

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
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Project Summary for an Application from
Forbo Adhesives LLC for Renewal of the
Federally Enforceable State Operating Permit (FESOP) for
Its Copolymer Emulsion Plant
Morris, Illinois

Site Identification No.: 063813AAF
Application No.: 73010338

Schedule

Public Comment Period Begins: October 14, 2009
Public Comment Period Closes: November 13, 2009

Illinois EPA Contacts

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I. INTRODUCTION

Forbo Adhesives LLC has applied for renewal of its Federally Enforceable State Operating Permit (FESOP) for their copolymer emulsion manufacturing plant. This plant requires an air pollution control operating permit because it is a source of emissions. The Illinois EPA has prepared a draft of the renewed permit that it would propose to issue for the plant. However, before renewing 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

Forbo Adhesives LLC produces emulsion polymers (Elvace) using a high pressure reaction using the primary raw materials of ethylene and vinyl acetate. After the reaction is complete the reactor is vented to a flare which destroys the unreacted ethylene by thermal decomposition. Other process vents (i.e., ethylene storage, etc.) are also tied to the flare. The finished product contains in the part per million range of unreacted vinyl acetate and the products vapor pressure is insignificant. The flare is required to destroy 95% of the ethylene, a volatile organic material (VOM), but flares will typically destroy 98% or more of the VOM. The other raw material is vinyl acetate, considered a hazardous air pollutant (HAP). Emissions of vinyl acetate are very low as it is almost all reacted.

The manufacturing operations are primarily a source of volatile organic material (VOM) emissions and hazardous air pollutant (HAP) emissions. HAP and VOM emissions are controlled by an air-assisted flare and a carbon adsorber system.

III. GENERAL DISCUSSION

Federally Enforceable State Operating Permits (FESOPs) are federally enforceable, that is, the terms and conditions of the permits can be enforced by 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 has been operating this plant under a FESOP because the actual emissions of the plant are below the levels at which the plant would be considered a major source under Title V of the federal Clean Air Act. However, in the absence of federally enforceable limitations, the plant's potential emissions would be such that the plant would be considered a major source. The permit acts to restrict the plant 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 plant, as would otherwise be required.

The FESOP limits the operation and annual emissions of the plant to below the major-source-thresholds of 100 tons for VOM, 10 tons for an individual HAP and 25 tons for combined HAPs.

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 board has standards for sources of Volatile Organic Material (VOM) and Hazardous Air Pollutants (HAP). The application shows that the plant is in compliance with applicable state and federal emission standards.

The principal air contaminants of concern is VOM and vinyl acetate (HAP) emitted through a high pressure reaction using the primary raw materials of ethylene and vinyl acetate. The facility has limited their throughput that will keep the VOM emissions below the major source threshold level of 100 tons per year for VOM, 25 tons of combined HAP, and 10 tons of single HAP.

Other emissions of Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Particulate Matter (PM), and Sulfur Dioxide (SO₂) are emitted; however, their levels will remain well below the major source threshold levels.

V. CONTENTS OF THE PERMIT

The renewed 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 plant.

The permit would also contain limitations and requirements to assure that this plant is operated as a non-major source. The permit would limit the operation and annual emissions of the plant to below the major-source-thresholds of 100 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 100 ton major source threshold.)

The permit would also set limitations on requirements to assure that this facility will be operated as a non-major source. The permit sets limitations on copolymer emulsion manufacturing plant emissions. These limitations are consistent with the historical operation and capacity of 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 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 renewal of its permit. The Illinois EPA is therefore proposing to renew 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.