

I. INTRODUCTION

Corn Product International, Inc. - Argo Plant (CPC) has proposed to construct an electric/steam generation facility in Bedford Park, Cook County. The CPC would use three natural gas fired boilers to generate electricity and steam for the plant. The CPC has also proposed to remove the three existing coal fired boilers and two older natural gas fired boilers. The construction of the proposed facility requires a permit from the Illinois EPA because of its associated air emissions.

II. PROJECT DESCRIPTION

The proposed project will include removal of the three existing coal fired boilers and two older natural gas fired boilers, installation of three natural gas fired boilers each equipped with low NO_x burner and CO/VOC oxidation catalyst.

Emissions of carbon monoxide (CO), nitrogen oxide (NO_x), particulate matter/particulate matter <10 microns (PM/PM₁₀), sulfur dioxide (SO₂) and volatile organic material (VOM) would result from the combustion of fuel 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. Thermal NO_x is formed during the operation of all common high temperature combustion processes including boilers. 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. VOM and PM/PM₁₀ are also emitted as a result of incomplete combustion of fuel. SO₂ is also found from combustion of natural gas.

CO/VOM emissions are controlled by oxidation catalyst. PM/PM₁₀ are controlled by proper combustion control and firing natural gas fuel, which has negligible ash content.

III. PROJECT EMISSIONS

The annual emissions increased from the project would be limited to 90.0 tons of CO and 15.3 tons of VOM. The net annual decrease in emissions from the project due to the shutdown of the coal fired boilers will be 2788.9 tons of NO_x, 105.1 tons of H₂SO₄, 847.1 tons of PM/PM₁₀, and 12,200 tons of SO₂. These limits are based on the maximum emissions requested by CPC, including the maximum firing rate of each boilers (600 mmBtu/hr), and the design emission data. Actual annual emissions of the facility would be less than these limits to the extent that the actual performance of the boilers is better than projected and the boilers are not utilized as much.

IV. APPLICABLE EMISSION 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 readily comply with applicable state emission standards (35 Ill. Adm. Code: Subtitle B).

The boilers are also subject to the federal New Source Performance Standards (NSPS), 40 CFR 60 Subpart Db, for Industrial-Commercial Steam Generating Units. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement. These standard addresses NO_x emission from boilers limiting NO_x emissions to 0.1 lb/mmBtu, as applicable for low heat release boiler. The project should readily comply with this standard.

V. APPLICABLE REGULATORY PROGRAMS

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

VI. PROPOSED PERMIT

The conditions of the draft permit for the facility contain limitations and requirements for the new boilers and existing boilers to help assure that the facility complies with applicable regulatory requirements. The draft permit also identifies measures that must be used as good air pollution control practices to minimize emissions from the boilers.

The draft permit includes enforceable limits on emissions and operation for the boilers and existing boilers to assure that facility 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, limitations on the amount of fuel that can be used in the boilers.

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

These measures are being imposed to assure that the emissions of the boilers and existing 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 permit meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue this permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions of the draft permit.