Illinois Environmental Protection Agency
Bureau of Air, Permit Section
2520 West Iles Avenue
P.O. Box 19276
Springfield, IL 62794-9276

Project Summary
Proposed Federally Enforceable State Operating Permit (FESOP)
Radiac Abrasives Inc
Salem, Marion County, Illinois

Site Identification No.: 121045AAF
Application No.: 95090063

Schedule
Public Comment Period Begins: October 28, 2026
Public Comment Period Closes: November 30, 2026

Illinois EPA Contacts
Permit Analyst: Muhammad Huq
Community Relations Coordinator: Sarah Brubaker
217/786-0790
Sarah.Brubaker@illinois.gov

I. INTRODUCTION

Radiac Abrasives Inc has applied for a Federally Enforceable State Operating Permit (FESOP) for its facility located at 1015 South College Avenue in Salem. This facility requires an air pollution control operating 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 facility. 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

Radiac Abrasives Inc is an abrasive wheel manufacturing facility. The emission units at this facility that require an operating 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)
One (1) 0.4 mmBtu/hr Natural Gas Fired Oven (#4 (CO12-455))	1966
Ten (10) 0.5 mmBtu/hr Natural Gas Fired Ovens (#1 (CO10-452), 2 (CO11-453), 5 (CO15-468), 6 (CO14-467), and 10-15 (DO01-461, DO02-462, DO03-463, DO04-464, DO05-465, and D006-466))	Ovens #1, 2, and 6: 1966 Oven #5: August 1979 Ovens #10-15: September 1981
Four (5) 0.8 mmBtu/hr Natural Gas Fired Ovens (#17-19 (CO03-443/CO04-444, CO05-445/CO06-446 and CO07-447/CO08-448), 23 (CO01-439/CO02-440), and 26 (DO07-470/DO08-471))	Ovens #17-19: December 1986 Oven #23: June 1988 Oven #26: 2010
Two (2) 1.0 mmBtu/hr Natural Gas Fired Ovens (#3 (CO09-451) and 9 (CO13-456))	Oven #3: 1966 Oven #9: August 1979
One (1) 1.5 mmBtu/hr Natural Gas Fired Oven (#29 (520))	2010
One (1) 1.6 mmBtu/hr Natural Gas Fired Ovens (#28 (DO09-472/DO10-473/DO11-474/DO12-475))	2010
Nine (9) 3.0 mmBtu/hr Natural Gas Fired Kilns (#1 (FV01-401) and 11-18 (FV02-411, FV03-412, FV04-414, FV05-415, FV06-416, FV07-417, FV08-418, and FV09-419))	Kiln #1: 1966 Kiln #11 and 12: December 1986 (modified June 2015) Kiln #13: December 1986 Kiln #14 and 15: June 1988 Kiln #16: June 1988 (modified June 2015) Kiln #17: September 1994 (modified June 2015) Kiln #18: March 1997
Three (3) 4.0 mmBtu/hr Natural Gas Fired Kilns (#23 (FV11-424), 24 (FV12-425) and 26 (FV13-427))	2010
One (1) 6.0 mmBtu/hr Natural Gas Fired Kiln (#22 (FV10-423))	2010
One (1) 12.0 mmBtu/hr Natural Gas Fired Kiln (#27 (FV14-428))	2011
One (1) 19.0 mmBtu/hr Natural Gas Fired Kiln (#19 (FV15-420))	June 1998
One (1) Thermal Oxidizer (TO-1)	2001

These units are sources of emissions because Nitrogen Oxides (NO_x) are emitted to the atmosphere from the combustion of fuel in the ovens and kilns. NO_x is formed thermally by the combination of oxygen and nitrogen in the air and chemically bound nitrogen in the fuel at the temperatures at which fuel is burned. Thermal NO_x is formed during all common high temperature combustion processes. Furthermore, Volatile Organic Material (VOM) and Hazardous Air Pollutants (HAPs) are emitted to the atmosphere during the resin curing operations.

The following table lists annual emissions (tons) of pollutants emitted from this source, as reported in the last three Annual Emission Reports (AER) sent to the Illinois EPA:

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

Pollutant	**Actual Emissions 2023** (tons)	**Actual Emissions 2024** (tons)	**Actual Emissions 2025** (tons)	**PTE as limited by permit** (tons/year)
Carbon Monoxide (CO)	5.95	4.46	4.70	34.09
Nitrogen Oxides (NO_x)	6.32	5.49	5.59	40.58
Particulate Matter (PM)	1.25	0.62	0.65	3.52
Sulfur Dioxide (SO_2)	0.02	0.03	0.03	0.24
Volatile Organic Material (VOM)	46.68	34.74	35.57	11.22
Combined Hazardous Air Pollutants (HAPs)	15.80	10.62	10.43	8.99
Single HAP emitted in the greatest amount (Phenol)	10.80	7.46	6.74	8.99

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.

While the actual emissions from the last three years are higher than the PTE as limited by the proposed permit for VOM and HAPs, the facility has proposed changes to the raw materials that eliminates the use of Naphthalene by moving to walnut shells and inert inorganic materials as well as establish limitations on the throughput of phenolic resin to reduce their VOM and HAP emissions. In addition, as shown in Table 2 above, the margin of compliance between the potential emissions as limited in the draft FESOP and the applicable major source thresholds is more than 89% for VOM, 10% for single HAP, and 64% for combined HAPs which further minimizes the likelihood of the source exceeding the applicable major source thresholds.

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 FESOP are 90% or more of the applicable major source thresholds and the exempt units' PTE is 5% or more of the threshold) the Illinois EPA has established limits on such emission units in the draft FESOP 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

(FESOPs are federally enforceable, that is, the terms and conditions of the permits can be enforced by the United States Environmental Protection Agency (USEPA) under federal law, as well as 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.

The source may operate this facility under a FESOP because the actual emissions of the facility are below the levels at which the facility would be considered a major source under Title V of the federal Clean Air Act. However, in the absence of federally enforceable limitations, the facility's potential emissions would be such that the facility would be considered a major source. The permit acts to restrict the facility potential emissions so that it need not be considered a major source. As a result, the source does not need to obtain a Clean Air Act Permit Program (CAAPP) permit for the facility, as would otherwise be required.

The FESOP limits the operation and annual emissions of the facility to below the major-source-thresholds of 10 tons for an individual HAP and 25 tons for combined HAPs. The potential emissions of other pollutants (e.g., CO, NO_x, PM, and SO_2) from the facility 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. These emission standards represent the basic requirements for sources in Illinois. The ovens, kilns and thermal oxidizer are subject to 35 Ill. Adm. Code Part 212 Subpart B (Visible Emissions) and Subpart L (Particulate Matter Emissions from Process Emission Units) which requires emissions of particulate matter to be less than 30 percent opacity and restricts particulate matter emission in any one hour period from any of the process emission units. The ovens, kilns and thermal oxidizer are also subject to 35 Ill. Adm. Code Part 214 Subpart K (Process Emission Sources) which limits the emission of sulfur dioxide into the atmosphere from any process emission unit to less than 2000 ppm. In addition, the resin curing emissions associated with the ovens and kilns are subject to 35 Ill. Adm. Code Part 215 Subpart K (Use of Organic Material) which limits the discharge of VOM into the atmosphere to less than 3.6 kg/hour (8 lbs/hour).

The application shows that the facility is in compliance with applicable state and federal emission standards.

V. CONTENTS OF THE PERMIT

The permit that the Illinois EPA is proposing to issue would continue to identify the specific emission standards that apply to the emission units at the facility. As explained, the ovens, kilns and thermal oxidizer are subject to 35 Ill. Adm. Code Part 212 Subpart B (Visible Emissions) and Subpart L (Particulate Matter Emissions from Process Emission Units) which requires emissions of particulate matter to be less than 30 percent opacity and restricts particulate matter emission in any one hour period from any of the process emission units. The ovens, kilns and thermal oxidizer are also subject to 35 Ill. Adm. Code Part 214 Subpart K (Process Emission Sources) which limits the emission of sulfur dioxide into the atmosphere from any process emission unit to less than 2000 ppm. In addition, the resin curing emissions associated with the ovens and kilns are subject to 35 Ill. Adm. Code Part 215 Subpart K (Use of Organic Material) which limits the discharge of VOM into the atmosphere to less than 3.6 kg/hour (8 lbs/hour). 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 facility is operated as a non-major source. The permit would limit the operation and annual emissions of the facility to below the major-source-thresholds of 10 tons for an individual HAP and 25 tons for combined HAPs. (Annual emissions of other pollutants from the facility are well below the 100 ton major source threshold.)

The permit would also set limitations on the throughput of phenolic resin and the type of material that can be used as a pore forming material. These limitations are consistent with the historical operation of emission units at the facility.

The permit conditions would also continue to 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 facility is being operated within the limitations set by the permit and the facility'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.