

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
1021 N. Grand Avenue East
P.O. Box 19506
Springfield, Illinois 62794-9506

Project Summary
Proposed Construction Permit
Aligned Data Centers (EGV) PropCo, LLC
Elk Grove Village, Cook County, Illinois

Site Identification No.: 031440AWF
Application No.: 24050021

Schedule

Public Comment Period Begins:
Public Comment Period Closes:

Illinois EPA Contacts

Permit Analyst: Salim Bouabid
Community Relations Coordinator: Brad Frost
217/782-7027
Brad.Frost@illinois.gov

I. INTRODUCTION

Aligned Data Centers (EGV) PropCo, LLC. has applied for a Construction Permit for one hundred and twelve (112) diesel-powered emergency generator sets at its proposed facility located at 50 AND 150 NW Point Blvd in Elk Grove Village. The emergency generator sets require an air pollution control construction permit because it is a source of emissions. The Illinois EPA has prepared a draft of the permit that it would propose to issue for the construction of the emergency generator sets. However, before issuing the permit, the Illinois EPA is holding a public comment period to receive comments on this proposed action and the terms and conditions of the draft permit that it would propose to issue.

II. SOURCE DESCRIPTION

Aligned Data Centers (EGV) PropCo, LLC. will be a data center for business-critical information and other computer-related services on servers. The emission units at this plant that require a construction permit are shown in Table 1, below.

Table 1. Listing of Non-Exempt Emission Units Located at the Source.

Emission Unit and Description	Construction Date (and Date Last Modified)
Thirty-five (35) 3,000 kWe Diesel-Powered Emergency Generator sets	TBD
Seventy-seven (77) 3,000 kWe Diesel-Powered Emergency Generator sets, each controlled by Selective Catalytic Reduction (SCR)	TBD

These units are sources of emissions because Nitrogen Oxides (NO_x) are generated from combustion of distillate fuel oil in the generator sets. NO_x is formed thermally by the combination of oxygen and nitrogen in the air at the temperatures at which fuel is burned. Thermal NO_x is formed during all common high temperature combustion processes.

The following table lists the annual Potential to Emit (PTE) of pollutants to be emitted from this source, as limited by the proposed Construction permit:

Table 2. Actual and Potential (as limited by permit) Emissions of the Source.

Pollutant	PTE as limited by permit (tons/year)
Carbon Monoxide (CO)	85.64
Nitrogen Oxides (NO _x)	47.07
Particulate Matter (PM)	16.03
Sulfur Dioxide (SO ₂)	0.08
Volatile Organic Material (VOM)	42.13

The above limits are based on the fuel consumption limit of 550,715 gal per year and the maximum emission factor at any engine load. Emission factors for CO, NO_x, PM, and VOM are derived from the manufacturer data sheet. NO_x annual emissions are calculated based on seventy-seven of the engines (77 EG) using 93% overall reduction efficiency of the SCR control device. The emission factor

for SO₂ is derived from Table 3.4-1, AP-42, Fifth Edition, Volume I, Supplement B, October 1996, using a fuel sulfur content of 0.0015%.

Because this source has not yet been constructed, there have been no reported emissions.

This source also contains emission units and activities that are exempt from permitting under 35 Ill. Adm. Code 201.146 and the emissions from such units are not limited by the conditions of the draft permit. These emission units include:

One hundred and twelve (112) diesel fuel sub-tanks.

Based on a review of the estimated potential emissions from the exempt emission units as included in the permit application, the Illinois EPA has determined that the emissions from such exempt emission units are trivial and will not contribute to this source being a major source of emissions for any regulated pollutants emitted from any such exempt emission unit. This is because the emission limit for NO_x in the draft construction permit is 95% or less of the applicable major source threshold, and the combined PTE of the exempt emission units are less than 5% of the applicable major source threshold. In other words, the emission limit for NO_x has been limited to 95% of the applicable threshold (or 50 tons/year) by the draft construction permit and the combined potential to emit of the NO_x from the exempt units is estimated to be less than 5% of 50 tons/year. In addition, the emission limit for VOM in the draft construction permit is 90% or less of the applicable major source threshold (or 50 tons/year). Furthermore, the emission limit for CO in the draft construction permit is 90% or less of the applicable major source threshold (or 100 tons/year).

In addition, the short-term record keeping in the permit has been restricted to more stringent frequency of daily record keeping instead of the typical monthly record keeping.

In cases where the potential emissions of exempt emission units may contribute to the source exceeding major source thresholds (for example, if the emission limits in the draft construction permit were 95% or more of the applicable major source threshold and the exempt units' PTE were 5% or more of the threshold) the Illinois EPA would have established limits on such emission units in the draft construction permit that would normally be exempt from permitting. The permitting exemptions in 35 Ill. Adm. Code 201.146 do not relieve the owner or operator of any source from any obligation to comply with any other applicable requirements.

III. GENERAL DISCUSSION

Construction permits are federally enforceable, that is, the terms and conditions of the permits can be enforced by the United States Environmental Protection Agency (USEPA) and the public under federal law. The permit can also be enforced by Illinois government and the public under state law. These permits can establish federally enforceable limitations on the operation and emissions of a source that restrict the potential emissions of the source. However, in the absence of federally enforceable conditions and limitations, the plant's potential emissions would be such that the plant would be considered a major source.

The source would be allowed to construct the one hundred and twelve emergency generator sets at this plant under this draft construction permit because the actual

emissions of the plant will be below the levels at which the plant would be considered a major source under Title I of the federal Clean Air Act.

The Construction permit limits the operation and annual emissions of the emergency generator sets to below the major-source-threshold of 50 tons for NO_x and VOM and also limits the annual emissions of CO to below the major source-threshold of 100 tons. The potential emissions of other pollutants such as PM and SO₂ from the emergency generator sets are small enough that no restrictions are needed to avoid being major source of these pollutants.

IV. APPLICABLE EMISSION STANDARDS

All emission units in Illinois must comply with state emission standards adopted by the Illinois Pollution Control Board. These emission standards represent the basic requirements for sources in Illinois. The one hundred and twelve diesel-powered emergency generator sets are subject to 35 Ill. Adm. Code Part 212 Subpart B (Visible Emissions), which limits the opacity of the PM emissions to no more than 30%. The diesel-powered generator sets are also subject to 35 Ill. Adm. Code Part 214 Subpart K (Process Emission Sources), which limits the sulfur content of the fuel oil used to 15 parts per million (ppm).

The one hundred and twelve diesel-powered emergency generator sets to be constructed at this source are subject to the New Source Performance Standards (NSPS) for Stationary compression Ignition Internal Combustion Engines, 40 CFR 60 Subpart IIII. The Illinois EPA is administering the NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

The one hundred and twelve diesel-powered emergency generator sets to be constructed at this source are also subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines 40 CFR 63, Subpart ZZZZ. The Illinois EPA is administering the NESHAP in Illinois on behalf of the United States EPA under a delegation agreement.

The application shows that the plant will be in compliance with applicable state and federal emission standards.

V. CONTENTS OF THE PERMIT

The Construction permit that the Illinois EPA is proposing to issue will identify the specific emission standards that apply to the emission units at the plant. As explained, the one hundred and twelve emergency generator sets are subject to the NSPS for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60 Subpart IIII, the NESHAP for Stationary Reciprocating Internal Combustion Engines 40 CFR 63, Subpart ZZZZ, 35 Ill. Adm. Code Part 212 Subpart B, and 35 Ill. Adm. Code Part 214 Subpart K. The NSPS requires that the owner or operator of each subject engine purchase and operate only engines that have been certified by their manufacturer to meet emission standards set by USEPA and that the owner or operator install and configure the engines according to manufacturer's specifications. The NESHAP requires that each new engine comply with the NSPS standards in 40 CFR 60 Subpart IIII. The conditions of this permit are intended to ensure that the source continues to comply with applicable emission standards.

The permit would also contain limitations and requirements to assure that this plant is operated as a non-major source. The permit would limit emissions of NO_x and VOM of the one hundred and twelve diesel-powered generator sets to be constructed at the

plant to below the major-source-thresholds of 50 tons for NO_x and VOM, and also limit CO emission to the major-source threshold of 100 tons per year (Annual emissions of all other pollutants from the plant are well below the applicable major source thresholds).

The permit would also set limitations on the power rating, and operating hours for each engine load associated with each generator set that may be operated.

The permit conditions would also require appropriate compliance procedures, including inspection practices as well as recordkeeping and reporting requirements. The source must carry out these procedures on an on-going basis to demonstrate that the plant is being operated within the limitations set by the permit and the plant's emissions are being properly controlled.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that the source has met the requirements for issuance of its permit. The Illinois EPA is therefore proposing to issue the permit.

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.