

217/782-2113

July 31, 2001

Sent to persons on the hearing mailing list.

Dear:

Thank you for participating in the public comment period concerning the proposed issuance of a construction permit for the Indeck Rockford II project. The Illinois EPA's final decision was to issue a construction permit for the project. (Copy enclosed.)

Two significant changes were made to the permit based on the comments that were received. The provisions for written operating procedures (Condition 6(b)) were clarified and Recordkeeping requirements for ambient temperature and turbine load were included in the issued permit (Condition 13(c)).

The relationship between Indeck's proposed Rockford II project and its existing Rockford facility was the subject of the most questions during the public comment period. The draft permit for the Rockford II project treats it as a separate and independent project from the existing Rockford facility, which is now sometimes referred to as Rockford I. Thus the Illinois EPA proposed to issue the Rockford II facility its own Construction Permit, rather than revise the issued Construction Permit for the original Rockford facility. For purposes of the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, the Illinois EPA also proposed to address the Rockford II facility as a proposed modification to an existing source rather than to revisit the original permitting of the Rockford facility to determine whether it should now be considered construction of a major new source under the PSD rules.

By way of review, the "existing" Rockford facility consists of two simple cycle turbines at a site in the Rock River Industrial Park on Harrison Avenue. This facility began operation during the summer of 2000, following issuance of the Construction Permit by the Illinois EPA in February 2000. Accordingly the development and startup of the existing Rockford facility occurred before Indeck submitted its application for the proposed Rockford II project in October 2000. The proposed Rockford II project consists of a third turbine to be located at a site next to the original site. This third turbine would initially be installed in a simple cycle configuration (Phase 1) but would have the capability to be further developed into a combined cycle configuration (Phase 2). The turbine would be equipped with a Selective Catalytic Reduction (SCR) system for control of NOx emissions in Phase 2. For purposes of the federal operating permit program pursuant to Title V of the Clean Air Act, the proposed Rockford II project and the existing facility would be considered a single source.

The remainder of this letter provides the Illinois EPA's formal response to the questions and comments made by the public as part of the comment period.

*In a letter to Thomas Skinner, Director of the Illinois EPA, dated June 15th, 2000, Mr. Francis Lyons, who was then the Regional Administrator for USEPA Region 5, cautioned the Illinois EPA that certain changes might bring the potential emissions above the major source thresholds. One example he gave was the installation of additional capacity where such expanded operation was anticipated as part of the original design.*

As Mr. Lyons touched upon in his letter, the regulatory circumstances of the Rockford II project would have been very different if Indeck had been planning this project at the time that the original Rockford facility was being planned and permitted. In that case, the two projects would now have to be considered together as a single project and together they would constitute construction of a major source for purposes of PSD, assuming that Indeck were not willing to restrict the overall operation to maintain emissions below the PSD major source threshold.

*How many non-major modifications can a non-major source have before it is considered a major source for purposes of the federal PSD rules, 40 CFR 52.21?*

A non-major source becomes a major source when a modification results in the permitted emissions of the source exceeding the thresholds for a major source. In this regard, it is the nature of the non-major modifications, not their number, that determines whether an existing non-major source would be considered major after it is modified.

As applied to the Indeck Rockford plant, the modification of the existing source by the addition of the proposed third turbine is a "non-major modification." Therefore, Indeck is not required to obtain a PSD permit for this project. This is because the third turbine is not a major source when considered by itself. In order for this or any project at a non-major source to require a PSD permit, the project by itself must be major. In this case, since the third turbine is permitted for combined cycle operation (which would involve adding a steam cycle to increase the electrical output of the unit), the Rockford II project would be considered a major source for purposes of PSD applicability if it were permitted for annual emissions of 100 tons or more of a pollutant.

However, the third turbine would result in Indeck's Rockford plant becoming an existing major source for purposes of PSD. Hereafter, as the plant would be an existing major source, a future project would only have to result in a significant increase in emissions to be considered a major modification for which a PSD permit is required.

*Did the Illinois EPA request the explanation that the Rockford II project was not a phased project or did Indeck initiate this? If the Illinois EPA made this request, why?*

The relationship between the two projects was recognized as a potential issue by both the Illinois EPA, and presumably Indeck, from the very beginning of involvement in the project since the two projects, "Rockford I" and Indeck Rockford II would occur at a single source. Indeck readily demonstrated that that Rockford II was not a continuation of the development of the existing facility. In particular, Indeck identified a number of aspects of the development of the Rockford II project that would not have been present if it had been under consideration when the original Rockford facility was developed. Indeck also explained that the Rockford II project was triggered by events at projects being pursued by Indeck at other locations, so that a turbine

became available for use that Indeck had planned to use elsewhere. The Illinois EPA found this explanation to be acceptable. Further written confirmation and elaboration upon this information was subsequently requested of Indeck to allow the Illinois EPA to respond to identical concerns expressed by USEPA staff, as well as to provide further documentation in the application to support the treatment of the Rockford II project as a separate project from the development of the existing facility.

*Who is the manufacturer of the proposed turbine? Is this model of turbines used or permitted anywhere else in Illinois at this time?*

The turbine described in the application is a Siemens Westinghouse Model V84.3A. This is the same model of turbine that is present in the existing Rockford facility.

*How many hours will the turbine run after it is in a combined cycle configuration?*

In Phase 2, combined cycle configuration, the proposed turbine is permitted to run for a maximum of 4000 hours per year. In Phase 1, simple cycle configuration, the turbine is permitted to run for a maximum of 2000 hours per year.

*Lately the Illinois EPA has taken information on NOx emissions expressed in ppm (parts per million) out of permits. This makes it hard to compare the NOx emission rates of different proposed turbines. What are the NOx emissions in ppm for this turbine?*

The NOx emission limits for Phase 1 (operation in simple cycle mode) reflect 15 ppm NOx. In Phase 2, combined cycle operation with add-on SCR control, the limits reflect 3.5 ppm NOx. Incidentally, even though the permit does not include information on NOx emissions in ppm, information on emissions per million Btu heat input to the turbine is provided, which does allow comparison of the emissions performance of different turbines.

*There is not a discussion about load in the permit. May I assume that the proposed turbine will only run at 100 percent load? Is Indeck required to record if it runs the turbine at low load?*

The proposed turbine would not be restricted to operation at only 100 percent load. Indeed, the permit does not contain any specific numerical limit on the lowest load at which the turbine may be operated. Rather, this permit establishes a qualitative requirement that the Permittee not operate the turbine below the load range at which emission testing has been conducted. A requirement for recordkeeping for turbine load has been included in the issued permit. (Refer to Conditions 6(b)(i)(B) and 13(c)(vi).) In this regard, permits for new turbines contain numerical restrictions on the load below which the turbines may operate if the application does not address operation at reduced load or the permit applicant commits to operation in the upper load range of the turbines. In this case, while Indeck has generally indicated that the proposed turbine will routinely run at between 90 and 100 percent load, the application addresses operation across the full operating range of the turbine.

*As the Permit provides that "...except during startup, the Permittee shall not operate the turbine below the load range at which emission testing conducted in accordance has been demonstrated..." what load ranges are being considered for emissions testing?*

This determination has not yet been made and will not be made until shortly before emissions testing is conducted. However, for other turbine projects the loads during emissions testing has

varied from as narrow as 90 to 100%, to 60 to 100%, to as wide as 30 to 100%, depending upon the range of operation expected by the Permittee.

*The permit establishes two different limits for NOx and CO emissions from the turbine, one for when the temperature is below 49 °F and one for operation when the ambient temperature is 49 ° F and above. Why did the Illinois EPA prepare the permit in this manner?*

The permit has two different hourly emission limits to account for the increase in the capacity and maximum emissions of the turbine when the ambient temperature is cooler, as addressed by the application. This effect is most noticeable for NOx and CO and given the magnitude of this increase, the Illinois EPA established limits to address typical operation of the turbine in warmer weather, i.e., 49 ° F and above, and limits, which are about 15 percent higher, to address operation during cooler weather, i.e., below 49 ° F.

*Since the applicable emission limit depends on ambient air temperature, is there a requirement in the permit for recording the temperature?*

The issued permit includes a requirement to keep records of the ambient temperature when the turbine is operating.

*Condition 6(b)(ii) goes into review of operating procedures. An annual review of these operating procedures should be added to the permit.*

The draft permit does require a review of operating procedures on at least an annual basis. (Refer to Condition 6(b)) However, the provisions in the issued permit with respect to operating and maintenance procedures have been reworked to improve clarity.

*Why is there such inconsistency in the permit writing by the Illinois EPA?*

By way of initial response, the Illinois EPA does not agree that there are significant inconsistencies in the permits for new turbine-based power plant projects as suggested by this comment. While there are certain differences in the permits for these projects, there are underlying reasons for these differences. Proposed projects differ in the number, type and size of turbines that are proposed. Projects differ as they are proposed in areas that are attainment or nonattainment for the ozone air quality standard. Certainly, permits differ as they involve different turbines, with specific features and capabilities. In this respect there are differences in the effect of ambient temperature and operating load on the emissions of frame turbines, like the proposed turbine, and so called aero-derivative turbines. These permits also reflect differences in the information provided about the turbines in the applications, as often relates to fundamental differences in the applicants' plans and commitments for proposed facilities. The permits also reflect an evolutionary process, with improvements to the wording and content of permits with each subsequent project over time. In this regard, applications for a number of turbine projects are under review by the Illinois EPA at the same time. Accordingly, draft permits cannot reflect improvements to permits that result from public comments on other projects that occur after a draft permit is prepared. The Illinois EPA does attempt to incorporate these "other project" improvements into any issued permit, as appropriate, along with any other changes made in response to specific public comments on the particular proposal.

In closing, thank you again for participating in this public comment period on this project. If you have any questions on this letter, please call Manish Patel or Brad Frost at 217/782-2113.

Sincerely,

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

cc: Application File 00100077, ID 201030BCG

bcc: Indeck, Rockford