

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

JULY 2007

Responsiveness Summary for
Public Questions and Comments on the
Construction Permit Application from
Ford Heights Ethanol, LLC

Site Identification No.: 031072AAB
Application No.: 06060052

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INTRODUCTION

Ford Heights Ethanol, LLC (Ford Heights Ethanol) has applied for an air pollution control permit to build a dry mill fuel ethanol production plant at the intersection of 17th Street and Ellis Avenue in Ford Heights. After review of the application, the Illinois Environmental Protection Agency (Illinois EPA) prepared a draft construction permit and held a comment period, with a public hearing, to receive comments on the proposed issuance of the requested permit.

Upon review of comments received during the public comment period and final review of the application, the Illinois EPA has determined that the application meets the standards for issuance of a construction permit. Accordingly, on July 31, 2007, the Illinois EPA issued a permit to Ford Heights Ethanol to construct the proposed plant. The plant must be constructed and operated in accordance with applicable regulations and the terms and conditions of the issued permit.

DESCRIPTION OF THE PROPOSED PROJECT

Ford Heights Ethanol has proposed to construct a plant to produce ethanol from corn. The plant would be designed to have a nominal capacity of 60 million gallons per year, with the ability to produce up to 63 million gallons per year of denatured ethanol. The denatured ethanol produced from the plant would be used in motor vehicle fuel. The plant would produce ethanol by batch fermentation of ground corn, followed by processing to separate out and purify the ethanol. The stillage material remaining after the ethanol production process would be dried and sold as animal feed. Natural gas will be used as the fuel in the feed dryers and in the boilers that provide the steam for the ethanol production process.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. An air pollution control permit application must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial review of the application submitted by Ford Heights Ethanol, the Illinois EPA Bureau of Air made a preliminary determination that the project met the standards for issuance of a construction permit and prepared a draft permit for public review and comment.

The public comment period began on March 4, 2007, with the publication of a notice in the Chicago Heights Star. When a public hearing was scheduled on the proposed project, additional notices were published in this paper on April 26, May 3, and May 10, 2007.

A public hearing was held on June 12, 2007 at the Cottage Grove Middle School, 800 East 14th Street in Ford Heights to receive oral comments and answer questions regarding the application and draft air permit. The comment period closed on June 26, 2007.

AVAILABILITY OF DOCUMENTS

Copies of the issued permit and this Responsiveness Summary are available through the following means:

1. To obtain a printed copy of the documents by mail and free of charge, contact the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
217-782-7027 Desk Line
1-888-372-1996 Toll Free Environmental Helpline
217-782-9143 TDD
217-524-5023 Facsimile
brad.frost@illinois.gov

2. View the documents at one of the following repositories:

Illinois EPA – Des Plaines
Regional Office
9511 West Harrison
Des Plaines, Illinois 60016
847/294-4000

Illinois EPA
Bureau of Air
1021 North Grand Avenue, East
Springfield, Illinois 62794
217/782-7027

3. Electronic copies are available by accessing the World Wide Web at www.epa.gov/region5/air/permits/ilonline.htm (look under All Permit Records (sorted by name), State Construction Permit, New).

COMMENTS AND QUESTIONS WITH RESPONSES BY THE ILLINOIS EPA

General Comments

1. What is an internal floating roof storage tank?

An internal floating roof tank is a type of tank used for storing large amounts of volatile liquids, like gasoline, to prevent evaporation and loss of material to the atmosphere. An internal floating roof storage tank looks like an ordinary, large, above-ground, cylindrical petroleum product tank with a permanent fixed roof on the top of the tank. However, an internal floating roof tank also has a circular “floating roof” or deck inside the tank, which cannot be seen from the outside. This deck rises and falls with the stored liquid and either floats directly on the liquid surface or rests on pontoons several inches above the liquid surface so as to prevent direct exposure and evaporation of the stored liquid into the atmosphere.

Emissions of stored materials do occur from an internal floating roof tank as the tank is emptied and the liquid level, and thus the floating roof, are lowered since the flexible seal between the edge of the deck and the exterior wall of the tank lets a small amount of material cling to the tank wall, which then evaporates into the enclosed air space between the floating roof and the fixed roof of the tank. Some emissions also occur from leakage at the seals and other fittings during other periods. However, an internal floating roof tank greatly reduces emissions from storage of a volatile liquid as compared to storage in a fixed roof tank. Internal floating roof tanks will be used at the proposed plant to minimize emissions of volatile organic material (VOM) from the storage of denaturant and product ethanol.

2. In the south suburbs when it gets rainy or cold, sources are known for opening up vents and releasing excess fumes because of the weather. Who is going to be making sure that this does not happen at the proposed plant?

This comment appears to address releases of steam or water vapor, not releases of pollutants. Steam or water vapor is routinely discharged from steam vents and cooling towers at industrial facilities. These releases are more noticeable when it is cold or raining because the steam or evaporated water being released more readily condenses in the air forming very fine droplets of water that look like billowy clouds. These “clouds” then move away from the point of release, with the distance that is traveled determined by the wind speed and weather conditions. Like natural clouds, the observed color of these water clouds depends on the amount of sunlight and their position relative to the sun, so they can appear very light to very dark. What distinguishes a water cloud from releases of fumes is the way in which they disappear from sight. After traveling for a distance, a water cloud either suddenly disappears or becomes wispy, as the water droplets evaporate. Fumes gradually fade away from the point of release, as the fumes mix with and are diluted in the atmosphere.

The situation described in this comment is clearly not related to the liquid storage tanks at existing plants. Tanks are not “operated” in the same sense as most other emission units. Other than inspections, periodic painting, and maintenance of fittings, all that occurs with a tank is that material is added to or removed from the tank. This does not result in visible emissions, much less result in emissions whose visibility would vary depending on the weather.

3. Did the Illinois EPA look at whether the site was zoned for an ethanol plant and whether the proposed plant received local siting approval?

The Illinois EPA did not review the proposed project against zoning requirements. This is because land use ordinances are adopted and administered by local governmental authorities, not the Illinois EPA. In this case, the Village of Ford Heights is responsible for land use and zoning decisions related to the proposed plant, as the plant would be located in Ford Heights. At the public hearing, Ford

Heights Ethanol stated that the location that it has selected for the proposed plant is appropriately zoned to allow development of a manufacturing facility, like a fuel ethanol plant. This was confirmed by representatives of the Village of Ford Heights. Assuming for purposes of discussion that this were not the case, the issuance of a construction permit for the plant by the Illinois EPA would not overrule local zoning requirements and would not allow the development of the plant to go forward in violation of such requirements.

The Illinois EPA also did not consider “siting approval” for the proposed plant. This is because the proposed plant is not a pollution control facility as defined by Illinois’ Environmental Protection Act. Rather, the plant would be a manufacturing facility, which would purchase corn for processing into ethanol and animal feed. Accordingly, the location selected by Ford Heights Ethanol for the proposed plant is not subject to “special” siting approval pursuant to Section 39.2 of the Environmental Protection Act. If the proposed plant were a pollution control facility, the Illinois EPA would have confirmed that the local siting approval required under state law had been obtained. This is because local siting approval is a prerequisite for the Illinois EPA to process an application for a construction or development permit for a proposed new pollution control facility. Even then, the Illinois EPA would have only confirmed that siting approval had been given by the appropriate local governmental authority, as the review and approval of siting is a responsibility of the local government in whose jurisdiction a new pollution control facility is proposed.

The fact that the Illinois EPA, or for that matter, USEPA, does not directly consider land use as part of the review of an application for an air pollution control construction permit for a proposed manufacturing facility does not mean that the facility can be located “anywhere.” It only means that direct decisions about land use and the proposed locations of proposed manufacturing facilities, as well as other proposed facilities, are the responsibility of other governmental authorities.

4. A fuel other than natural gas should be considered for the proposed plant. As it is, the proposed plant will use approximately one billion cubic feet of natural gas per year. Last winter, there were tremendous spikes in the price of natural gas and the pipelines that deliver natural gas to Illinois have limited capacity. The proposed plant will further increase the price of natural gas. Maybe the tire burner near the plant could provide the energy for the proposed plant.

The Illinois EPA does not have the authority to mandate that Ford Heights Ethanol consider use of a fuel other than natural gas for the proposed plant. This is especially true as natural gas is a commercially available fuel that is commonly recognized as a low emitting fuel, with minimal emissions of sulfur dioxide and particulate matter.

In addition, new fuel ethanol plants currently being developed in Illinois and the Midwest are consistently selecting natural gas as their fuel. The use of a fuel other

than natural gas by this proposed plant would be unlikely to have any measurable affect on the overall cost of natural gas for consumers. Considered from a broader perspective, even if cost would increase, one should also consider the extent to which use of ethanol acts to moderate increases in the cost of gasoline for consumers. In this regard, costs of all fossil fuels, i.e., natural gas, crude oil (gasoline and diesel fuel) and coal are increasing due to factors that are national and international in their scale. This is one reason why state and federal governments are encouraging petroleum-based gasoline to be blended with ethanol, which is produced from corn, a renewable resource.

The proposed plant is being developed to operate independently of Geneva Energy, the existing waste tire fueled power plant that is located adjacent to the proposed plant. The proposed plant will be constructed with natural gas fired boilers with sufficient capacity to meet its steam needs. This is clearly necessary from an operational viewpoint as Geneva Energy has experienced extended outages due to failure of its steam turbine generator. Most recently, the existing power plant has not operated since January 2007, when a blade in the turbine failed causing severe damage to the turbine. The proposed ethanol plant is also being developed by a totally different company, i.e., Ford Heights Ethanol rather than Geneva Energy. As a general matter, the Illinois EPA does not have the authority to mandate that these two companies enter into negotiations for an agreement whereby Geneva Energy would agree to provide all or some of the steam required by Ford Heights Ethanol. In the current circumstances, this would be especially improper. This is because any such agreement would certainly complicate the development and financing of the proposed ethanol plant, as the ethanol plant and the existing power plant would be functionally linked, which could lead to outages of the ethanol plant. Moreover, Ford Heights Ethanol and Geneva Energy can voluntarily enter into a traditional steam supply agreement at a later date, after the ethanol plant has begun operation and both plants have demonstrated the ability to operate reliably. As related to the emissions of CO₂ from the ethanol plant, such an agreement would reduce overall CO₂ emissions as the usage of natural gas by the ethanol plant would be greatly reduced. Geneva Energy would operate as a more energy-efficient “cogeneration” plant, producing both electricity and process steam.

Odors

5. I am concerned about the potential for odors from the proposed plant because the plant would be so close to homes, schools, and other public facilities in Ford Heights. Odors from the plant would have the potential to interfere with people’s lives and their enjoyment of their property.

The emissions from the proposed plant will be well controlled using emission control equipment that is now standard at new fuel ethanol plants. This equipment includes an oxidizer or combustion-type control for the principle sources of odors at the plant, i.e., the feed dryers, fermentation units and distillation units. As the fermentation units will be controlled with an afterburner, rather than with a

scrubber, the control of odorous emissions should be better than at many other new ethanol plants. These emission units must also be equipped with stacks that are high enough above structures to prevent downwash and enable good dispersion of emissions.

If there are nuisance odors from the plant, the Illinois EPA would take action to ensure that the plant takes appropriate steps to eliminate such odors. The construction permit does not excuse Ford Heights Ethanol from the obligation to undertake further actions to control emissions if needed to eliminate a public nuisance due to odors. If a problem would occur, the Illinois EPA would review the adequacy of the plant's proposed response to the problem, including any additional equipment that the plant would install, to confirm that the proposed response has been developed to adequately and appropriately respond to the problem.

6. The permit should require Ford Heights Ethanol to develop an odor management plan for the plant that identifies the potential sources of odors at the plant and the technologies and operating practices that will be used to minimize the release of odors. The Illinois EPA has the authority and responsibility to include conditions in the permit that will address odors from this plant. By selecting a location near homes, schools and other public facilities, and businesses, Ford Heights Ethanol is making itself subject to the most stringent requirements related to odors, as those requirements will effectively apply at the property line of the plant. Ford Heights Ethanol will not be able to take advantage of separation or distance as is possible when a plant is located in a rural area.

The potential sources of odorous emissions from an ethanol plant are well recognized and are addressed by the emission control systems that would be used at this proposed plant. The permit for the proposed plant also includes appropriate conditions to both directly and indirectly address potential odorous emissions from the plant, as did the draft permit prepared for the plant. Accordingly, a separate Odor Management Plan is not needed to address odorous emissions.

In particular, the principle sources of odorous emissions at an ethanol plant are the feed dryers, fermentation operations and distillation operations. As already discussed, these operations at the proposed plant will all be controlled with natural gas-fired combustion-type control systems, either afterburners or in the case of the feed dryers, with ecoDry dryers manufactured by Swiss Combi. (In ecoDryers, the exhaust from the dryer is used as combustion air for the dryer furnace, which results in the dryer serving as both a dryer and an afterburner.) As combustion-type control systems will be present for the feed dryers, the control of emissions at the proposed plant will be similar to that at other new ethanol plants, since combustion-type control is now the norm for feed dryers at new ethanol plants. Combustion control with an afterburner will also be used for distillation, as often occurs at new ethanol plants. Most significantly, an afterburner will also be used at the proposed plant to control emissions from fermentation. This is expected to provide more effective control of emissions from fermentation at the plant than scrubbing, as is more typically used at other new ethanol plants being developed in

Illinois. As these control systems provide very effective control of emissions of volatile organic material (VOM), they also control emissions of odorous compounds, which are also organic in nature and destroyed by combustion. As compared to scrubbing, combustion is preferable for the control of the mix of organic compounds present in the exhaust from the principle emissions units at an ethanol plant as combustion does not rely on the more complex and potentially more sensitive physical and chemical mechanisms needed for effective scrubbing. The efficiency of combustion-type control systems can also be readily enhanced, if needed, by raising the operating temperature in the combustion chamber of the system.

The permit for the plant contains a variety of conditions that address the proper operation of the various emission control systems at the plant that will serve to control odorous emissions, accompanied by conditions for related emission testing, monitoring and recordkeeping to confirm proper installation, operation and maintenance of these systems. To further minimize the potential for any odor nuisance from the plant, the permit also requires stacks for principal emission units to be designed in accordance with good engineering practices to prevent building downwash from interfering with good dispersion (Condition 1.4(d)). The permit also explicitly states that it does not excuse Ford Heights Ethanol from the legal obligation to undertake further actions at the plant as may be needed to eliminate air pollution, including nuisance due to odors, such as altering process conditions in units, using alternative scrubbants, raising the height of stacks, or installing backup control systems (Condition 1.9(b)).

7. The cost of developing an Odor Action Plan for another proposed ethanol plant, First United Ethanol in Camilla, Georgia, was identified as \$1,500. This expense is more than justified in light of the potential benefits and avoided costs.

Given the circumstances discussed above, no real benefits should be anticipated from the preparation of a separate Odor Plan as part of the design of the plant. This would be especially true if the cost of preparing such a plan was only \$1,500. If the emission control systems selected for the plant are properly operated and maintained, odors from the plant should be effectively controlled. If this is not the case, the situation will be one that would not have been prevented by preparation of an odor plan for the plant.

8. Ford Heights Ethanol should be required to maintain records for all odor complaints that it receives. If a complaint has merit, Ford Heights Ethanol should take appropriate corrective action as soon as practicable. At a minimum, these records should include the date and time of complaints, any circumstances at the plant that may have led to the complaint, and any corrective action measures.

The issued permit requires Ford Heights Ethanol to keep records of inquiries and complaints that it receives from the public about emissions and odor, as requested by this comment. This will facilitate consistency in the handling of such inquiries

and complaints by Ford Heights Ethanol, as well as enabling the Illinois EPA to review the actions of Ford Heights Ethanol when dealing with such matters. In this regard, the Illinois EPA would encourage the public to directly contact the plant with inquiries about emissions or odors. If odors are due to a malfunction or upset, Ford Heights Ethanol may be able to provide an immediate explanation of what has happened. A call to the plant can also allow personnel to initiate their investigation during the period when odors are being experienced, rather than attempting a more challenging investigation several days after the event.

At the same time, if a member of the public is bothered by odors from the plant, he or she should inform the Illinois EPA. It is important that the Illinois EPA be informed of problem odors so that it can investigate to determine the cause of the problem, review the actions being taken by the plant, and develop an appropriate response by the Illinois EPA. Complaints can be made by telephone, letter or e-mail. The telephone number of the local Regional Office of the Illinois EPA in Des Plaines is 847-294-4000. The Internet address of the Illinois EPA for submitting a complaint is: <http://www.epa.state.il.us/pollution-complaint/>.

Ford Heights Ethanol is already obligated by law and rule to take actions to prevent air pollution, including nuisance to odor. The permit also requires Ford Heights Ethanol to operate and maintain emission units in accordance with good air pollution control practice to minimize emissions. It is not appropriate or necessary for the permit to further state that Ford Heights Ethanol must take appropriate corrective action as soon as practicable if an odor complaint has merit.

9. The permit should require that Ford Heights Ethanol designate a contact person who would be available around-the-clock to receive and handle odor complaints.

It is not reasonable, necessary or beneficial for the permit to require that Ford Heights Ethanol designate a specific contact person to handle odor complaints, as requested by this comment. Odor complaints should be handled by the manager in charge (the person who is physically at the plant and in charge of operation of the plant at the time that a complaint is received) or such other person then at the plant that the manager in charge designates. This will enable direct and immediate action in response to an odor complaint if such action is warranted and feasible. Proper operation of the plant as related to odor control and related communication with the public are the responsibility of all the managers that run the plant and the permit should not establish requirements that would be contrary to this principle.

Public Safety

10. I am concerned about the safety of the public because the proposed plant will have large storage tanks containing ethanol and people will live near the plant. What kind of safety provisions would be in place in the event of a fire?

A variety of practices, programs and regulations, which are outside the domain of Illinois EPA and environmental permitting, specifically address the safety of the ethanol storage tanks. First, the design and engineering of the tanks is addressed by standard design codes. Second, the Office of the Illinois State Fire Marshal regulates the construction of large, liquid storage tanks. Ford Heights Ethanol or the construction contractor must submit the plans for the tanks for approval by the State Fire Marshal prior to beginning construction, for review against regulations adopted and administered by the State Fire Marshal. The plans for the tanks will also likely be subject to approval by the local Fire Marshal. Prior to being put into service, the storage tanks and spill containment berm must also be inspected and approved by the State Fire Marshal. Lastly, fire protection and safety is addressed by the local fire department and by the insurance company that will provide coverage for the plant. For example, the plant must be designed with a fire water system and sprinklers and other systems to automatically activate in response to a fire. The plant must maintain a reserve supply of water for the sprinklers and hydrants. An adequate supply of fire fighting foam must also usually be kept at the plant, as is important for fighting certain types of fires. An emergency fire water pump is required so that the plant water system can operate during a power outage. These measures contribute to the good fire safety record of ethanol plants.

11. The fire department in Ford Heights has mostly run on a volunteer basis. Is Ford Heights Ethanol going to build a new fire station and hire professional firefighters? Given the amount of ethanol that would be stored at the plant, a permanent fire station is needed.

Questions about construction of a new fire station in Ford Heights are appropriately directed to the Village of Ford Heights. In this regard, a representative of the Mayor's office indicated that the Village would be building a new fire station. Whether this station or professional firefighters are needed for the proposed plant is a matter of personal opinion. As already explained, the plant will be developed with a variety of features to prevent fires and to allow any fires to be contained and safely extinguished. Many industrial facilities, including many of the new ethanol plants being proposed in Illinois, are located in rural communities that have volunteer fire departments and rely on cooperation with departments in neighboring communities.

12. Is there an evacuation plan in place in the event of a fire or other catastrophic event?

Ford Heights Ethanol has indicated that an evacuation plan has not yet been prepared. Such a plan would be developed as part of the emergency response procedures that would be developed for the plant working with local officials if such a plan were determined to be needed after review of the operations at the plant.

13. Ford Heights Ethanol should be required to develop a Risk Management Plan that is consistent with the plant's Process Safety Management Program for Chemical Accident Release Prevention and that conforms with Program Level 3 requirements for such plans. The cost to develop such a plan will be minimal.

Ford Heights Ethanol should not be required as a condition of the construction permit for the plant to develop a Risk Management Plan that goes beyond the requirements of the USEPA rules that govern such plans (Chemical Accident Prevention Provisions, 40 CFR Part 68). This is because this would not address the underlying concern by the public about fire and the safety of the plant, would potentially be outside the statutory authority of the Illinois EPA, and would certainly be beyond the expertise of the Illinois EPA. Risk Management Plans pursuant to 40 CFR Part 68 address certain regulated chemicals that have been determined to be extremely hazardous. Ethanol is not one of the regulated chemicals, so certain elements of 40 CFR Part 68 would not apply to storage and handling of ethanol. Also, Risk Managements Plans in Illinois are currently still handled by USEPA. The Illinois EPA cannot require USEPA to address the proposed plant with a level of planning that is higher than specified by rule.

With respect to those particular chemicals regulated by 40 CFR Part 68, Ford Heights Ethanol will have to comply with all applicable requirements of 40 CFR Part 68 if such chemicals are present at the plant in more than threshold quantities. Ford Heights Ethanol will have to complete an appropriate analysis of the process activities at the plant that involve those chemicals and prepare a Risk Management Plan in accordance with 40 CFR Part 68. If circumstances change at the plant or an incident occurs, this analysis and/or plan must be reviewed and revised, if necessary.

As other, non-regulated chemicals will be present at the plant, such as ethanol, Ford Heights Ethanol should be expected to engage in planning activities related to the handling of those chemicals in a manner generally consistent with 40 CFR Part 68, Subparts D and E. However, additional, separate Risk Management Plan(s) should not be needed to accomplish this since USEPA developed 40 CFR Part 68 building upon existing standards for safety and industrial safety codes. To the extent that further planning is needed, it is more appropriately directed and supervised by an authority whose expertise is in such planning, rather than by the Illinois EPA.

14. Are the roads adequate to support the amount of truck traffic coming in and out of the plant? Is the traffic pattern safe for the residents of Ford Heights?

Like the trucks off of Illinois Route 394 that currently serve industrial facilities in the area, truck traffic for the proposed plant would be on designated truck routes in the Village of Ford Heights, i.e., US Route 30 and Cottage Grove Avenue. Trucks serving the plant would not travel on other streets in the Village. The amount of truck traffic on Route 30 would not increase significantly compared to the volume of truck traffic currently carried by Route 30 based on data compiled by the Illinois Department of Transportation. Even if one assumes that all materials carried to and from the plant would be transported by truck, without any material handled by rail, and that all trucks would travel through Ford Heights, rather than traveling to the plant from the west or south, the truck traffic on Route 30 would only increase by 5 percent. The overall vehicle traffic would increase by less than 1 percent.

Emissions

15. The permit anticipates that excess emissions may occur from the plant during periods of startup, shut down, malfunction or repairs. However, the permit does not impose limits on the amount of emissions or the duration of these periods.

The permit appropriately addresses periods of startup, shutdown, malfunction and repairs of emission units and control devices. In particular, the permit sets limits on the short-term and annual emissions of the various units at the plant that address all emissions from such units. The permit does not authorize additional or excess emissions during periods of startup, shut down, malfunction or repairs. As observed by this comment, the permit contemplates that such events, notably malfunctions and accompanying repairs, may occur and includes appropriate conditions to address such periods. The permit requires proper operation of process and control equipment to minimize emissions at all times, including periods of startup, shutdown and malfunction. It also requires detailed monitoring and recordkeeping to track equipment operation. It also includes reporting requirements so that the Illinois EPA would be promptly notified if excess emissions were to occur. These requirements have been included in the permit based on the Illinois EPA's experience with existing ethanol plants that shows that such periods can be of concern for ethanol plants, especially during the initial shakedown of a new plant.

16. The permit does not require the recalculation of annual emissions attributable to excess emissions that occur during these periods. There is no credible enforceability of annual emission limits or determination of potential prevention of significant deterioration (PSD) or new source review (NSR) major source applicability. Because emissions during startup, shutdown, malfunction and repair are not limited, the annual emission limits set by the draft permit are practicably unenforceable.

The permit does require "recalculation" of actual emissions and recordkeeping to account for additional emissions that may occur during atypical operation of emission units, as well as deviations and excess emissions. For example, refer to Condition 2.3.9(d), (e), (f), and (g)(ii). For units and pollutants for which continuous emissions monitoring is not conducted, emissions are to be calculated based on operating data and appropriate emission factors. This requires that emission factors appropriately represent the mode of operation of an emission unit. As emission of particular pollutants may be different during atypical operation and deviations and would certainly be different during any period when a unit operated with excess emissions, "standard" emission factors could not be used for such periods. Instead, separate emission calculations with appropriate emission factors would have to be used for such periods.

The recordkeeping provisions of the permit are accompanied by provisions requiring deviation reports and quarterly compliance reports summarizing all deviations and emissions estimates of the impact of such deviations.

17. The draft permit would not limit the duration of deviation events nor place quantitative limits on deviations that would trigger production reductions or stoppages.

The provisions requested by this comment would implicitly allow some level of additional or excess emissions from deviations. As discussed above, the permit does not allow additional or excess emissions. The Illinois EPA also does not believe that the underlying intent of this comment was to suggest that the permit should allow additional or excess emissions.

18. The permit should require compliance with annual emission limits be determined on a 12-month rolling basis to address any excess emissions during startup, shutdown, malfunction or any other deviation.

The permit generally requires compliance with annual emission limits, as well as annual production limits, to be determined based on a running total of 12 months of data, as requested by this comment. (Refer to Condition 1.1(e).)

19. More stringent emission limits should be set for certain units at the proposed plant. This is because the limits for similar units in construction permits for other proposed fuel ethanol plants which have the same capacity as the proposed plant, 63 million gallons per year and have similar processes and control devices, are lower for some pollutants. These other plants are Emerald Ethanol in Streator and Center Ethanol in Sauget.

The Illinois EPA has reviewed the differences in the permitted emissions of certain emission units at different proposed ethanol plants as identified by this comment. As a result of this review and subsequent discussion with Ford Heights Ethanol, the permitted emissions of particulate matter from the grain milling operations at the proposed plant are lower than would have been allowed by the draft permit. The other differences in permitted emissions did not warrant changes to the issued permit as they do not represent significant differences in emissions, are a result of developments in the Illinois EPA's permitting of ethanol plants or are otherwise explainable. While the capacity of these other ethanol plants may be the same, there are differences in the design and equipment planned for the plants. Even for the Emerald Ethanol plant and the proposed plant, which are both Katzen-designs, there are differences in the plans for the two plants. It should also be noted that the total permitted annual emissions of VOM from the proposed plant, as is relevant for odorous emissions, are lower than those of the other two plants, 65.46 tons, compared to 68.29 and 75.10 tons. Finally, actual annual emissions of all three of these proposed plants should be expected to be substantially lower than their permitted emissions

In particular, the feed dryers at the proposed plant should not be compared to those at Center Ethanol given the different type of drying system. While the Emerald Ethanol plant and the proposed plant are both similar Katzen plants with similar dryers, Emerald Ethanol set the design operating specifications for its feed dryers to

achieve lower emissions for nitrogen oxides (NOx). This resulted in Emerald Ethanol having permitted emissions of VOM from the feed dryers that are higher than those of the proposed plant. As compared to the feed dryers at the proposed plant, annual NOx emissions are 8.31 tons lower but VOM emissions are 6.44 tons higher. This exchange is reasonable given the interest in lower VOM emissions. The difference in CO emissions is an artifact of this exchange and is not significant.

The differences in the permitted SO₂ emissions from mash preparation at Emerald Ethanol and the proposed plant are due to a change in permitting practice by the Illinois EPA. For the proposed plant, negligible emissions of SO₂ have been more appropriately set at a level of 0.1 lb/hour, rather than 0.01 lb/hr. Both rates are small numbers and the difference does not represent any underlying difference in actual SO₂ emissions.

For ethanol loadout, the differences in the permitted annual VOM emissions for Emerald Ethanol and in the draft permit for the proposed plant are due to differences in the emissions calculation for loadout by rail. The calculations for Emerald Ethanol were based on loadout of only 36 million gallons of ethanol per year by rail, with railcars that did not handle gasoline as their previous cargo. The calculations for Ford Heights Ethanol were conservatively based on loadout of 60 million gallons of ethanol per year by rail, with railcars that handled gasoline as their previous cargo. However, these differences are not relevant for the issued permit for Ford Heights Ethanol because of developments in the Illinois EPA's permitting practices for ethanol loadout since the draft permit for the plant was prepared. Construction permits now being issued by the Illinois EPA for ethanol plants account for losses of VOM by the vapor collection systems used for both truck and rail loadout of ethanol, rather than assuming 100 percent capture efficiency. This consideration results in permitted VOM emissions from loadout of ethanol at the proposed plant that are higher by several tons than the levels in the permit for Emerald Ethanol and in the draft permit for the proposed plant. Similar refinements will be made to the permitted VOM emissions of the Emerald Ethanol plant when an operating permit for the plant is processed.

The grain handling operations at Center Ethanol and the proposed plant are generally similar. The permitted annual emissions of grain handling at the proposed plant are higher as they are very conservatively based on continuous operation. The permitted annual emissions of Center Ethanol were less conservatively calculated, based on operation for only 4380 hours per year (average 12 hours per day). The permitted emissions have not been adjusted for this difference in calculations since it does not reflect an underlying difference in the level of emission control that is potential achieved. Like Ford Heights Ethanol, developers of new ethanol plants commonly calculate and are permitted for PM emissions from grain handling based on continuous operation. This responds to possible concerns about the potential emissions of a plant, as raised in another comment. Finally, in actual practice, grain handling at both plants should be expected to operate less than 4380 hours each year.

Following further review of the emissions calculations for grain milling in response to this comment, the permitted annual emission of PM allowed by the issued permit are about 7.5 tons lower than would have been allowed by the draft permit. The grain milling operations at Center Ethanol and the proposed plants are generally similar. The higher permitted emissions that would have been allowed by the draft permit for the proposed plant were due to a difference in the performance guarantee provided by the supplier of the fabric filter or baghouse for this operation as compared to the guarantees provided for the equipment supplier for Center Ethanol. In actual practice, this baghouse should comply with the lower emission rate guaranteed for the baghouse at Center Ethanol. Accordingly, following further investigation by Ford Heights Ethanol, the permitted emissions from grain milling in the issued permit for the proposed plant are lower, reflecting the emission rate guarantee obtained by Center Ethanol for the baghouse for grain milling.

20. The carbon dioxide (CO₂) emitted from the plant would not be controlled. Emissions of CO₂ are important because of global warming. The cost of controlling CO₂ emissions should be considered.

Emissions of CO₂ are important as they are the principle cause of global warming. However, this concern cannot be directly addressed during the permitting of the proposed plant. First, CO₂ is not yet a regulated pollutant in the State of Illinois. More generally however, the cost of controlling CO₂ emissions from the plant would be such that, even if it were technically feasible to control CO₂ emissions from the plant, the plant would not be economically viable if such control were required. In the United States, it is all but certain that the challenge of global warming will require a comprehensive regulatory approach, by Congress or a broad coalition of states, and the appropriate approach is presently the subject of political debate. Illinois' Climate Change Advisory Group is working to assure that Illinois is a leader in these efforts. However, until comprehensive approaches are put into place by the appropriate legislative authorities, attempts at addressing individual action on global warming through current environmental permitting programs would be capricious. This is because the control of CO₂ emissions from industrial facilities, like the proposed plant, will necessitate developments in process technology and adoption of regulatory systems that equitably distribute the costs for control of CO₂ emissions. In the absence of such developments, the costs for meaningful control of CO₂ emissions are such that a new source that would be subjected to costs of such a magnitude that it could not compete economically with existing sources that were not subject to such costs. In this respect, permitting cannot be a substitute for rule-making on emissions of CO₂.

Environmental Justice

21. Because Ford heights is a low income, minority community, the Illinois EPA should complete an environmental justice analysis for the proposed plant in that the permit might result in a significant, adverse, disproportionate impact on the people who would live

nearest to the proposed plant. Local impacts may include deposition patterns of hazardous air pollutants, the cumulative impacts of this and existing facilities, and odor, noise and traffic conditions. These issues are particularly important because of the proposed location of the plant near homes, schools and parks.

In order to evaluate the potential for significant adverse impacts from emissions of the proposed plant, Ford Heights Ethanol conducted atmospheric dispersion modeling for the emissions of hazardous air pollutants (HAPs) from the proposed plant that are of concern for ethanol plants. The results of this dispersion modeling were then compared to screening criteria developed by the Illinois EPA Toxics Assessment Unit based largely on criteria and information concerning health impacts previously generated and assembled by the USEPA. These screening criteria addressed acute and chronic health impacts due to short-term and long-term inhalation exposures to the HAPs of potential concern. The analysis showed that the impacts of the proposed plant would be below, i.e., better than, these criteria.

The existing plant that is of potential concern for cumulative impacts with the proposed plant is the adjacent waste tire fired power plant, which is now owned by Geneva Energy. Given the different HAPs of concern for ethanol plants and waste tire fired power plants, impacts can be addressed separately. The HAPs associated with ethanol production (e.g., aldehydes, acrolein, methanol and hexane) are organic gases. They are different from the pollutants of concern that would be emitted from the adjacent fired power plant, which are heavy metals and are generally emitted as particulate. During the permitting of the neighboring power plant, dispersion modeling was conducted for emissions of concern for that plant. This indicated that this power plant would not have a significant impact on air quality for various metals.

The dispersion modeling that was performed for the proposed plant also addressed odors. Modeled concentrations were below screening criteria for the odor thresholds of the different pollutants. In addition, in response to public comments, the issued permit requires Ford Heights Ethanol to keep records for complaints and other inquiries that it receives about odors and the emissions of the plant. These records will assist the Illinois EPA in reviewing the practices of Ford Heights Ethanol in responding to odors complaints, if any, and in assessing the overall effectiveness of the control measures at the plant in controlling odorous emissions.

The proposed plant would not be accompanied by a significant increase in traffic in the Village of Ford Heights when compared to the current level of traffic. Truck traffic for the plant would travel on established truck routes and not go through residential neighborhoods. The Illinois EPA's experience with new ethanol plants is that they are not a source of nuisance noise.

At the present time, numerous new ethanol plants are proposed or being developed at sites throughout Illinois. As these plants are located in a variety of communities,

any impact experienced by the residents of the Village of Ford Heights would be similar to impacts associated with new ethanol plants in other communities. As the proposed plant is smaller than many other new plants and would use an afterburner system to control VOM emissions from fermentation, permitted emissions of the proposed plant would be lower than at many, if not at most, other new plants. Other provisions have also been included in the permit to address the potential impacts of the plant. Lastly, the dispersion modeling performed for the proposed plant demonstrates that the local community will not suffer a significant adverse impacts from the emissions of HAPs that are of concern for ethanol plants.

Finally, an important component of environmental justice is the opportunity for public participation in the permitting process. The Illinois EPA chose to hold a public comment period on a draft permit for the proposed plant given the project's location. At the request of a local environmental organization, this comment period was enhanced to include a public hearing. Comments from the public led to inclusion of certain conditions in the construction permit that were not present in the draft permit, as discussed elsewhere in this document. In addition, the public participation process identified local support for the proposed project. In particular, the Illinois EPA has received letters from the Mayor of Ford Heights, representing the Village Board, that express support for the proposed project.

22. I am concerned about the health of the children in the Ford Heights area. Children can be more vulnerable to emissions and pollution than adults because children's bodily systems are still developing; they eat more, drink more, and breathe more in proportion to their body size and their behavior can increase their exposure. I am particularly concerned about what will happen when the emissions from the ethanol plant are combined with the existing waste tire fired power plant and believe somebody should look at that.

Children's health is considered by USEPA when establishing ambient air quality standards and other criteria defining unacceptable levels of exposure to various pollutants. For emissions of and airborne exposure to pollutants, standards and criteria are established to protect sensitive populations, including children, as well as the elderly and individuals with respiratory diseases. As a result, the air quality modeling that was performed for the proposed plant, which compared impacts to criteria selected by the Illinois EPA's from information assembled by USEPA, are also protective of children's health. As already discussed, the impacts of the proposed plant and the existing power plant can be addressed separately.

23. I am concerned that the emissions from the ethanol plant will come down to the ground when it is rainy, cold or during other weather conditions?

The dispersion modeling conducted for the plant addressed air quality impacts from the proposed plant under all weather conditions, including those weather conditions that provide the least amount of dispersion and the highest concentrations of pollutants downwind from the plant. The predicted concentrations of pollutants under these worst-case weather conditions were not above the screening criteria.

Other Matters

24. The proposed plant would support the local economy in a variety of ways.

While Ford Heights Ethanol and supporters of the proposed plant have indicated that the proposed plant would support the local economy, e.g., by providing jobs, by paying taxes, and by buying goods and services from local businesses, the potential economic benefits from the plant did not factor into the permitting decision of the Illinois EPA. The Illinois EPA's decision to issue a permit for the proposed plant was based solely on the environmental considerations, as is appropriate given the role of the Illinois EPA in the permitting of the proposed plant.

25. The Illinois EPA should address the 20/20 report by John Stossel stating that the production of ethanol is not cost effective. Federal subsidies are driving the profitability of ethanol plants.

The decision of a company to develop an ethanol plant, the profitability of the proposed plant and the reasons why the plant will be profitable are not issues that the Illinois EPA evaluates when reviewing a permit application. As previously explained, the Illinois EPA's decision to issue a permit for the proposed plant was based solely on the environmental considerations. In this regard, the report cited by this comment does not identify issues about the emissions from ethanol plants that demonstrate that a permit should not be issued for the proposed plant. Incidentally, the report does caution that the benefits of ethanol production are overstated by some supporters of ethanol. On a national level, production and use of ethanol will have only a relatively minor effect on crude oil consumption. There are also environmental impacts that can accompany increased production of corn. As such, ethanol should not be considered to substitute for improvements in energy efficiency, particularly as related to reductions in emissions of CO₂. However, this does not demonstrate that it is inappropriate for the government to encourage use of ethanol with subsidies due to the benefits that do accompany increased use of ethanol in fuel.

26. I am concerned about the use of corn to produce ethanol. If corn is used to produce ethanol, there may not be enough remaining for food.

Increased production of ethanol from corn is expected to raise and stabilize the price of the "field corn" that is used in corn processing plants and as fodder for animals, helping to support our nation's farm economy. However, a shortage of corn and corn-based products for human consumption is not expected. For example, the 20/20 report by John Stossel cited in the above comment did not identify shortage of corn for human consumption as an issue posed by use of corn for ethanol production.

FOR ADDITIONAL INFORMATION

Questions about the public comment period and permit decision should be directed to

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