

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
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Project Summary
For an Application
From Tate & Lyle Ingredients Americas, Inc.
For a Construction Permit
For Two New Boilers at
2200 East Eldorado Street, Decatur, Macon County

Site Identification No.: 115015ABX

Application No.: 07050046

Date Received: May 21, 2007

Schedule

Public Comment Period Begins: August 07, 2007

Public Comment Period Closes: September 06, 2007

Illinois EPA Contacts

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I. INTRODUCTION

Tate & Lyle Ingredients Americas, Inc. (Tate & Lyle) has requested a construction permit for installation of two boilers adjacent to the Co-Generation facility at its corn processing complex in Decatur, Illinois. The construction of the proposed new boilers requires a permit from the Illinois EPA because of their emissions.

The Illinois EPA has reviewed Tate & Lyle's application and made a preliminary determination that the application for the proposed project meets applicable requirements. Accordingly, the Illinois EPA has prepared a draft of the air pollution control construction permit that it would propose to issue for this project. Before issuing this permit, the Illinois EPA is holding a public comment period to receive comments on the proposed issuance of this permit and the terms and conditions of the draft permit.

II. PROJECT DESCRIPTION

Tate & Lyle processes corn into a variety of products including starches, animal feeds, dextrose, and other products. The manufacturing processes use steam that is produced by boilers at the source.

Tate & Lyle is proposing to install two new identical boilers (Boiler #3 and #4) with a nominal capacity of 184 mmBtu/hr, each. Natural gas would be the primary fuel and distillate fuel oil would be the secondary fuel for the new boilers. The new boilers are backup boilers to the coal-fired boilers at the source. The new boilers will replace two existing gas/oil -fired boilers, Boilers #23 and #25, which will be permanently retired following the startup of the new boilers.

Emissions of carbon monoxide (CO), nitrogen oxide (NOX), particulate matter (PM), sulfur dioxide (SO₂), and volatile organic material (VOM) would result from the combustion of natural gas and fuel oil in the boilers.

The principal air contaminants emitted from the proposed boilers would be NO_x and CO. NO_x can be formed thermally by combination of oxygen and nitrogen in the air at the temperatures at which fuel is burned. NO_x can also be formed from the combination of any nitrogen in the fuel with oxygen. This is not relevant for burning of natural gas, which contains minimal amounts of nitrogen. CO is formed by the incomplete combustion of fuel. CO is associated with most combustion processes and is found in measurable amounts in boiler exhaust. The new boilers will be equipped with low-NO_x burners and flue gas recirculation system to minimize NO_x emissions. Emissions of CO are minimized by good combustion practices.

VOM and PM are also emitted as a result of incomplete combustion of fuel. SO₂ is also formed from combustion of natural gas or fuel oil.

III. PROJECT EMISSIONS

The potential annual emissions from the two boilers combined will be 58 tons of NO_x, 97.4 tons CO, 37.6 tons of SO₂, 11.6 tons of PM/PM₁₀ and VOM, each.

Tate & Lyle has shown that the construction and operation of the new boilers will not constitute a major modification pursuant to the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This is because this project will be accompanied by a contemporaneous decrease in NOx emissions from the permanent shutdown of Boilers #23 and #25. The net change in NOx emissions resulting from the installation of the new boilers and permanent shutdown of Boilers #23 and #25 is a net increase of 37.4 tons/yr. (See Attachment 1 of the draft permit.)

IV. APPLICABLE EMISSIONS STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. The proposed project will comply with applicable state emission standards (35 Ill. Adm. Code: Subtitle B).

The new boilers are also subject to the federal New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db. The Illinois EPA administers the NSPS in Illinois on behalf of the United States EPA under a delegation agreement. The application shows that the new boilers would comply with the applicable NSPS standards, which will have to be verified by emission testing and monitoring when the boilers begin operation.

The new boilers would also be subject to the relevant provisions of the federal National Emission Standards of Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD as adopted by USEPA if a case-by-case determination of Maximum Achievable Control Technology (MACT) is required for the boilers. The standards adopted by USEPA were recently vacated by the court pursuant to a request by USEPA. Accordingly, a case-by-case determination of MACT may be required under Section 112 of the Clean Air Act if it is determined that this requirement is triggered by the emissions of the source, rather than the emissions of the individual process or production unit. The Illinois EPA administers NESHAP in Illinois on behalf of the United States EPA under a delegation agreement. The application shows that the new boilers would comply with the NESHAP standard adopted by USEPA, which limits emissions of CO as a surrogate for emissions of organic hazardous air pollutants. If MACT must be established for the new boilers, compliance with the NESHAP limit would have to be verified by emission testing and monitoring when the boilers begin operation, consistent with the compliance procedures of the NESHAP as adopted by USEPA.

V. APPLICABLE REGULATORY PROGRAMS

This project is not considered a major modification under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21. This is because the potential increase in emissions from the proposed project, as limited by the permit, would be less than the major source thresholds for PSD for all pollutants.

VI. REVISED PERMIT

The conditions of the draft permit for the project contain limitations and requirements for the new boilers. The draft permit also identifies measures that must be used as good air pollution control practices to minimize emissions from the new boilers.

The draft permit includes enforceable limits on emissions and operation of the project to assure that project remains below the levels at which it would be considered major for PSD. In addition to limiting annual emissions, the permit also includes limits on hourly emissions based on maximum amount of heat input and fuel that can be used in the new boilers. The permit also includes provisions addressing actions that must be taken to reduce emissions so that the project not becoming subject to the PSD rules, i.e., removal of existing boilers #23 and #25 when the new boilers become operational.

The permit also establishes appropriate compliance procedures for the boilers, including requirements for emission testing, monitoring, recordkeeping, and reporting. Emission testing is required as part of the initial shakedown and operation of the new boilers after completion of construction.

These measures are being imposed to assure that the emissions of the boilers are accurately tracked to confirm compliance with both the short-term and annual emission limits established for them.

VII. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that the proposed project meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue a construction permit for the project.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 IAC Part 166.