



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

June 4, 2007

Ms. E.A. Veronica Barringer  
Bureau of Air Quality  
South Carolina Department of Health  
and Environmental Services  
2600 Bull Street  
Columbia, South Carolina 29201

Dear Ms. Barringer:

By letter dated June 14, 2005, the Region 4 office of the U.S. Environmental Protection Agency (EPA) sent an opinion to the South Carolina Department of Health and Environmental Control (SCDHEC) on whether operations at two South Carolina emissions sources should be considered "fuel conversion plants" for prevention of significant deterioration (PSD) applicability purposes. The operations in question were wood waste (biomass) gasification operations at the Norbord South Carolina, Inc. (Norbord) oriented strandboard manufacturing facility and at the University of South Carolina (USC) campus in Columbia. In our letter we expressed the opinion that both biomass gasification operations should be considered fuel conversion plants. We also stated that our opinion did not mean the entire Norbord and USC facilities should be considered fuel conversion plants. Rather, our opinion was that just the operations (and emissions units) associated directly with biomass gasification constitute a fuel conversion plant for these facilities.

After our opinion letter was submitted, Norbord provided additional information to SCDHEC and asked for further review. SCDHEC in turn requested reconsideration by EPA. Upon further review of the statutory and regulatory history of the PSD rules and of past EPA statements on the activities constituting a fuel conversion plant, we now are of the opinion that the biomass gasification operation at the Norbord facility should not be considered a fuel conversion plant for PSD applicability purposes. The rationale for our revised opinion is provided below.

As stated in our original opinion letter, we are responding to SCDHEC's request based on how we believe such a request would be resolved under the federal PSD rules in Title 40 Code of Federal Regulations and under EPA policies. Our response does not represent final agency action. Instead, this letter provides guidance for SCDHEC to consider in its role as the PSD reviewing authority.

## Background

The PSD rules applicable to Norbord are South Carolina's rules in Regulation 61-62.5, Standard No. 7. SCDHEC's PSD rules, just like federal PSD rules in 40 CFR 52.21, contain a list of source categories for which the major source emissions threshold is 100 tons per year (tpy) of any individual regulated new source review (NSR) pollutant. One of these source categories is "fuel conversion plants." Sources not listed have a major source emissions threshold of 250 tpy.

Norbord operates three rotary gasifier/burner oxidizer systems at its oriented strandboard facility. Each system includes a rotary kiln gasifier generating a synthetic gas from gasification of wood waste. The synthetic gas is burned in a secondary combustion chamber producing hot exhaust gases used to produce steam and (in one system) hot oil for manufacturing process needs. A feature essential to the opinion expressed below is that the gasification process at Norbord does not involve fossil fuels. All of the material feeding the gasification process is a biomass, non-fossil material.

## Review of History on the Fuel Conversion Plant Source Category

As part of our reconsideration, we have reviewed the history of the PSD program as related to the establishment of the list of specific source categories now embodied in the definition of "major source." A summary of our review is as follows, starting with a summary of the statutory and regulatory history.

- Congress established the basic framework for a national air quality control program in the Clean Air Act as amended in 1970. These amendments, however, did not contain any explicit requirements on preventing significant deterioration of air quality.
- Responding to a lawsuit, the U.S. District Court for the District of Columbia issued an opinion (*Sierra Club v. Ruckelshaus*) on May 30, 1972, directing EPA to establish rules for preventing significant deterioration of air quality. On November 1, 1972, the U.S. Court of Appeals for the District of Columbia affirmed the opinion of the District Court. The District Court opinion was then stayed by the U.S. Supreme Court until June 11, 1973, when the Supreme Court (in an equally divided opinion) affirmed the judgment of the Court of Appeals, thereby upholding the District Court opinion.
- EPA proposed PSD rules on July 16, 1973 (38 FR 18986) and listed 16 source categories covered by the rules. This list did not include fuel conversion plants. Also, as of that time EPA had not introduced the 100 tpy/250 tpy two-tier approach to defining major sources.
- On August 27, 1974 (39 FR 31000), EPA re-proposed the PSD rules and included this statement in the preamble: "The list of sources subject to review has been expanded to include three additional source types - fuel conversion plants (such as coal gasification and oil shale plants) ...." The re-proposed rule itself did not contain a definition of the

term fuel conversion plants. In addition, the two-tier approach was still not part of PSD regulations.

- On December 5, 1974 (39 FR 42510), EPA promulgated the first set of PSD rules. These rules contained “fuel conversion plants” as a listed source category but without a definition of the term. The two-tier approach was still absent.
- In August 1977, Congress adopted the Clean Air Act Amendments of 1977 with a statutory PSD section. The 1977 amendments included the PSD 100 tpy/250 tpy two-tier concept along with a list of the source categories having a 100-tpy PSD major source threshold. The listed categories included fuel conversion plants, but without any definition of the term.
- Pursuant to the Clean Air Act Amendments of 1977, EPA issued implementing PSD regulations in June 1978 and revised them in August 1980 in response to the holdings in *Alabama Power Company v. Costle*. The 1980 PSD rules contained the 100-tpy source category list with fuel conversion plants as one of the categories but again without definition. This list (still without definitions) remains in current federal PSD rules and in current SCDHEC PSD rules.

We next proceed to a summary of EPA statements on the meaning of the term fuel conversion as expressed in various documents.

- PSD source clarification memo; January 20, 1976 - This memo was from EPA headquarters in response to an EPA Region 4 request for clarification on sources subject to PSD review. The memo contains this statement: “Fuel conversion plants are defined for purposes of PSD as those plants which accomplish a change in state for a given fossil fuel. The large majority of these plants are likely to accomplish these changes through coal gasification, coal liquefaction, or oil shale processing.”
- Cleveland Electric memo; May 26, 1992 - At the plant in question, Cleveland Electric proposed to produce fuel gas by means of gasifying municipal waste. EPA concluded that this process qualified as a fuel conversion plant and made the following statement: “Fuel conversion plants obviously include those plants which accomplish a change in state (e.g., solid to liquid to gas) for a fuel. This definition includes conversion of the following fuels: fossil (e.g., coal or oil shale); biomass (e.g., wood or peat); and anthropogenic (e.g., municipal waste derived fuel and inorganic fuel). The majority of such sources are likely to accomplish these changes through either gasification, liquefaction, or solidification. ... Generally, however, applicability for this source category is determined by whether a facility changes state (e.g., solid to gas) or form (e.g., process sawdust into a pellet) of a fuel.”
- Pencor-Masada Oxynol order; May 2, 2001 - In this order (referred to as the Masada I order) issued by the EPA Administrator in response to a title V operating permit petition, the Administrator covered various topics related to a refuse recycling and ethanol production facility. One of these topics was whether a gasifier associated with refuse

processing was a fuel conversion process. EPA's conclusion reads in part as follows: "Based on our review, EPA policy has historically defined this category [fuel conversion plants] as 'plants which accomplish a change in state for a given fossil fuel. The large majority of these plants are likely to accomplish these changes through coal gasification, coal liquefaction or oil shale processing.' In this case, where fossil fuels are not involved and where the processing involves hydrolysis, a chemical process, it is EPA's judgment that the Masada facility is not a fuel conversion plant." [The embedded quote is from the January 20, 1976 memo listed above.]

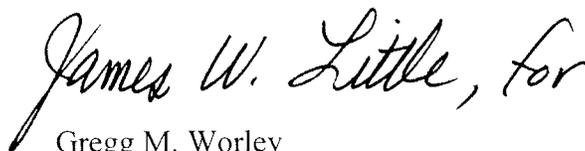
The 1976 memo and the 2001 order support the idea that the term fuel conversion plants is limited to facilities engaged in the processing of fossil fuels, whereas the 1992 memo does not.

### **Revised Opinion**

By this letter we now revise our opinion for the Norbord gasifier operation based on the likely meaning of the term fuel conversion projects at the time it was first introduced (as indicated by the preamble statement in the August 1974 re-proposal of PSD rules and in the January 1976 memo), recognizing that there have been no statutory or regulatory changes since that time necessitating a different view of the term. Our revised opinion is that the Norbord gasifier operation is not a fuel conversion plant because it does not involve a fossil fuel. This opinion is consistent with the Masada I order issued by the EPA Administrator in May 2001. Concurrence with this opinion has been obtained from EPA's Office of Air and Radiation (including the Office of Air Quality Planning and Standards) and Office of General Counsel.

If you have any questions concerning the opinion expressed in this letter, please call Jim Little at 404-562-9118.

Sincerely,



Gregg M. Worley  
Chief  
Air Permits Section