ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

July 2001

Responsiveness Summary for Public Questions and Comments on the Construction Permit Application from Ameren Energy Generating Company

Site Identification No.: 031438ABC
Application No.: 00100065

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FINAL DECISION

Ameren Energy Generating Company submitted an application for an air pollution control construction permit for an electric power generation facility in Elgin. The proposed facility would have four simple cycle gas turbines to generate up to 540 MW of electricity. The facility is described as a peaking facility. As such it would operate primarily on hot summer days when the demand for electricity is greatest. It would also operate at other times as needed to meet the demand for electric power. The facility would burn natural gas, which is the cleanest commercially available fuel.

The proposed project is not considered a major source because the permitted emissions of pollutants from the facility would be less than major source thresholds. In addition to selection of fuel, the emissions of the turbines would be controlled by the design of their combustors. (The combustors are the part a turbine where the natural gas fuel is burned.)

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 June 8, 2001, the Illinois Environmental Protection Agency (Illinois EPA) issued a permit to construct the proposed electrical generation facility to Ameren Energy Generating Company. The facility must be constructed and operated in accordance with applicable regulations and the conditions of the permit.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air processes applications for permits for sources of emissions to the atmosphere. An air permit application must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial technical review of Ameren Energy Generating Company's application, the Bureau of Air made a preliminary determination that the application 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 February 24, 2001, with the publication of a notice in the Elgin Courier News. Notices were also published in this paper on March 3, and 10, 2001. A public hearing was held on April 12, 2001 at 7:00 p.m. at the School District U46 Administration Office Auditorium in Elgin to receive oral comments and answer questions regarding the application and draft air permit. The comment period remained open until May 12, 2001 to receive written comments.

CHANGES BETWEEN THE DRAFT AND FINAL PERMITS

Condition 2(b): The provisions addressing the trading program for nitrogen oxide (NO_X) emissions from electric utility units were enhanced and placed in this condition of the permit, rather than as a note at the end of the permit. This was done

because the Pollution Control Board has completed the rulemaking for Illinois to participate in this USEPA-based program.

Condition 4(b): This condition concerning startup and operating procedures was revised to clarify that the Permittee may include the manufacturer's instructions when developing its written operating procedures for the facility.

Condition 12(d)((iii): This condition concerning procedures for emission testing was revised to provide that the approach to selecting turbines for emission testing is subject to approval by the Illinois EPA.

Condition 14(c): This conditions concerning annual reporting was revised to require that the number of "quick starts" of the turbines, if any, be separately reported from regular startups.

QUESTIONS AND COMMENTS

General Questions

1. How will the proposed gas turbines make electricity?

A gas turbine is a rotary engine in which fuel is continuously burned with the force of the hot combustion gases as they expand pushing on a series of blades to rotate a shaft. When used in a power plant, the power shaft is connected to an electrical generator.

2. Can the proposed gas turbines use fuels other than natural gas?

The proposed facility would fire natural gas as its only fuel. Ameren has not applied to burn oil as a back-up fuel. Such an approval would require a new or revised Construction Permit from the Illinois EPA. The turbines are not physically able to burn coal or other solid fuel.

3. What is the difference between a peaking facility and so-called "base load" facilities?

Peaking facilities are intended to operate only when the demand for power is at its greatest (in Illinois, typically hot summer week days) and other times when less costly sources of power (such as coal-fired and nuclear plants) are not able to meet the demand for power. Base load power plants are developed so that they can be operated essentially year round, if there is a need for power at the price at which they can produce it.

In this regard, the gas turbines in peaking power facilities are installed in a "simple cycle" configuration, as they exhaust directly to the atmosphere, without using boilers to recover the energy in the hot exhaust gases. This means that peaker plants are also less efficient and more costly to run than "combined cycle" turbines. In a combined cycle turbine, the hot exhaust gases discharged from the gas turbines do not go directly to the atmosphere but instead are ducted through a waste heat boiler and used to make steam. This steam is then used to drive a steam turbine generator, to produce more electricity, which increases the overall output of the system compared to the gas turbine by itself. The recovery of steam in this manner increases the energy efficiency of a combined cycle plant by about 50 percent compared to a simple cycle turbine.

4. In documents to the City of Elgin, Ameren stated that the proposed facility would be operated during December, January, and February 53 percent of the time. This means that the facility would operate primarily during the winter. The Illinois EPA indicated in its opening remarks that it expects the facility to operate primarily in the summer during periods of peak electric demand. Does this change how the Illinois EPA reviews the application or what the Illinois EPA takes into account when reviewing the application?

In response to this comment, Ameren provided the Illinois EPA with a written response describing the likely operation of the proposed facility. This material indicates that operation of facility would be distributed 10% December through February, 5% March through May, 80% June through August, and 5% September through November. This distribution, with the bulk of operation occurring during summer months, is consistent with the Illinois EPA's expectations for the typical operation of a peaker power plant. Accordingly, no change to the Illinois EPA's review of the application is needed.

5. Why doesn't Ameren plan to use combined cycle turbines at the proposed facility, as they would be more efficient than simple cycle turbines?

While combined cycle turbines are more efficient than simple cycle turbines, combined cycle turbines cannot be turned on and off as quickly as simple cycle turbines. Combined cycle turbine installations are also more expensive to build because they require waste heat boilers, steam turbine-generators and large cooling water system to condense and reuse the steam, which are not present with a simple cycle turbine. Accordingly, combined cycle turbines are typically used to supply intermediate and base load electricity as the greater duration of operation compensates for the additional capital cost. Simple cycle turbines are more suitable for peaking operations to meet a need for power that is much shorter in duration and more variable in nature.

6. What is a "merchant power plant?"

A merchant power plant sells electricity on a wholesale basis to other companies that then sell the power on a retail basis to individual residential, commercial and industrial customers. Under deregulation of

electricity generation, the developer of a merchant power plant is not guaranteed a return on its investment and must compete in a free economic market to sell the power it can produce. Both peaking facilities and base load facilities can operate as merchant power plants.

7. What is wet compression for power augmentation?

Power augmentation is a feature that is available with the proposed turbines that Ameren would like to have available to it. In particular, Ameren has applied to be able to operate the turbines at the proposed facility in an "extra power mode," as well as a "normal mode." During power augmentation mode, a turbine is operated at a capacity higher than its normal maximum capacity. The firing rate of the burners is increased and water is introduced immediately before the compressor section of the turbine, i.e., "wet compression." Operation in this manner increases electricity output but also increases emissions and wear and tear on the turbine. As a practical matter, a turbine would only rarely run in the extra power mode in situations when the significantly higher cost of the increased maintenance on a turbine would be justified. To address this alternative mode of operation, an hour of power augmentation counts as 1.55 hours of operation for purposes of compliance with the limitation on annual operating hours in the permit.

8. Will this facility use the same turbines as the Rocky Road plant in East Dundee?

The turbines that are proposed for this facility are similar to the three larger turbines at the Dynegy Rocky Road plant in East Dundee.

9. Has Ameren already contracted for the turbines?

At the hearing, Ameren stated that it already owns the turbines that would be installed at the proposed facility. However, Ameren had to obtain a Construction Permit to actually install the turbines and develop the proposed facility in Elgin. If it had not obtained this Construction Permit, Ameren would have had to pursue use of the turbines in another project elsewhere, assuming that it did not wish to terminate its agreement with the supplier of the turbines.

10. Solar and wind power are commercially available. Why did the Illinois EPA indicate in its opening remarks that natural gas is the cleanest commercially available fuel?

Ameren has proposed building a fuel-fired power plant. In this regard, natural gas is the cleanest commercially available fuel that could be used for this plant. While solar and wind power can be used to generate electricity, Ameren has not proposed to develop a facility using this technology. In addition, current solar and wind power technology are not suited for practical development of a peaker plant, as such plants must be able to provide power at any time.

11. What pollutants would be emitted from the proposed facility?

The pollutants emitted by the proposed facility are the pollutants associated with burning of natural gas for any purpose. The pollutant of greatest concern for a natural gas fired power plant is nitrogen oxides (NO_x). Other pollutants emitted include carbon monoxide (CO) and, in smaller amounts, particulate matter (PM), volatile organic material (VOM) and sulfur dioxide (SO_2). Some of the compounds that make up the VOM are hazardous air pollutants (HAP).

Air Quality Impacts

12. What would be the effect of the proposed facility on ambient air quality?

The proposed facility should not have a significant effect on ambient air quality. This means that existing air quality in the area of the facility should not be affected or threatened by the facility.

13. What is the current air quality in the area where the proposed plant is to be located?

Based on information from the ambient monitoring stations operated by the Illinois EPA, the air quality in the area where Cook, DuPage and Kane Counties meet, where the plant would be located, currently complies with the applicable National Ambient Air Quality Standards.

14 What is the combined effect of all of the new power plants being proposed for the state?

For pollutants other than ozone, the impact of these plants is more than adequately evaluated by the air quality impact analysis, i.e., dispersion modeling, conducted as part of the review of the particular proposed power plant.

For ozone, based on the Illinois EPA's experience with regional ozone modeling, none of these new plants will have an effect on air quality locally and individually will not an identifiable effect on ozone air quality in the region. In addition, the Illinois EPA recently looked at the combined impact of these proposed plants on regional air quality as part of the development of Illinois' attainment demonstration for the current one-hour average ozone air quality standard. This evaluation showed that if a large number of new power plants were built and operated, they would contribute to a small but noticeable increase in peak ozone levels, at points downwind outside of the greater Chicago area. However, the attainment demonstration also is based on massive reductions in NOx emissions from existing coal-fired power plants, both in Illinois and other midwestern states, as a result of USEPA's so-called NO_x SIP call. The evaluation shows that these reductions along with ongoing reductions in emissions from other categories of existing sources will be sufficient to accommodate the potential effect of new power plants and still allow attainment of the ozone air quality standard at the downwind locations where violations of the standard

continue to be predicted. This conclusion will be verified by the network of ambient monitoring stations operated by Illinois and other states along Lake Michigan to measure actual ozone levels.

Applicable Requirements

15. Is the proposed facility limited to a certain number of hours that it is allowed to operate? Does the permit restrict the amount of fuel that is used? What are the benefits of one approach over the other?

The permit limits both the annual operating hours and annual fuel usage of the turbines as Ameren proposed constraints on both aspects of the facility in its application. Both types of limitations are acceptable ways to set limits on actual operation of a source to go along with and reinforce limitations on annual emissions. This is because there is a correlation between the operating hours of a turbine and the amount of fuel it uses, and vice versa.

From the perspective of the Illinois EPA, compliance with a limitation on fuel use may be verified more directly by examining fuel meters. However, turbines are also equipped with operating instrumentation and data recording systems so that a turbine's operating hours may also be readily tracked and verified.

16. Is the facility permitted to carry over "unused" fuel or hours of operation allowed by the permit to the next year?

No.

17. Are there short-term emission limits for the proposed facility so that it cannot emit high levels for a short period of time and then average that over an entire year?

Yes, the permit contains both emission limits that apply on an hourly basis and emission limits that apply on an annual basis.

18. What are the permitted emissions of NOx from the turbines?

Permitted annual emissions of NOx from the turbines are 235.5 tons. The fuel heaters are permitted for 11.9 tons, bringing the facility total to 247.4 tons.

19. The performance sheet for the turbines provided in the application shows certain "cases," combinations of operating load and ambient temperature, in which a turbine's hourly emissions of CO would exceed 66 pounds.

In its application, Ameren provides specific calculations for CO using data provided by the manufacturer of the turbines showing that the turbines will meet a limit of 66 pounds per hour. [Letter dated February 7, 2001] Following completion of construction, Ameren must conduct emission tests to demonstrate that the turbines comply with this limit in actual practice.

20. Are the emission controls planned for the proposed turbines Best Available Control Technology (BACT)? Are these turbines the cleanest available on the market today?

The emission control techniques used at the proposed facility would be similar to those at larger peaking facilities that are major sources and are required to use BACT. In particular, these larger peaking plants rely on burner technologies to minimize emissions, as does the proposed facility, and do not use add-on control systems like Selective Catalytic Reduction (SCR).

There is a range in actual emission performance from the burners from the different turbine manufacturers. In particular, General Electric can achieve 9 ppm NOx for a similarly sized new turbine with its burner technology. There are also turbine manufacturers that target NOx emission rates that are in the range of 20 to 25 ppm NOx for their comparable model of new turbines. With NOx emissions at 15 ppm, the proposed turbines are in the mid-range of emission performance. Since the proposed facility is not a major source, it is not subject to a legal requirement to use BACT to minimize its emissions and the application does not include a BACT demonstration. In the absence of such a demonstration and review by the Illinois EPA, it is not possible to conclude whether the proposed turbines would be found to provide BACT.

21. In its application, Ameren requests permission to continue to operate during malfunction or breakdown. Did the Illinois EPA grant this request?

No. The permit requires compliance with the permit emission limits at all times except startup and shutdown. In particular, malfunction authorization is not relevant for this facility in the way that Ameren requested it in its application. The particular form on which Ameren requested authorization to continue operation during malfunction or breakdown concerns a provision in Illinois' air pollution control rules that allows an emission unit to continue operation with emissions that exceed an applicable state emission standard as needed to protect personnel, provide an essential service, or prevent significant damage to equipment. [35 IAC Part 201, Subpart I]. However, other than opacity, state emission standards do not limit the turbines at the proposed facility. The proposed facility is instead constrained by project-specific limitations taken on through the permitting process to ensure that the facility does not constitute a major source of emissions for purposes of the PSD rules.

22. Can you define what is meant by malfunction and clarify the types of malfunction that are being referring to? What is the difference between malfunctions and upsets?

While the term malfunction may have different nuances depending on the particular context in which it is used. In general, a malfunction occurs when something does not proceed properly as it should. For this purpose, as the Illinois EPA regulates emissions, its concern is with malfunctions of an emission unit or a control device that increase emissions. The Illinois EPA is not concerned with malfunctions that are unrelated to emissions or that in some manner reduce emissions. Of particular concern are emission related malfunctions that do not otherwise directly require an emission unit to be shutdown, so that operation continues and that are accompanied by emissions that exceed an otherwise applicable limitation or requirement.

Examples of malfunctions are easier to provide for units equipped with control devices. For example, if the electric supply to an electrostatic precipitator on a coal fired boiler is interrupted when the insulation on cable fails, the boiler can continue to operate even though the precipitator has malfunctioned and no longer effectively controls particulate matter. If the failure is complete so the precipitator is inoperable, the malfunction would be considered a "breakdown."

Since the proposed turbines are not equipped with control devices, malfunctions would involve the turbines themselves. Malfunctions could involve physical failure of a feature in the burners that act to minimize emissions. Malfunctions could also involve so called "upsets," in which no physical failure occurs but operating parameters deviate outside the effective range to effectively minimize emissions. However, for a turbine any malfunction that would cause excess emissions would almost certainly trigger shut down of the turbine as the malfunction would also interfere with the normal functioning of the turbine to efficiently provide power.

23. The permit addresses startup of a turbine and operation for power augmentation but does not set specific emission limits for reduced load operation of a turbine. Therefore, I assume that if a turbine is run at reduced load, it must still comply with the hourly limits set in the permit for normal operation of a turbine.

That is correct. The limitations that are set in the permit reflect the maximum emissions allowed under any mode of operation. While the actual emissions of certain pollutants would go up somewhat at lower load, the limit that has been selected accommodates operation across the expected operating range of the turbines.

24. Are start-up emissions taken into consideration in the permitting of the proposed facility?

Yes. The permit imposes work practices that the source must take to minimize emissions during startup. The source must also fully account for emissions during startup using a conservative approach set forth in

the permit when complying with annual emission limitations set to ensure that the facility's emissions are below the levels at which it would be considered a major source under the federal PSD rules. The permit requires that emission testing be performed to address emissions during start-up, to supplement the emission data provided in the application.

25. What is a quick start? How quick is a quick start? Will quick start increase NOx, CO and VOM emissions? Will the turbines meet the hourly limits during quick start?

When a peaking plant gets a request for immediate delivery of power, it may decide to start more quickly than normal. Ameren stated at the hearing that using the procedures for such a "quick start," it could possibly shave 2 minutes off of the normal 20-minute startup for its turbines.

With a quick start, it is believed that emissions of a turbine could be higher than for a normal startup. This is because the turbine will be turned on faster and it is more likely that the ratio of fuel flow to air will vary outside the range to minimize emissions. However, given the conservatism of the factors and procedures in the permit to account for emissions during startups, quick start emissions should still be within the levels of emissions addressed by the permit.

26. If quick starts are so benign and nothing happens, why is a distinction between quick starts and normal starts made in the permit?

As explained above, a quick start may have a small effect to increase emissions. Therefore, it appropriate to require a source to take reasonable measures to minimize quick starts. In this regard, restricting quick starts to requests for immediate delivery of power due to unexpected outages is reasonable. It requires a source to work with the companies to which it sells power to schedule "normal operation" of a peaking plant. While such coordination could very well occur in the absence of any permit requirement, the permit requirement ensures that it will occur.

Another aspect of quick starts is the potential effect on the condition of the turbine and scheduling of maintenance. The manufacturers of turbines do recommend shortening the time periods for inspection and maintenance of a turbine to account for the extra strain that quick starts place on the turbine. Accordingly, from the perspective of the Illinois EPA, the occurrence of quick starts could necessitate closer oversight of the affected turbine. Incidentally, as quick starts do accelerate the maintenance required for turbines, quick starts are again something that sources want to avoid.

27. Are quick starts required to be tracked and reported separately from regular startups?

The permit requires the occurrence of any quick starts to be tracked and the number of quick starts must be reported in the annual emission report along with total number of startups.

28. The permit does not limit the number of startups. If the proposed facility exceeds 240 startups as assumed by the Illinois EPA, the facility could exceed the PSD threshold for CO. The way the permit is written does not ensure that this is not a PSD proposal.

Ameren's application indicates that the proposed facility would not be a major source. Different assumptions could certainly be made about the operation of the proposed facility that would then result in it appearing as a major source. However, this does not demonstrate that Ameren's representation is unrealistic or fundamentally flawed. When the representations in an application that demonstrate compliance are reasonable, an applicant is entitled to a permit and the permit is developed with appropriate conditions to verify and track compliance with those representations.
In this regard, the permit imposes requirements for testing of emissions to verify compliance with hourly emission rates and on a continuing basis emission monitoring for NOx emissions and appropriate recordkeeping as related to emissions of other pollutants.

Also relevant to this discussion is the conservative nature of the representations about emissions made in the application for peaker plants. The permits for these facilities set limits on the emission rates of the turbines based on data for maximum emissions provided by the manufacturer, in a situation where the manufacturer is financially at risk if a turbine does not perform as predicted. Thus there are allowances or margins of safety between the emission rates provided by the manufacturer and the typical emissions of the turbines. For example, emission testing of similar turbine at Rocky Road showed the actual CO emission rate to be less than 10 percent of the applicable hourly emission limit. Generally, NOx is the pollutant for which there is the smallest margin of safety between actual emissions and permitted emissions. Accordingly, the critical pollutant for determining whether the proposed facility is major in NOx. In this regard, of the pollutants where the rate of emissions may be increases during startup, i.e., CO, VOM and NOx, NOx is also the pollutant that is the least impacted, if it is actually affected at all.

29. The emission limitations in the permit are based on new clean turbines.

The emission limitations in the permit reflect the manufacturer's data for emission levels that can be achieved for the facility's life with proper maintenance and repair of the turbines.

30. The proposed facility should follow the manufacturer's recommended practices for maintenance of turbines, not practices that it may develop, as allowed by the draft permit.

For a proposed facility, the concern is to require that maintenance, as may relate to emissions, be carried out in accordance with written procedures. The Illinois EPA is not in a position to judge whether the manufacturer's recommended practices are either excessive or insufficient, nor will it be possible for this to be done until the facility is operational and there is operating experience. At the same time, the Illinois EPA would expect that the manufacturer's recommended practices would form the foundation of the

maintenance procedures at the facility and any decision to relax, rather than enhance these requirements, would be carefully considered by Ameren based upon its own experience.

31. Why is the proposed facility not a participating source in the Emission Reduction Market System (ERMS) if the annual VOM limitation in the permit (13.1 tons) is over 10 tons?

This applicability of the ERMS is based on actual emissions. It is expected that the actual VOM emissions of the proposed facility would be much lower than the permit limit so that the facility is not subject to the ERMS. For example, at Dynegy's Rocky Road peaker plant in East Dundee, testing of the turbines showed that the actual VOM emission rate was about a fourth of the permitted rate.

General Comments

32. Will Ameren personnel be on site whenever the turbines are operating?

Ameren has stated that they plan to have personnel on site whenever the turbines are operating.

33. Does the Illinois EPA study the impact of the facilities it permits on local development? In issuing permits the Illinois EPA should take into account zoning and local planning issues.

The Illinois EPA does not have a role in these aspects of the proposed facility. Under Illinois law, local aspects of proposed facilities are the responsibility of local government. The City of Elgin has the responsibility to address the potential for these effects, through zoning and land use management planning, through building permits and through other local approvals required for construction, and through its agreements with project developers. Concerns about these aspects of the proposed facility should be directed to the appropriate local governmental bodies.

34. Will the proposed facility sell electricity directly to local customers? Local citizens should get favorable electricity rates from Ameren.

Ameren indicated that the proposed facility will not be selling electricity directly to local customers.

35. Ameren does not have a contract with Commonwealth Edison so it won't be able to sell power to northern Illinois. The power that the proposed facility would produce will be sold out of state.

Ameren declined to comment on this issue at the hearing, which is its privilege. It is certainly possible that electricity from the proposed facility could be sold out of state. However, it is also quite possible that Ameren could enter into contracts to sell electricity to companies in Illinois.

36. Is there a need for the electricity from this facility? The permitted electrical output of just the new peaker plants proposed for Illinois could supply Com Ed with all the power it needs for its customers. Does the Illinois EPA take need into account in the permitting process?

The Illinois EPA is not authorized to address the need for a proposed power plant as part of its review of the construction permit application for a proposed plant. In this respect, under deregulation of electricity generation, proposed power plants are treated no differently under state law than other proposed sources. In this regard, the Illinois EPA certainly is not in a position to suggest that a proposed power plant is needed at any particular location. The Illinois EPA's role in the permitting of a proposed plant is narrowly limited by law to particular environmental aspects of the plant such as emissions.

37. Will this facility be profitable?

The Illinois EPA does not know whether the proposed facility is going to be profitable. Under applicable law, the expected profitability of a proposed new source is not a factor that can be considered by the Illinois EPA in reviewing the application.

At the same time, the number of new power plants proposed for Illinois speaks for itself. Companies would not be pursuing these projects unless they thought they could make a profit.

Compliance Procedures

38. How would the Illinois EPA know if Ameren is not meeting the limits set forth in the permit?

Ameren is required to submit test results, monitoring data and operating records to the Illinois EPA. The Illinois EPA would also inspect the facility on a regular basis to audit its records and further ensure that it is operating in compliance with the permit.

39. Who selects the independent contractor to do emission testing?

The source selects the emission testing firm. The Illinois EPA reviews the credentials of the selected contractor to make sure that it has the appropriate qualifications. The Illinois EPA also reviews the specific plan for the test to help ensure testing will be performed in accordance with the applicable test methods and procedures to verify compliance with applicable emission limits.

40. Why doesn't the Illinois EPA set the approach for selecting the turbine for testing? When the city does code enforcement it doesn't allow the landlords to choose what apartment are to be inspected. The city sets the policy and tells landlords when and where it will inspect.

The issued permit provides that the approach for selecting turbines to be tested is subject to approval by the Illinois EPA.

41. Would the proposed facility have continuous emission monitors?

Yes, the proposed facility would be required to have continuous emission monitors for NOx.

42. How often does the Illinois EPA perform routine inspections occur? Does the Illinois EPA give sources advance notice that it is coming for an inspection?

Large source are routinely inspected on annual basis. For its routine annual inspections, the Illinois EPA usually schedule the inspections in advance to make sure that the source has appropriate staff available on site for the inspection. If the Illinois EPA suspects that there are problems at a source, the Illinois EPA would conduct additional inspections, some of which may be unannounced, as this would better identify the source's typical operating practices.

43. Have any of the natural gas fired power plants had permit violations?

Of the permits issued by the Illinois EPA only a few of the facilities are constructed and have been operating for a full season. However of the facilities that the Illinois EPA has permitted there have been no violations of their permitted emission limits.

44. What is the minimum or avoided cost of electric power? Why is it being used to set a deadline for submittal of initial emission test data for the proposed facility?

Historically under federal law, when a facility generates electricity, if relevant technical provisions for connection to the power grid are met, the local utility has to accept that electricity. For example, if a manufacturing facility generates its own electricity and puts surplus electricity onto the grid, the local utility has to accept the electricity. The surplus electricity displaces electricity that the utility would otherwise have to produce or purchase itself. However, the local utility does not have to pay the cost of the manufacturing facility to produce electricity. Rather, the local utility only must pay what it would have cost it to produce that electricity determined as its minimum or avoided cost for electricity from its least expensive source. This situation is different from that at a fully operational peaker plant, which enters into agreements to sell electricity. The power purchaser must contract for the services of the peaker plant and pay a price for electricity set by or negotiated with the plant, in which the peaker plant's costs will be a factor.

Accordingly, the price being paid for a peaker plant's electricity is an appropriate means to determine whether a new plant has completed shakedown or not. Until a new plant completes shakedown, the economic interest of the new plant is to minimize operation to the extent needed to carry out shakedown because the source is not yet being fully compensated for operation of the plant. However, once shakedown is completed, the facility can enter into contracts to sell electricity at a profit and it is in the facility's interest to maximize its operation consistent with its customers' needs for power. At this point, when the source begins gainful operation in this manner, the formal results of emission testing need to be promptly submitted to the Illinois EPA.

45. What are the consequences if the proposed facility would exceeds its permitted limits? If the facility exceeds the PSD threshold of 250 tons per year, would it have to shut down?

The compliance procedures placed on the proposed facility, including continuous emission monitoring for NOx, should ensure that the facility does not exceed the permitted limits. However, if there were to be a numerical violation of a permit, the Illinois EPA would take steps to assure that the problem is corrected. As necessary, the Illinois EPA would set up a compliance schedule, and take steps to bring a company into compliance, and pursue appropriate monetary fines for the non-compliance. These efforts would be coordinated with the Attorney General's Office if litigation were needed.

In particular, in the highly unlikely event that the emissions of the facility would exceed the PSD thresholds, the Illinois EPA would initiate an enforcement action to deal with the fact that the facility operated as a major source. In general, when a facility operates as major source without the appropriate permit for a major source, the administrative consequence is that the source has to be repermitted as a major source and comply with applicable requirements for a major source, such as use of Best Available Control Technology (BACT) to minimize or control emissions. It is uncommon for the State of Illinois to seek to close down a noncomplying facility because this action is only warranted when there is direct risk to public health or the environment from the continuing operation of a source. In this regard, the proposed facility would not pose a threat to health even if it emitted far more than 250 tons per year.

46. Will there be monetary penalties (fines) for violations?

Whether a penalty is pursued for a violation depends on the specific nature and circumstances of a violation. However, one element of the Illinois' penalty policy is that sources should not profit from noncompliance. Accordingly, if a source has profited significantly from its noncompliance, the Illinois EPA will, working with Attorney General, pursue a penalty so that the source does not gain from operating out of compliance.

Modeling Procedures

47. Did the dispersion modeling evaluate the worst-case operating scenario as is required?

Yes. The modeling was performed for the maximum emissions of the turbines as would occur during full load operation under cold-weather conditions. With respect to stack characteristics, the modeling used exhaust parameters, i.e., flow rate and temperature, for low load operation of the turbines, which represent worst-case conditions for the stack. This is because for turbines, like other emission units, the momentum and the buoyancy of the exhaust determine the extent of plume rise. The volume and temperature of a turbines exhaust are not as great during low load operation, so the exhaust is less buoyant and has less momentum. Accordingly, low load operation of a turbine, when the plume does not rise as high, potentially may produce higher ambient concentrations than full load operation.

48. In its modeling, Ameren identified three operating scenarios, 100 percent load at 59 ^{o} F., 100 percent load at 0° F., and 75 percent load at 59 ^{o} F. The scenario of 75 percent load at 0 ^{o} F. was not addressed. Why was this not done? Which one of these three scenarios that Ameren suggested for the air modeling is the worst-case scenario?

For operating parameters, i.e., flow rate and temperature of the turbine exhaust, the worst-case scenario is 75 percent load at 59 ^{o} F., as it is accompanied by the lowest flow rate and exhaust temperature. This is because the output of a turbine increases as temperature drops so that operation at 75 percent load at 0 ^{o} F. would have higher flow rate and temperature than at 59 ^{o} F. Because Ameren's modeling did not address operation of a turbine below 75 percent load, the permit does not allow the turbines to operate below 75% load. Refer to Condition 4(b)(i)(B).

49. Did the dispersion modeling include other electric power plants in the area such as the facilities in Bartlett and East Dundee?

Yes, the modeling included other new power plants. The Illinois EPA performed multi-source modeling, including the facilities in Bartlett and East Dundee, to get information on the combined impacts of the new facilities in the area. This modeling supplemented the initial modeling performed by Ameren, which was for the proposed facility alone and was conducted to evaluate whether the impacts of the proposed facility by itself would exceed the air quality significant impact levels. Neither of these modeling analyses showed significant impacts on air quality.

50. Why are the results for PM10 so much higher in the multi-source modeling analysis?

One of the other facilities included in the multi-source modeling is the proposed ABB Grande Prairie facility, which would be located nearby in Bartlett. This facility is permitted to burn oil as well as natural gas. Oil has a measurable ash content so that burning of oil in a turbine results in more PM10 emissions than burning natural gas. The PM10 modeling results show this as the multi-source modeling evaluated use of oil by ABB as this mode of operation would result in higher emissions, even though ABB is only permitted to use oil as a backup fuel. Accordingly, the numerical PM10 impact in the multi-source modeling with the ABB facility is several times higher than the impact from the Ameren facility by itself, as provided by the basic modeling. At the same time, the combined impact of the facilities is still less than USEPA's significant air quality impact level. This phenomenon does not arise for other pollutants, like NOx or CO, because the emissions of the ABB facility for other pollutants are not affected in the same manner by the ability to use oil.

51. The Illinois EPA should not be doing dispersion modeling for a permit applicant, like it did for Ameren. There is no reason to spend my tax dollars doing modeling for a power company.

The modeling that Ameren performed demonstrated that the facility would not have significant impacts. In general, this would be all the modeling that would be required for a proposed source, even if it were a major source of emissions under the PSD rules. The further modeling analysis, that was performed by the Illinois EPA to address other proposed sources in the area goes beyond the ordinary requirements for modeling. While the Illinois EPA's preferred approach is to have a source such as Ameren perform all required modeling, in this case, the Illinois EPA's modeling group decided it would be simpler to do this modeling itself. In terms of our obligation to review permit applications, it is not inappropriate for the Illinois EPA to do an evaluation to address concerns expressed by the public as to the combined impact of facilities. In this case, this further analysis does go beyond what would have traditionally been necessary, as Ameren has demonstrated that the proposed facility by itself would not be significant.

52. Which ambient monitoring station did the Illinois EPA use for the modeling analysis?

For its multi-source analysis, the Illinois EPA used data from monitoring stations in Braidwood (NOx), Hoffman Estates (particulate matter), and Lisle (SO2). Given the manner in which locations for

monitoring stations are selected, data for these pollutants was not available from a single station that would represent the Elgin area.

53. The Illinois EPA should have more ozone monitoring stations to be able to determine a more local ozone impact.

The ambient monitoring stations that the Illinois EPA operates throughout the state have been located to provide sufficient information to generally evaluate air quality levels. In particular, many of these ambient monitoring stations are located in areas with the greatest number of sources to represent maximum impact. If the ambient air at these worst locations complies with the ambient standards, then the Illinois EPA is confident that other locations are also complying with the standards. Other stations are located in more typical areas to provide information on the general levels of air quality throughout the state.

With respect to ozone, the monitoring stations have been carefully placed to measure exceedances of the ozone air quality standard, to determine how far they extend, and to see how effective Illinois' efforts in lowering emissions are in decreasing the levels and the geographic scope of ozone exceedances. Indeed, the western suburbs are no longer in the area that experiences exceedances of the one-hour ozone standard. In communities along and near Lake Michigan starting in northern Chicago and continuing up through Wisconsin, compliance with the ozone standard continues to be a problem, although levels of ozone have decreased greatly.

Administrative Procedures

54. The public should be able to address all issues at the Illinois EPA hearings because this is the only time in the process of one of these sources being built that local residents have a chance to address a government body.

The Illinois EPA routinely allows questions to be asked at hearings that would not impact the Illinois EPA's decision on the permit in an effort to make the hearing as informative to the public as possible. This does not mean that the Illinois EPA staff that attends these hearings will be able to answer all of the questions and also does not require the Illinois EPA to provide experts or Ameren to provide answers to the questions. Although the Illinois EPA routinely allows these questions, the purpose of the hearing is to receive questions and comments that are relevant to the permit decision. The Illinois EPA reserves the right for various reasons, including time constraints, to limit questions that do not bear directly on the permit decision.

55. Is there any requirement that local government participate in the State permitting process?

No. The Illinois EPA solicits input from public officials as well as from private individuals. However they are not required to participate in the Illinois EPA permitting process.

56. The Illinois EPA should not hold hearings on holy days such as Maundy Thursday.

The Illinois EPA tries to hold hearings on dates when there are not obvious conflicts with the hearings so that people should be able to attend. In this regard, Maundy Thursday is not a federal or state holiday and is not identified as a religious day on many calendars. Accordingly, the Illinois EPA does not believe that it was inappropriate to schedule the hearing on the construction permit for the proposed facility on Maundy Thursday. In addition, individuals who cannot attend a hearing for religious reasons or choose not to attend for other reason still have the ability to submit their comments in writing. Written comments on a proposed permit action are also considered by the Illinois EPA before it takes final action on the proposed project.

Environmental Policy

57. Quick starts should be limited to emergency situations in Illinois and should not apply to emergency situations outside of Illinois. Indeed, the governor should rule that no electric power produced in Illinois may be transported outside the State of Illinois for any reason.

The restrictions suggested in this comment would violate free interstate commerce as protected by the United States Constitution. Moreover, at this time, given the nature of the power transmission grid, it is not clear that such a restriction could be readily enforced as a practical matter. In addition, before such a restriction was attempted, its consequences would have to be carefully evaluated. Any such restriction would have direct effects on the regional economy and the health and welfare of the residents of Illinois as they rely upon markets, services and products (including electricity generated outside of Illinois), provided by neighboring states and the nation as a whole. In this regard, while power shortages elsewhere may not directly inconvenience or injure the residents of Illinois, the residents of Illinois do experience the economic consequences of such shortages as they increase the cost of doing business in the areas that is directly impacted.

58. Is the Illinois EPA implementing the recommendations for peaker plants in the Illinois Pollution Control Board's informational order from December? Does the informational order apply at all to Illinois EPA decisions?

In December, the Illinois Pollution Control Board issued some recommendations on peaker plants. Most significantly, the Board found that further investigation is needed to determine whether BACT should be

imposed on the non-major source peaker plants in Illinois, which are not currently subject to a BACT requirement. However, it is also apparent, in light of the electric energy crisis in California that issues dealing with electric power must be dealt with on a comprehensive basis, rather than just considering new natural gas fired peaker power plants. As a result, under the leadership of Governor Ryan, the Illinois EPA and other state agencies that deal with energy-related issues have been working to develop a comprehensive approach to Illinois' energy supply, which includes both coal and gas fired electric power plants. In this regard, this spring, the Illinois legislature also mandated that the Illinois EPA perform an evaluation of measures to further reduce the emissions of the existing power plants, which largely are associated with combustion of coal, and to propose rules to the Board as appropriate. Peaker plants will be addressed as part of this broader evaluation, for which initial discussions are already underway.

59. Is cost benefit analysis performed, considering the quantitative value on health and environmental benefits compared to the cost of control to further reduce emissions?

No, cost-benefit analysis does not have a role in day-to-day permitting. While cost benefit analysis may be used when new emission standard are being considered, to evaluate different regulatory options, these analyses no longer used when such rulemaking is complete. In permitting, a source must comply with the applicable rules without consideration of the nature of the benefits that result or the costs that are entailed. Any change to adopted emission standards to accommodate the specific circumstances of an individual source would require that the rulemaking be revisited and cannot be accomplished by consideration of accompanying costs and benefits as part of the permitting process.

60. Does the Illinois EPA look at the financial constraints of a company in determining what emission controls should be used by a facility? Are the health costs to the residents of Illinois part of the financial considerations in determining BACT?

No, a company's financial situation is also not a factor during permitting. For purposes of permitting, a source is expected to take the necessary steps to comply with the applicable emission standards, including ambient air quality standards and other guidelines set to define safe and unsafe levels of pollutants in the air, irrespective of its particular financial constraints.

With regard to BACT, BACT is a technology-based requirement that is separate and independent of the obligation of a proposed source to protect and maintain compliance with the ambient air quality. In this regard, the regulatory question posed by a BACT demonstration is whether a source's emissions should be further controlled beyond the minimum acceptable levels required to protect air quality and comply with adopted emission standards. In this context, costs only play a significant role when one is evaluating an innovative control measure that has not been routinely applied to a particular type of emission unit. If other similar new emission units are utilizing a certain type of control or achieving a specific level of emissions control, a proposed new emission unit subject to BACT must proceed in an identical fashion unless there are distinguishing factors, unrelated to the applicant's financial circumstances. Even when evaluating innovative control measures that have not been routinely applied to a particular type of unit, the

nature of the cost evaluation and comparison does not directly address the financial constraints of the applicant. The control measures being evaluated are considered appropriate as BACT if the associated costs, expressed in dollars expended per ton of pollutant controlled, are within the levels expended by sources generally for control of the specific pollutant(s).

61. Does a home rule community have the authority to impose stricter environmental standards than the Illinois EPA?

Yes. However, most communities do not choose to expend their resources to develop and then enforce local requirements for control of air pollution.

62. Does the Illinois EPA ever get involved in energy conservation measures, or is it simply regulatory? The state should increase energy conservation measures.

The main state agencies that deal with energy conservation are the Department of Natural Resources and the Department of Commerce and Community Affairs. The Illinois EPA does get involved in energy conservation to a limited degree as part of its efforts to promote pollution prevention and recycling.

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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