

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
BUREAU OF AIR

September 1999

Responsiveness Summary  
to Questions and Comments on an  
Air Pollution Control  
Construction and Operating Permit for  
New Heights Recovery and Power, L.L.C.  
Ford Heights, Illinois

Cryogenic Crumb Rubber Processing Facility

Facility Identification No.: 031801AAE

Application No.: 99030102

Illinois EPA Hearing File No.: 260-99

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## **ILLINOIS EPA DECISION**

The Illinois Environmental Protection Agency (Illinois EPA) has issued a state construction and operating permit to New Heights Recovery & Power, L.L.C. (New Heights) to construct and operate a cryogenic crumb rubber facility in the Village of Ford Heights, Illinois. The facility must be constructed and operated in accordance applicable regulations and the conditions of the permit.

### **PERMIT PROCESS**

The Illinois EPA Bureau of Air processes applications for permits for sources of emissions to the atmosphere. An air permit application must address and demonstrate compliance with applicable air pollution control laws and regulations before a permit can be issued.

### **BACKGROUND ON THE FACILITY**

The site of the proposed cryogenic crumb rubber facility was permitted and developed by Chewton Glen Energy to produce crumb rubber and burn shredded tires to generate electricity. Before these facilities became fully operational and had completed the required emission testing to demonstrate compliance with applicable requirements, operation stopped due to the repeal of the "Retail Rate Law". This reduced the revenues for sale of electricity, forcing Chewton Glen into bankruptcy.

KTI, a waste management company, and the Chewton Glen bondholders have formed New Heights Recovery & Power, L.L.C. to take over the site. New Heights is proposing to construct a new cryogenic crumb rubber facility at the site, which is the subject of this document. Crumb rubber is a fine rubber powder. This permit does not include the existing conventional crumb rubber facility, or the existing tire-fired boiler at the site, which are the subject of separate permit applications.

### **CRYOGENIC CRUMB RUBBER FACILITY**

#### **Process**

The existing primary shredder at the site will be used to produce 12-inch tire "shreds" which will be sent to a secondary shredder to produce 2-inch tire "chips". These chips are fed

into the cryogenic crumb rubber lines. These lines use liquid nitrogen to freeze the tire chips so that they can easily be shredded into crumb rubber. The steel and fiber in the tire are separated from the crumb rubber product.

Some of the crumb rubber is further reduced in size by the two Fine Grind Cryogenic Crumb Rubber Processing Lines.

The crumb rubber product is stored in silos before being loaded into sacks or hopper trucks for transport.

#### **Air Pollution Control Equipment**

Process particulate emissions are controlled by two systems each with a cyclone followed by a fabric filter. The storage silos are controlled by a single filter system.

#### **PUBLIC HEARING AND COMMENT PERIOD**

The public comment period began May 16, 1999 with the publication of a notice in the Chicago Heights Star newspaper and continued through July 15, 1999. The public hearing was held on July 1, 1999 at 7:00 p.m. in the Cottage Grove Middle School auditorium to receive verbal comments and answer questions regarding the application and draft air permit.

#### **FINAL DECISION**

Upon review of comments received during the public comment period and final review of the application, the Illinois EPA has determined the application meet the standards for construction and operating permit issuance under State law. According, on September 22, 1999, the Illinois EPA issued the construction and operating permit for the cryogenic crumb rubber process. The permit as issued includes the following significant changes compared to the draft permit.

Condition 2b. Particulate matter emissions allowed from textile fiber loadout have been reduced as a result of a reassessment of this operation.

Condition 2d. A condition has been added to address the facility's status as a non-major source under the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21.

Condition 3. The requirements for Good Housekeeping Practice have been expanded to address unsafe conditions.

Condition 4. The requirements for control of dust from roadways have been expanded to address entrainment and off-site transport of spilled materials due to vehicular traffic.

Condition 5b. The main processing baghouses are now required to be equipped with instrumentation to measure pressure drop across the fabric filter.

Note. A note has been added to clarify that the permit does not authorize operation of the facility as a "pollution control facility", as defined in Section 3.32 of the Environmental Protection Act, which could be the case if waste materials other than tires were used as the feed stock for the cryogenic crumb rubber facility

#### QUESTIONS AND COMMENTS

**How will the baghouse be monitored since there are no provisions in the permit requiring monitoring devices?**

The vents from the baghouses will be monitored visually at least once each shift for the presence of emissions. This is a standard approach for baghouses used to control dust from handling and mechanical processing of material at manufacturing plants. In addition, the main processing baghouses will be equipped with gauges to measure pressure drop across the fabric filter. Pressure drop across a fabric filter is a measure of the obstruction of airflow by the filter, and can be used as an indicator that the fabric filter is operating effectively.

**Where will material collected by the baghouses be disposed of?**

The dust collected by baghouses is expected to be landfilled.

**How many tires will be on the property at any given time?**

Whole tires will be kept in the hauling trailers until they are taken to the primary shredder.

New Heights has stated that shredded tires prepared for use as fuel will be managed on a concrete pad outside the processing building that is approximately 100 by 200 feet in size. This limits the storage capacity to between 7,000 and 10,000 tons. Shredded tires are to be used as fuel for the boiler if it resumes operation.

**Are there any IEPA rules that govern how many tires may be stored on the site?**

No, although there are provisions (Illinois Environmental Protection Act Title XIV and 35 Ill. Adm. Code Part 848) addressing health, safety, environmental, and financial assurance issues associated with tire storage. These provisions do not limit the amount tires stored at a site. Instead, these provisions are intended to assure that appropriate measures are in place for the amount and form (e.g., whole or shredded) of waste tires stored at the site.

**What fire protection plans does the facility have?**

The entire site, including the tire storage area is securely fenced to prevent unauthorized access. The tire storage area is equipped with fire hydrants, connected to a plant fire water system that includes a 500,000 gallon water tank and redundant electrical and diesel powered pumps. The buildings include various features as required by fire codes to appropriately address fire risk including non-combustible construction, sprinklers and fire hose stations. In addition, the final crushers in the cryogenic crumb rubber facility include a fire detection and suppression system using the liquid nitrogen available at the site. The facility is also subject to routine inspection by the local fire protection district to identify and minimize fire hazards, including the hazards accompanying storage of waste tires. Fire prevention and safety will be one of the responsibilities of the facility's Safety Officer.

**Does the permit allow the facility to operate seven days a week?**

Yes. The permit allows the crumb rubber facility to operate around the clock. Continuous operation is common at many industrial facilities.

**Will the tire shredder used at this facility be the same one used for fuel production?**

Yes. The primary shredder for the facility, which reduces whole tires to approximately 12-inch-tire-shreds, is the existing shredder at the site, which would also be used to produce fuel for the boiler if it resumes operation.

**How will the company deal with fugitive emissions?**

Under normal operation there should be no fugitive emissions from the crumb rubber facility, as all fine materials would be handled mechanically in enclosed systems vented through baghouses. However, if fugitive emissions occur, routine inspections would detect the presence of any crumb rubber, textile fiber, or steel on the ground triggering repair of the system or its enclosure. The accumulated material will be swept up for disposal.

**What will the noise level at the border of the property be?**

The facility is required to meet 35 Ill. Adm. Code Part 900. These rules establish acceptable daytime and nighttime noise levels beyond the property line of the facility based upon land use.

**How does the Illinois EPA plan to ensure compliance with the tire storage regulations?**

Compliance with the tire storage regulations will be determined by on-site inspection on an annual basis. During the first year of operation, quarterly inspection will be conducted.

**The primary tire shredder will be a source of noise and dust.**

The primary shredder should not be a significant source of noise and dust. Water sprays are present to keep the shredder blades cool, which also controls any dust from mud or dirt on the tires. The noise level experienced by workers does not require hearing protection. Thus, the noise level outside the shredder building at the property line is expected to be negligible. Likewise it is not a dusty operation. In this regard, the primary shredder is a relative slow machine that "cuts" the tires into large shreds, and is unlike high-speed crusher processing aggregate materials.

**Why do all the storage silos exhaust through one baghouse?**

Storage silos handling similar materials are routinely controlled by a single system. This design provides the required air pollution control in the most economic manner. It also allows efficient maintenance of the system and disposal of the collected materials.

**Where will the textile fiber from the tire be disposed?**

The textile fiber is expected to be landfilled as a waste.

**What prevents the bags in the baghouse from breaking open?**

The filter bags are made of cloth of appropriate strength. The bags are automatically cleaned of dust by a pulse of air on the inside (clean side) of the bag to remove the surface accumulation of dust on the fabric. (The collected dust is mechanically conveyed from the bottom of the baghouse to a storage bin for disposal off-site.) The design of the exhaust system limits airflow to safe levels for the baghouse to prevent excessive pressure from breaking or dislocating the filter bags.

**Detailed inspections of the baghouse should be conducted more often than once per year.**

The permit establishes a minimum requirement for inspection of baghouses. More frequent inspections must be conducted if they are needed to assure effective operation of a baghouse.

**Is the facility located adjacent to any of the water wells operated by the Village of Ford Heights?**

There are no public water wells within the well setback requirements for the facility.

**Permit application should be both applicant and location specific.**

This permit application for a cryogenic crumb rubber facility is both applicant and location specific. It should be understood that manufacturing facilities are routinely sold, like other types of property, and

associated environmental permits are transferred to the new owner.

**The cryogenic crumb rubber facility should be considered an entirely separate and independent operation from the boiler for purposes of environmental permitting.**

The crumb rubber facility can be operated without the boiler and the application has not linked crumb rubber production to the tire-burning boiler. The boiler is being considered for a permit separately.

**Why is the company developing this facility when it is not sure of the market for crumb rubber?**

A market exists for crumb rubber as crumb rubber is being manufactured and sold by other plants. This facility is a business venture that hopes to compete successfully with existing producers of crumb rubber and to expand the existing market for crumb rubber by managing the quality and cost of its product.

**The Illinois EPA should encourage the use of crumb rubber as an asphalt paving additive to help maintain roads in Illinois.**

The use of crumb rubber is beyond the scope of the Agency's considerations on this permit. However, as a general matter, the Agency supports practices that conserve energy and reduce the use of natural resources.

**FOR ADDITIONAL INFORMATION**

Questions about the public hearing and permit decision should be directed as follows:

Public Hearing Procedures and Exhibits

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Responsiveness Summary (question on or extra copies)

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SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
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