

Illinois Environmental Protection Agency
Bureau of Air, Permit Section

Project Summary for a
Construction Permit Application for a
New Natural Gas-Fired Boiler at the
University of Illinois at Chicago – West Campus
Chicago, Illinois

Site Identification No.: 031600CRS
Application No.: 13080001
Date Received: August 2, 2013

Schedule

Public Comment Period Begins: December 20, 2013
Public Comment Period Closes: January 19, 2014

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I. INTRODUCTION

The University of Illinois at Chicago (UIC) is proposing to construct a natural gas-fired boiler at its West campus. The construction of the boiler requires an air pollution construction permit from the Illinois EPA.

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed UIC'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 construction permit that it would propose to issue for the proposed project. However, before issuing the permit, the Illinois EPA is holding a public comment period to receive comments on the proposed issuance of the permit and the terms and conditions of the draft permit.

II. PROJECT DESCRIPTION

The project involves installation of a new boiler, Boiler #7, at UIC's West Campus. The boiler will supply steam for heating and cooling of buildings at the West Campus and for hot water. The boiler will fire natural gas as its primary fuel and distillate oil for backup. The rated capacity of the boiler will be 220 million Btu/hour. The new boiler is planned as a replacement for an existing natural gas fired boiler (existing Boiler #7) that is near the end of its useful life. However, the application does not rely on the shutdown of this existing boiler.

The principal air pollutants emitted from the boiler are nitrogen oxides (NO_x), carbon monoxide (CO). As the boiler burns fuel, it also emits carbon dioxide (CO₂), which is now regulated as it is a greenhouse gas (GHG). The boiler is also a source of emissions of volatile organic material (VOM), particulate matter (PM) and sulfur dioxide (SO₂).

III. PROJECT EMISSIONS

The potential annual emissions of the new boiler, as would be allowed by the draft construction permit, are summarized below. It is expected that actual emissions would typically be less than these permitted emissions as the boiler would typically operate at less than their permitted capacity.

Potential Annual Emissions of the Project (Tons/Year)

NO _x	CO	VOM	PM ¹	PM ₁₀ /PM _{2.5}	GHGs (as CO ₂ e)
37.2	91.9	2.4	2.6	5.7	73,800

¹ PM only includes filterable particulate as measured by USEPA Method 5 or other appropriate USEPA Test Method for PM.

Since the new boiler is replacing an existing natural gas-fired boiler, it is expected that this project will be accompanied by decreases in emissions due to shutdown of the existing boiler. However, UIC is not relying any emission decreases from the shutdown of the existing boiler.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with Illinois Pollution Control Board emission standards. The Board's emission standard represents the basic requirements for sources in Illinois. The application shows that the proposed project will readily comply with applicable state emission standards, including the emission standards and regulations of the State of Illinois (35 IAC Subtitle B).

There are federal emission standards applicable to the boiler, i.e., New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subpart Db. These standards apply to sources where steam generating units of certain capacity are being used after a certain date.

V. APPLICABILITY OF NEW SOURCE REVIEW

This project will not constitute a major project for purposes of New Source Review rules, i.e., state rules for Major Stationary Sources Construction and Modification (MSSCAM), 35 IAC Part 203, and the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This is because permitted emissions from the new boiler are not significant. In particular, the permitted emissions of the boiler are less than 40 tons/year for NO_x, 100 tons/year for CO and 75,000 tons/year for GHG, as CO₂e.

VI. PERMIT CONDITIONS

The conditions of the permit set forth the air pollution control requirements that apply to the new boiler. These requirements include the applicable emission standards that apply to boiler.

The permit also establishes enforceable limits on the amount of emissions for which the project is permitted. In addition to limits on emissions, the permit includes operational limits for the type and amount of fuel used by the new boiler. This is necessary to make the emission limits practically enforceable.

The permit also establishes appropriate compliance procedures for initial and ongoing operation of the boiler, including requirements for performance testing, monitoring, recordkeeping, and reporting. These measures are imposed to assure that the operation and emissions of the new boiler are appropriately tracked to confirm compliance with the various limits and requirements for the boiler.

VII. REQUEST FOR COMMENTS

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

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