

Prevention of Significant Air Quality Deterioration Review

Final Determination

October 2014

Facility Name: International Paper - Savannah

City: Savannah

County: Chatham

AIRS Number: 04-13-051-00007

Application Numbers: 22636 and 22758

Date Application Received: June 2, 2014, and July 31, 2014



State of Georgia
Department of Natural Resources
Environmental Protection Division
Air Protection Branch

Keith Bentley – Chief, Air Protection Branch

Stationary Source Permitting Program

Eric Cornwell – Permitting Program Manager
David Matos – Chemicals Unit Coordinator
Casie Britton – Chemicals Unit Engineer

Planning & Support Program

James Boylan, Ph.D. – Data & Modeling Manager
Yan Huang, Ph.D. – Modeler

BACKGROUND

On May 28, 2014, International Paper - Savannah (hereafter IP-Savannah) submitted an application for an air quality permit to modify the No. 13 Power Boiler (PB13) in order to comply with the Boiler MACT and the Regional Haze Rule emission limits. The facility is located at 1201 West Lathrop Avenue in Savannah, Chatham County. The No. 13 Power Boiler has a heat input capacity of 1280 MMBtu/hr and is currently permitted to burn biomass (bark), pulverized coal, and fuel oil. The No. 13 Power Boiler also burns the non-condensable gases (NCGs) and condensate stripper off-gases (SOGs) as the control device for compliance with 40 CFR 60 Subpart BB and 40 CFR 63 Subpart S. The proposed project includes the following modifications to the No. 13 Power Boiler: the removal of the capability to fire fuel oil, the addition of load-bearing natural gas burners, and the optimization of combustion controls and the combustion air system.

On August 14, 2014, the Division issued a Preliminary Determination stating that the modifications described in Application Nos. 22636 and 22758 should be approved. The Preliminary Determination contained a draft Air Quality Permit for the construction and operation of the modified equipment.

The Division requested that IP-Savannah place a public notice in a newspaper of general circulation in the area of the existing facility notifying the public of the proposed construction and providing the opportunity for written public comment. Such public notice was placed in the Savannah Morning News (legal organ for Chatham County) on August 22, 2014. The public comment period expired on September 26, 2014.

A Public Question & Answer Session and Public Hearing were held on September 23, 2014, at the Mary Calder Golf Course Conference Room located at 1201 West Lathrop Avenue in Savannah. No public comments were received during the Public Hearing.

During the comment period, comments were received from U.S. EPA Region IV and the general public. There were no comments received from the facility.

A copy of the final permit is included in Appendix A. A copy of written comments received during the public comment period is provided in Appendix B.

U.S. EPA REGION 4 COMMENTS

Comments were received from James Purvis, Air Permits Section, Air, Pesticides & Toxics Management Division, U.S. EPA Region IV, by email on September 17, 2014. The comments are typed, verbatim, below.

Comment 1

EPA recommend the narratives (PD/statement of basis) produced by a State reflect and explain in detail the process and calculations the State used to reach the final project emission figures. At present, the PD simply abstracts this information and references the information provided by the applicant. Because GA EPD is the issuing permitting authority, the permit record should provide a detailed description and basis for the calculations used by EPD to arrive at the permitting decision. This is especially useful for the public and transparency of the permit record in projects where extensive netting has been relied upon in the determination of PSD applicability. EPA suggest a detailed description and/or example of netting calculations from this project be added in the final determination, or in this case, the final Title V narrative (amended).

EPD Response: IP-Savannah provided the following summary of how the PSD and PTE calculations were performed in Appendix B of the No. 13 Power Boiler PSD Permit Application.

Baseline actual emissions, emissions that could have been accommodated during the baseline (COA), and projected actual emissions are summarized in the table named “Summary of PSD Compound Emission Increases” where project increases are compared to the PSD Significant Emission Rates. The table labeled “Baseline Actual Emissions Calculations” includes the calculation of baseline emissions and the emissions that could have been accommodated per compound (COA).

Baseline emissions are based on actual monthly fuel rates for the baseline period (2012-2013) multiplied by actual emission factors, then summed over the 24-month period and divided by 2 to get average annual emissions. Actual emission factors are listed in the table named “Emission Factors for Power Boiler 13”. Baseline emissions and defined baseline period are located at the bottom of the table named “Baseline Actual Emissions Calculations” with the labels “24-month average annual emissions” and “Baseline Period”.

COA emissions are the highest monthly emissions annualized per compound. For example, if the maximum emissions occur January 2012 for filterable PM then that monthly value is divided by 31 days per month and multiplied by 365 days per year. COA emissions are located at the bottom of the “Baseline Actual Emissions Calculations” table after the Baseline emission calculation. “Max monthly emissions during baseline” display the highest monthly emissions during the baseline period, “Max Emission Period” defines the month in which the maximum emissions occur during the baseline period, and “Emissions the boiler could have accommodated during the baseline (tpy)” are the monthly emissions annualized per the example provided.

The projected actual emissions are calculated in the “Projected Actual Emissions” table. Projected actual heat inputs per fuel were based on the five-year plan and multiplied by projected actual emission factors to estimate projected actual emissions. Projected actual emission factors that differ from actual emission factors are located at the bottom of the table named “Emission Factors for Power Boiler 13” and include all natural gas factors and SO₂ and CO factors labeled as projected actual. Supporting documentation for the development of the projected CO emission factor is located on the sheet named “CO Emission Factor Development”.

Annual and maximum hourly potential emissions are calculated in the tables named “Potential to Emit- Power Boiler 13” and are based on two defined operating scenarios multiplied by potential emission factors. Potential emission factors are summarized in the table named “PTE Emission Factors for Power Boiler 13”.

Potential and actual emissions are summarized in the table named “Facility-Wide Emissions”.

SAVANNAH CITIZEN COMMENTS

The following comments were received from Savannah citizens, the Center for a Sustainable Coast, and the Sierra Club. The comments are typed, verbatim, below.

Comment from Erika Archibald, Ph.D., received by email on September 24, 2014

Please accept this email as a formal protest against the requested International Paper modification of its air quality permit, as presented at this week's hearing.

I realize you have not received many, if any, written comments on this matter, but this is not due to apathy amongst the public. Rather it is due to the ridiculously onerous way in which this matter has been presented, by both International Paper and EPD. I found some of the documents provided online (with some difficulty) and judged that even with a Ph.D. it would take me months to comb through them all, much less to understand them properly. Secondly, everyone knows that a big corporation like this will simply buy their way into whatever modifications they want, because governmental authorities aren't strong enough, or ethical enough, to stop them.

But the facts remain: International Paper earned \$29 billion in sales last year (according to their own website). Their only argument they present for non-compliance is that it is "too expensive" (that much was clear from the application documents). Clearly they CAN afford to do this properly, without increasing ANY emissions. They just don't want to.

EPD Response: A complete PSD analysis, including a BACT analysis, was conducted for the proposed modification to the No. 13 Power Boiler. The EPD review of the data submitted by IP-Savannah indicates that the proposed modification will be in compliance with all applicable state and federal air quality regulations.

The BACT analysis determined that, although catalytic oxidation and thermal oxidation were deemed technically feasible, both control technologies were deemed not to be BACT due to the adverse environmental and economic impacts. As an adverse environmental impact, both catalytic oxidation and thermal oxidation would result in collateral increases in emissions of other pollutants, including NO_x, CO₂, and H₂SO₄, from the combustion of additional fuel required to operate the oxidation system and the oxidation of other species in the effluent stream. The cost effectiveness of each aforementioned control technology was well above the reasonable cost effectiveness value for CO control and was, therefore, considered prohibitive.

It should be noted that a permitted emissions increase is not a non-compliance situation. Facility emissions increases are allowed by Georgia Rules and the Clean Air Act provided all applicable rules and regulations are met.

While permitted CO emissions are increasing, the effect on the air quality (as measured against the National Ambient Air Quality Standards) is insignificant – 0.3% of the eight-hour standard and 0.1% of the one-hour standard.

No changes have been made to the permit based on this comment.

Comment from Charles Sawyer, received by mail on September 26, 2014

Vote “No” on IP’s proposed permit modification. The monumental increase in carbon monoxide emission is simply not-acceptable – especially from a company that’s already raping the environment by excessive use of our water supply and already acknowledged as Chatham’s largest polluter.

Vote No! VOTE NO!

EPD Response: The Georgia Rules for Air Quality Control and the Federal Rules for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) are designed to protect the environment and human health. An air quality analysis is required of the ambient impacts associated with the construction and operation of the proposed modification. The main purpose of the air quality analysis is to demonstrate that emissions emitted from the proposed modification to an existing major stationary source, in conjunction with other applicable emissions from existing sources (including secondary emissions from growth associated with the new project), will not cause or contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD increment in a Class II or Class I area. NAAQS exist for NO₂, CO, PM₁₀, SO₂, Ozone (O₃), and lead (Pb). PSD increments exist for SO₂, NO₂, and PM₁₀.

It has been determined through approved modeling techniques that the estimated emissions for IP-Savannah, including the CO emissions, will not cause or contribute to a violation of any ambient air standard or allowable PSD increment. It has further been determined that the proposal will not cause impairment of visibility or detrimental effects on soils or vegetation. Any air quality impacts produced by project-related growth should be inconsequential.

The Georgia Air Quality Act and the Georgia Rules in 391-3-1-.03(1)(c) state that the permit for the construction or modification of any facility shall be issued upon a determination by the Director that the facility can reasonably be expected to comply with all the provisions of the Act and the rules and regulations promulgated thereunder. Therefore, Georgia EPD must issue an air quality permit for IP-Savannah’s proposed project if they meet all applicable requirements in the rules and regulations that are applicable.

No changes have been made to the permit based on this comment.

Comment from Stephen Willis, Program Vice Chair, Sierra Club Georgia Chapter, received by email on September 26, 2014

To whom it may concern,

Before any permitting changes for International Paper are approved there are several areas of concern which must be analyzed and the public must be informed of the results of this analysis in a clear, widely available, and easily understandable manner.

1. The impact and risks of ozone emissions in general, and the specifically those very significant ozone emission increases identified in the subject permit request must be clarified and explained to the public.
2. The cumulative ozone emissions which will foreseeably impact the Lower Savannah Region from
 - a. current,
 - b. approved but not yet developed
 - c. and likely to be approved and developed in the foreseeable future must be responsibly calculated and made known to the public. These impacts would include the discharge of six million or more truck trips through Savannah per year in support of expanded Port of Savannah throughput, and the discharge from the significantly increased burning of natural gas at the proposed LNG liquefaction facility on Elba Island.
3. Whether existing and in-process air quality permitting will exhaust permitable new emissions, and what effect this might have on the location of new, possibly preferable industry along the Lower Savannah River and in the Savannah area, and whether this might result in increased controls and restrictions on private vehicles.

EPD Response: Information regarding health effects of ozone is found on the Air Branch website at <http://www.georgiaair.org/information/o3.html>. Chatham County is designated by the US EPA as “in attainment” with the current 2008 National Ambient Air Quality Standard for ozone. Ambient monitoring data from 2012 shows zero days when ambient levels were above the standard. Ambient monitoring data from 1998 to 2012 is available on our website at <http://www.georgiaair.org/amp/report.php>.

Ozone is not being emitted directly from this operation. Ozone is formed in the atmosphere in a complex process whereas NO_x and organic compounds react in the presence of sunlight to form O₃. IP-Savannah’s proposal will result in a 484 ton per year decrease in emissions of the ozone precursor NO_x. While some USEPA literature lists CO as a precursor as well, CO is not regulated as such by federal regulations governing stationary sources.

Georgia EPD performs its permit reviews in accordance with state and federal regulations. 40 CFR 52.21 and Appendix W to 40 CFR Part 51 detail the general requirements for assessing air quality impacts due to the proposed project. Prediction of future development and traffic patterns of the Savannah area is beyond the scope of this permit review.

The proposed project will result in reductions of those compounds that have ambient concentrations nearer the National Ambient Air Quality Standard (NO₂, SO₂, and PM_{2.5}), and increase CO, which has ambient concentrations very far below the ambient standard. Thus, the project is likely to have an insignificant effect on potential new industry.

No changes have been made to the permit based on this comment.

Comment from David Kyler, Executive Director of Center for a Sustainable Coast, received by email on September 26, 2014

I have been copied on the comments about this application submitted to you by Stephen Willis and I share his concerns.

To support and expand on his inquiry, I add the following questions about this permit and its analysis. I ask that EPD provide a complete and well-circulated response prior to further action on it.

1. What are the relative merits/trade-offs between air emissions under the current permit and those under a proposed array of fuels?
2. How would the proposed changes affect the air quality profile in the Savannah Metropolitan Area, under the scenarios that Mr. Willis describes – including both existing and anticipated activities, including growth in population and corresponding vehicle emissions and economic activities, over the permit period?
3. What are the known and unknown, but suspected, interactive and cumulative effects of existing and projected emissions on the chemical and biological conditions of affected environmental features within range of these emissions (including air-shed and watershed), including waterways, wetlands, wildlife habitat, and human communities – including potential atmospheric deposition?
4. How will any associated/regulated particulates be controlled and removed for reliable containment or processing?

Your complete and substantive response to these questions will be greatly appreciated.

Thank you.

EPD Response: The proposed project is not an expansion project and is primarily for compliance with the requirements of the Boiler MACT (40 CFR 63 Subpart DDDDD). As mentioned in the response to Mr. Willis, the trade-offs will be that the proposed project will result in reductions of those compounds that have ambient concentrations nearer the National Ambient Air Quality Standard (NO₂, SO₂, and PM_{2.5}), and increase CO, which has ambient concentrations very far below the ambient standard. There will also be reductions in emissions of fluorides, lead, H₂SO₄, and greenhouse gases, including CO₂. While permitted CO emissions are increasing, the effect on the air quality (as measured against the National Ambient Air Quality Standards) is insignificant – 0.3% of the eight-hour standard and 0.1% of the one-hour standard.

The governing air quality regulations (40 CFR 52.21 in the Federal Rules and Georgia Rule 391-3-1-.02(7) in the Georgia Rules) detail the review of impacts. In accordance with these regulations, it has been determined through approved modeling techniques that the impacts of the estimated emissions for IP-Savannah, including the reductions in PM_{2.5}, SO₂, and NO_x emissions and the increase in CO emissions, are insignificant and will not cause or contribute to a violation of any ambient air standard or allowable PSD increment. It has further been determined that the project will not cause impairment of visibility or detrimental effects on soils or vegetation.

Predictions as to the future growth of Chatham County and the Savannah Metropolitan Area are beyond the scope of this review.

The particulate matter emissions from the No. 13 Power Boiler are controlled by the existing electrostatic precipitator.

No changes have been made to the permit based on this comment.

Comment from Samantha Claar, received by email on September 26, 2014

EPD/Gentlemen,

Sept. 26, 2014

As a Savannah resident for many years - one who remembers distinctly the paper mill smell before EPD's Air Protection intervention, I urge you to assume the worst with this request from IP. They make *Millions* - they still pollute with impunity. I have seen their pollution control facilities on the Savannah River and I am appalled.

Allowing IP to release such a volume of carbon dioxide into our air because THEY think it "too expensive" is unconscionable.

Having the 'public' meeting in their facility is improper on your part. Allowing them to "expedite" this request by paying you 20,000.00 is suspect in the extreme.

It is not OK to bend pollution controls for the guys who are polluting our river, ground, ground waters and air. Any exception to the already weak rules you barely enforce are absolutely not acceptable. They claim hardship - well, let them meet ALL the requirements that are supposed to safe guard US from THEM - and they can charge for their paper and cardboard accordingly. It is not our job - or your job - to make sure their profit margin never goes down.

Be the line in the sand that you are supposed to be.. be brave.. Say NO to IP's request.

EPD Response: In actuality, the proposed project will result in a decrease of over 180,000 tons per year of carbon dioxide.

The public meeting was held at the Mary Calder Golf Course Conference Room; this venue is open to the public and is not controlled by a gate. More importantly, this venue was near to those residents living closest to the International Paper facility.

The expedited permitting program was established by State of Georgia Statute and began in May 2013. Permit applications accepted into the expedited permit program still undergo the same level of review as "regular" permit applications.

The BACT analysis determined that, although catalytic oxidation and thermal oxidation were deemed technically feasible, both control technologies were deemed not to be BACT due to the adverse environmental and economic impacts. As an adverse environmental impact, both catalytic oxidation and thermal oxidation would result in collateral increases in emissions of other pollutants, including NO_x, CO₂, and H₂SO₄, from the combustion of additional fuel required to operate the oxidation system and the oxidation of other species in the effluent stream. The cost effectiveness of each aforementioned control technology was well above the reasonable cost effectiveness value for CO control and was, therefore, considered prohibitive.

No changes have been made to the permit based on this comment.

EPD CHANGES

The permit was modified to include reference to Application No. 22758, dated July 31, 2014, for the addition of the approved Boiler MACT compliance date extension, which was inadvertently not included.

APPENDIX A

AIR QUALITY PERMIT

2631-051-0007-V-02-2

APPENDIX B

WRITTEN COMMENTS RECEIVED DURING COMMENT PERIOD