B (Power Island)**

*Rational for suggested permit language:*

ADAGE is requesting the following pound per hour limits averaged over a 12 month period. The NO<sub>x</sub> limit has been increased slightly from that proposed by the Department to account for potential variability of the SCR system during initial startup, etc.:

- NO<sub>x</sub> is based on 0.08 lbs/MMBtu X 758 MMBtu/hr;
- SO<sub>2</sub> is based on 0.045 lbs/MMBtu X 758 MMBtu/hr; and
- CO is based on 0.08 lbs/MMBtu X 758 MMBtu/hr.

*Suggested Permit Language:*

Emission Standards: Emissions from the BFB boiler shall not exceed the following standards developed under the State Implementation Plan (SIP) permitting procedures. Compliance

with these limits also assumes compliance with the emission limitation in 40 CFR 60, Subpart Db and state rules. The following table presents the emission standards for the emission units associated with EU02.

Air Pollutant	Emission Limit	Maximum Emissions - Tons Per Year (TPY)
NO <sub>x</sub>	<p>60.6 lbs/hour (12 month average, rolled monthly)</p> <p>0.30 lb/MMBtu (30-day rolling average) – NSPS Db (40 CFR 60.44b)</p>	232.4
SO <sub>2</sub>	34.1 lbs/hour (12 month average, rolled monthly)	149.4
CO	60.6 lbs/hour (12 month average, rolled monthly)	232.4
PM/PM <sub>10</sub>	0.029 lbs/MMBtu (3 sample runs)	“a”
Opacity	10%, except for one 6-minute period per hour of not more than 14% (6-minute block averages)	--
HCl	“b”	9.7

“a” Potential emissions of PM/PM<sub>10</sub> are sufficiently low to ensure compliance with the 250 TPY threshold. Emission limit will maintain PM/PM<sub>10</sub> emissions below the threshold.

“b” No short-term emission limit required since state and federal rules do not contain emission limits for emissions of HCl.

Note: 12 month rolling average is based on the total number of hours the BFB Boiler will be operational during the 12 month period and includes startup, shutdown and malfunction events.

*Suggest Preliminary Best Management Plan for EU01*

Provided below is the preliminary Best Management Plan to be used for EU01 Fuel receiving, handling, storage and processing. ADAGE requests that a condition be included in the permit that states this plan is preliminary and the plan can be adjusted in the future to incorporate final engineering changes to the plant operations.

**PRELIMINARY BEST MANAGEMENT PLAN FOR FIRE PREVENTION AND MINIMIZATION OF FUGITIVE DUST**

Practice	Description
Best Management Practice – Fire Prevention /Spontaneous Combustion Minimization	<ol style="list-style-type: none"> <li>1) Contact local fire marshal to develop fire management plan. Plan shall be maintained on site.</li> <li>2) Fire Management plan to include a) requirement to train onsite personnel to handle incipient fires and training on the identification of potential fire hazards and 2) install and maintain equipment for plant personnel to handle incipient fires. The local fire department shall be invited to participate in onsite training.</li> <li>3) Daily observations of the woody biomass storage areas shall be performed by plant personnel to identify potential fire hazards. Plant personnel shall be trained on identification of potential fire hazards.</li> <li>4) Signs shall be posted at the plant, which identify potential fire hazards.</li> <li>5) Incoming unprocessed materials shall be stored in areas with a clearance between each storage area.</li> <li>6) The stacker reclaimer being used shall maximize the removal of older material in order to minimize the stacking of newer material on top of older material.</li> <li>7) Compaction of woody biomass materials in the storage areas shall be minimized.</li> </ol>
Best Management Practice – Minimization of Fugitive Dust	<ol style="list-style-type: none"> <li>1) Conveyor systems and associated drop points shall be enclosed or partially enclosed.</li> <li>2) Drop points to woody biomass storage areas shall be designed to minimize the overall exposed (or exposed to atmosphere) drop height.</li> <li>3) Periodic equipment maintenance shall be performed to maintain conveyor systems and associated drop point integrity. Appropriate plant records shall be maintained on equipment maintenance performed.</li> <li>4) Fuel silos shall be equipped with vent filters.</li> <li>5) Daily observations of the conveyor systems and associated drop point integrity to identify any equipment abnormalities.</li> <li>6) Plant personnel shall be trained on identification of warning signs for potential equipment malfunction.</li> <li>7) Signs shall be posted identifying potential warning signs of equipment malfunction.</li> <li>8) Procedures shall be established for defining excessive fugitive dust from woody biomass truck unloading operations. Plant personnel shall visually observe truck unloading operations and if excessive fugitive dust is detected appropriate fugitive dust minimization techniques shall be implemented. Plant personnel shall be trained on procedures for defining and minimizing excessive dust from the truck unloading operations.</li> <li>9) All major roadways at the plant shall be paved</li> </ol>

	<p>10) Mud, dirt or similar debris shall be removed promptly from the paved roads.</p> <p>11) Plant personnel shall be trained on what constitutes excessive dust on paved road.</p>
Storage Pile Management	<p>1) Woody biomass storage areas shall be managed to avoid excessive wind erosion.</p> <p>2) A woody biomass fugitive dust management plan shall be developed and maintained onsite. Plan shall identify warning signs for conditions that could result in excessive fugitive dust formation. Plant personnel shall be trained on what warning signs to look for.</p> <p>3) Mechanical moving of woody biomass by front end loaders and other supporting equipment shall be minimized on high wind event days.</p> <p>4) Daily visual observations of the woody biomass storage areas shall be performed and if conditions are right for fugitive dust formation, procedures from the fugitive dust plan shall be implemented.</p>

*Rational for Suggested Permit Language:*

ADAGE is proposing the following permit condition to reflect opacity limitations for emissions groups EU01, EU02 and EU03. No source specific opacity limit is being proposed for EU01 and EU03 fugitive sources since these sources will operate following Best Management Practices. The Best Management Practices should provide reasonable assurance that the state opacity limitation of 20 % will be maintained.

*Suggested Permit Language:*

Opacity Standard: In accordance with EPA Method 9, visible emissions from any baghouse or vent filter associated with emission groups EU01, EU02 and EU03 shall not exceed 10% based on a 6-minute average, except for one 6-minute period per hour of not more than 14% (6-minute block average).

[Rule 62-4.070(3) F.A. C.]