

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
1021 N. Grand Avenue East
P.O. Box 19506
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Project Summary
Proposed Construction Permit
General III, LLC
Chicago, Cook County, Illinois

Site Identification No.: 031600SFX
Application No.: 19090021

Schedule

Public Comment Period Begins: March 30, 2020
Public Comment Period Closes: June 13, 2020

Illinois EPA Contacts

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I. INTRODUCTION

General III, LLC has applied for a Construction Permit for a scrap metal recycling plant to be located at 11600 South Burley Avenue in Chicago. This plant is required to obtain an air pollution control construction permit prior to beginning construction because it is a new source that contains emission units that are not exempt from the obligation to obtain a construction permit pursuant to 35 Ill. Adm. Code 201.146. The Illinois EPA has prepared a draft of the construction permit that it would propose to issue for the construction of the plant. 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

General III, LLC proposes to construct and operate a scrap metal recycling facility to move their existing operation of General II, LLC located 1909 North Clifton Avenue in Chicago, Illinois. The new facility will receive recyclable material such as End of Life Vehicles, used appliances, and metal scrap material to be shredded and processed in a variety of metal products, such as ferrous and non-ferrous materials. The emission units at this plant that require an 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)
<u>Hammermill Shredder System:</u> One (1) Hammermill Shredder with Integral Water Injection System equipped with capture hood and Cyclone, and controlled by a Roll-Media Filter, 15.0 mmBtu/hour Natural Gas-Fired Regenerative Thermal Oxidizer (RTO), and Quench/Packed Tower Scrubber with feed and takeaway conveyors; One (1) Vibratory Conveyor; and One (1) Shredder Infeed Conveyor	TBD
<u>Ferrous Material Separation System:</u> One (1) Poker Picker with Gravity Chutes; Seven (7) Magnetic Separators; Two (2) Z-Box Separators with Cyclones; Seventy (70) conveyor transfer points; Two (2) Ferrous Metal Stacking Conveyors; One (1) Auto Shredder Residue (ASR) Stacking Conveyor Ferrous Material Barge Loading; Ferrous Material Rail Car Loading; and Ferrous Material Truck Loading	TBD

Emission Unit and Description	Construction Date (and Date Last Modified)
Non-Ferrous Material Separation System: One (1) ASR Feed Hopper with Vibratory Batch Feeder; Eight (8) Magnetic Separators; Three (3) Screens; Seven (7) Eddy Current Separators (ECS) located in Enclosures; Four (4) Wind Sifters (Air Classifiers) with Cyclones; Five (5) Polishers (Air Classifiers) with Cyclone; One (1) Air Vibe (Air Classifier) with Cyclone; One (1) Low Speed Shredder for Size Reduction of Clean Non-Ferrous Material;	TBD
Ninety nine (99) Material Transfer Points	TBD
Fines Processing Building – with All Equipment in Building Controlled by Dust Collector DC-01	TBD

The Source contains emission units which are sources of Particulate Matter (PM), Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), and Volatile Organic Material (VOM) generated from the shredding of recyclable materials and its associated control system, sorting, and handling of the shredded recyclable product. The recycled materials processed at the facility may contain components that are considered to be Hazardous Air Pollutants (HAPs), such as Hydrogen Chloride (HCl), Lead (Pb), and Manganese (Mn). PM and Metal HAPs are generated during the shredding and separation processes. VOM and Organic HAPs are generated during the shredding process and its associated control system.

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

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

<u>Pollutant</u>	PTE as limited by permit (tons/year)
Carbon Monoxide (CO)	15.02
Nitrogen Oxides (NO _x)	2.57
Particulate Matter (PM)	41.72
Particulate Matter less than 10 microns (PM ₁₀) in diameter	21.28
Particulate Matter less than 2.5 microns (PM _{2.5}) in diameter	15.06
Sulfur Dioxide (SO ₂)	0.09
Volatile Organic Material (VOM)	5.26
Combined Hazardous Air Pollutants (HAPs)	1.4143
Hydrogen Chloride (HCl)	0.77
Lead (Pb)	0.0417
Manganese (Mn)	0.0218

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:

No emission units were identified in the application as being exempt from the permitting requirements under 35 Ill. Adm. Code 201.146.

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 90% or more of the applicable major source thresholds 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 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 Titles I, III, and V of the federal Clean Air Act. The plant's potential emissions in the absence of limits established in the draft construction would be such that the plant would be considered a major source under Title V of the federal Clean Air Act and as a result the source may elect to apply for a Federally Enforceable State Operating Permit (FESOP) after construction and the performance testing required by the draft construction permit is complete. If the source elects to apply for a FESOP, it will not need to obtain a Clean Air Act Permit Program (CAAPP) permit for the plant, as would otherwise be required.

The draft construction permit proposes to allow operation of the equipment listed in Table 1 above for a period of twelve (12) months from the date of initial startup of any of the equipment listed in the construction permit in order to allow performance testing and the compilation of the results of such testing.

The draft construction permit proposes limits on the operation and annual emissions of the plant to below the major-source-thresholds of 250 tons for PM, PM₁₀, and PM_{2.5}, 50 tons for VOM, 10 tons for any individual HAP and 25 tons for combined HAPs. The potential emissions of other pollutants (e.g., CO, NO_x, and SO₂) from the plant are small enough that no restrictions are needed to avoid being a 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 (Board). These emission standards represent the basic requirements for sources in Illinois. The Board has specific standards for units emitting PM and PM₁₀ under 35 Ill. Adm. Code Part 212. The Hammermill Shredder System, Ferrous Material Separation System, Non-Ferrous Material Separation System, Outdoor Material Transfer Points, and Fines Processing System are subject to 35 Ill. Adm. Code Part 212 Subpart B (Visible Emissions), which limits the opacity of the PM emissions

from each unit to no more than 30%, and Subpart L (Particulate Matter Emissions from Process Emission Units), which sets mass emission limits based on the process weight rate of each emission unit. The Hammermill Shredder System, Ferrous Material Separation System, Non-Ferrous Material Separation System, Outdoor Material Transfer Points, and Fines Processing System are subject to 35 Ill. Adm. Code 212.324 (Process Emission Units in Certain Areas), which limits the emission into the atmosphere of PM₁₀ from any process emission unit to not exceed 68.7 mg/scm (0.03 gr/scf) during any one hour period. Furthermore, the source is subject to 35 Ill. Adm. Code Part 212 Subpart UU (Additional Control Measures), which requires a contingency measure plan to provide for additional reductions in fugitive PM₁₀ emissions between 15% and 25%. This contingency measure plan will be subject to review and approval by the Illinois EPA and USEPA. In addition, the contingency measure plan will require an implementation schedule that is also subject to review and approval by the Illinois EPA.

The Board also has specific standards for units emitting VOM from stationary sources located in the Chicago area under 35 Ill. Adm. Code Part 218. The Hammermill Shredder System is subject to 35 Ill. Adm. Code Part 218 Subpart G (Use of Organic Material), which limits the emissions of VOM from the use of liquid organic material to eight pounds per hour or requires an 85 percent reduction in uncontrolled VOM emissions, and 35 Ill. Adm. Code Part 218 Subpart TT (Other Emission Units), which requires that the Hammermill Shredder System be equipped with air pollution control equipment, such as the Rengerative Thermal Oxidier (RTO), that achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent.

During the analysis of the construction permit application, dispersion modeling of metal HAP emissions (including Lead and Manganese) was performed and reviewed. The analysis of the data from the dispersion modeling of the source's emissions revealed that the emissions from the source to the maximum off-site ambient air impact are not expected to exceed the primary and secondary National Ambient Air Quality Standards (NAAQS), specifically 40 CFR 50.16 for Lead (Pb). Furthermore, the analysis of the data from the dispersion modeling of Manganese (Mn) emissions and emissions of all other HAPs that relate to the expected emissions from the source to the maximum off-site ambient air impact do not exceed the Agency for Toxic Substances and Disease Registry (ATSDSR), and Minimal Risk Levels, hazardous air contaminant air quality standard in the Wisconsin Department of Natural Resources air toxics rule (Wisconsin Administrative Code, Chapter NR 445 – Control of Hazardous Pollutants), and an inhalation risk greater than 1 in 1,000,000 for carcinogenic substances with a unit risk factor established by the USEPA or the California Air Resources Board (CARB).

The application proposes that the plant will comply with applicable state and federal emission standards.

V. CONTENTS OF THE PERMIT

The 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 Hammermill Shredder System, Ferrous Material Separation System, Non-Ferrous Material Separation System, Outdoor Material Transfer Points, and Fines Processing System are subject to 35 Ill. Adm. Code Part 212 Subpart B, which limits the opacity of the PM emissions from each unit to no more than 30%, and 35 Ill. Adm. Code Part 212 Subpart L, which sets mass emission limits based on the process weight rate of each emission unit and limits the emission into the atmosphere of PM₁₀ from any process emission unit to not exceed 68.7 mg/scm (0.03 gr/scf) during any one hour period. The source is subject to 35 Ill. Adm. Code Part 212 Subpart UU (Additional Control Measures) which

requires the source to design a contingency measure plan to provide for additional reductions in fugitive PM₁₀ emissions between 15% and 25%. The Hammermill Shredder System is subject to 35 Ill. Adm. Code Part 218 Subpart G, which limits the emissions of VOM to no more than 8 pounds/hour or utilize air pollution control equipment to achieve an 85% reduction in VOM emissions, and 35 Ill. Adm. Code Part 218 Subpart TT, which requires that the Hammermill Shredder System be equipped with air pollution control equipment, such as the Rengerative Thermal Oxidier (RTO), that achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent. The conditions of this permit are intended to ensure that the source will comply with applicable emission standards.

The permit would also contain limitations and requirements to assure that this plant is constructed, tested, and operated as a non-major source. The permit would limit the operation and annual emissions of the plant to below the major-sourcethresholds of 250 tons for PM, PM₁₀, and PM_{2.5}, 50 tons for VOM, 10 tons for an individual HAP and 25 tons for combined HAPs. (Annual emissions of other pollutants from the plant are well below the major source thresholds for the applicability of Prevention of Significant Deterioration (PSD) and the Illinois' rules for Major Stationary Sources Construction and Modification).

The draft construction permit would also set limitations on the amount of scrap metal that may be received processed and shipped. The draft construction permit also sets limits on the times of operation and the number of hours that the plant may operate during the day and incorporates a voluntary plan for controlling the source's fugitive dust emissions. Furthermore, the draft construction permit will require that the air pollution control equipment, such as the RTO and the packed tower scrubber, be equipped with monitoring devices to insure that the air pollution control devices are operating and functioning properly. These limitations are consistent with the proposed actual operation of emission units for this plant.

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 this construction permit. 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 on the draft permit. Because substantial public interest has already been shown in this matter, the Illinois EPA will be holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.