

Electronic Filing - Received, Clerk's Office, August 25, 2008

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
WATER QUALITY STANDARDS AND) R08-9
EFFLUENT LIMITATIONS FOR THE) (Rulemaking – Water)
CHICAGO AREA WATERWAY SYSTEM)
AND LOWER DES PLAINES RIVER)
PROPOSED AMENDMENTS TO 35 ILL.)
ADM. CODE 301, 302, 303, and 304)

NOTICE OF FILING

TO:

John Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, IL 60601

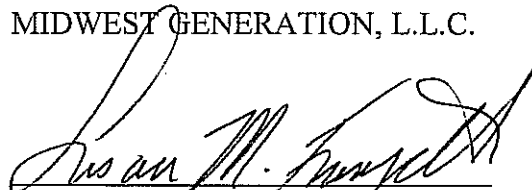
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Deborah J. Williams, Assistant Counsel
Stefanie N. Diers, Assistant Counsel
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1021 North Grand Avenue East
P.O. Box 19276
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Persons included on the attached
SERVICE LIST

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the
Pollution Control Board MIDWEST GENERATION'S QUESTIONS FOR STEPAN
COMPANY WITNESSES DR. CARL ADAMS AND MS. ROBIN GARIBAY, a copy of which
is herewith served upon you.

MIDWEST GENERATION, L.L.C.


Susan M. Franzetti

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Date: August 25, 2008

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CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 25th day of August, 2008, I have served electronically the attached MIDWEST GENERATION'S QUESTIONS FOR STEPAN COMPANY WITNESSES DR. CARL ADAMS AND MS. ROBIN GARIBAY and NOTICE OF FILING upon the following persons:

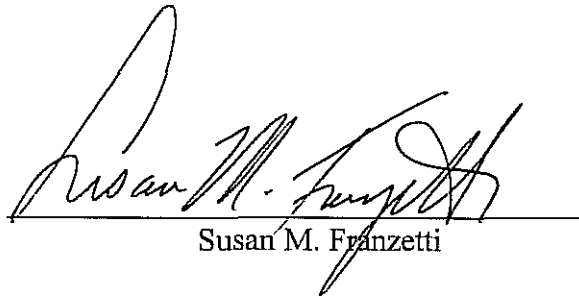
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Marie Tipsord, Hearing Officer
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and by U.S. Mail, first class postage prepaid, to the following persons:

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AND LOWER DES PLAINES RIVER)
PROPOSED AMENDMENTS TO 35 ILL.)
ADM. CODE 301, 302, 303, and 304)

**MIDWEST GENERATION’S QUESTIONS FOR STEPAN COMPANY WITNESSES
DR. CARL ADAMS AND MS. ROBIN GARIBAY**

Midwest Generation, L.L.C. (“Midwest Generation” or “MWGen”), by and through its attorneys, Nijman Franzetti LLP and Hunton & Williams LLP, submits the following questions based upon the Pre-filed Testimony of Dr. Carl Adams and Ms. Robin Garibay submitted on behalf of Stepan Company. Midwest Generation requests that the Hearing Officer allow follow-up questioning to be posed based on the answers provided.

QUESTIONS

I. Background

1. What is your experience in working with wastewater treatment plants, including the type of treatment systems necessary to achieve effluent or water quality standards?
2. Have you testified or consulted in other water quality standards rulemaking procedures?

II. Stepan Millsdale Plant

3. Describe in general terms the types of wastewaters collected and treated at Stepan’s Millsdale plant located in the Upper Dresden Island Pool and the plant’s wastewater treatment process.
4. How does the temperature of the wastewater that enters the Millsdale Plant’s wastewater treatment process affect the proper functioning of the wastewater treatment process?

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5. Does the operational temperature range of the wastewater in the Millsdale Plant's wastewater treatment process need to be maintained throughout the year? If so, explain why.

III. Thermal Compliance

6. You state at page 4 of your testimony that "[i]t is very evident that maintaining heat within the biological treatment process and then being required to remove the heat prior to discharge of the effluent is contrary to most, if not all, laws of nature on conservation and carbon footprint." Please explain further what you mean by this statement.
7. You further state at page 4 of your testimony that "[t]he energy that creates the heat in the WWTP effluent cannot be destroyed and can only be removed from the effluent by transferring it to some other environmental media, for example ambient air, through processes that themselves required energy resources and the production of more energy and heat."
 - a) With respect to this testimony, can the temperature of a wastewater be expressed in units of energy and is this another way of expressing the energy potential of the effluent?
 - b) Why does the removal of temperature or energy from wastewater require the generation of even more energy and explain what the impacts are of generating that additional energy?
8. Have you estimated how much heat would need to be removed from Stepan's wastewater discharge in order to comply with the proposed regulations? If so, please provide the estimate and how you arrived at it.
9. Your testimony at page 5 describes seven technologies/processes you evaluated for end-of-pipe temperature reduction (cooling ponds, flow augmentation, cooling towers, heat exchange, chillers, cooling air and surface aeration in tanks) after biological treatment of the wastewater. Why can't Stepan employ temperature reduction processes as part of the wastewater treatment process rather than as an "add on" treatment process?
10. Of the seven temperature control technologies and processes you evaluated for the Stepan Plant, which ones did you conclude were not feasible and why?
11. Beginning on page 8 of your testimony, you describe the economic costs involved in the technology of adding a cooling tower in combination with a heat exchanger/chiller combination at the Millsdale Plant and identify a capital cost of \$1,640,00 and O&M costs of \$1,300,00/yr. Please identify what the main cost components are of each of these cost categories.

IV. Disinfection

12. Why would Stepan have to disinfect its wastewater in order to comply with the proposed fecal coliform standard in the proposed rules for the Upper Dresden Island Pool?
13. On pages 9 and 10 of your testimony, you review the technologies considered for disinfection (e.g., source treatment by chlorination, end-of-pipe chlorination, and other end-of-pipe applications such as UV, ozonation or peroxide). Explain why you concluded that the only feasible option would be chlorination followed by dechlorination.
14. With respect to your assessment of the costs involved in the chlorination/dechlorination option, namely a capital cost of \$1,771,000 and annual O&M costs of \$650,000/year, please identify the main cost components of each of these cost categories.
15. Please explain the elements of "Environmental Impact" that you list on page 11 of your testimony for the chlorination/dechlorination treatment technology.

V. Dissolved Oxygen

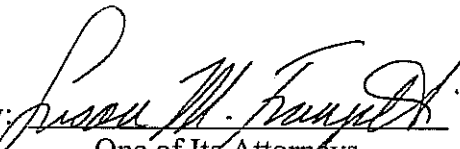
16. Please explain further what you mean by your testimony at p. 11 that "IEPA has not developed the data to assess the assimilative capacity of the Upper Dresden Island Pool water for DO (e.g., DO sinks, relationship between flow, DO, temperature, conductivity, kinetics of BOD and ammonia, etc.)" and your conclusion that IEPA will implement the proposed more stringent DO criteria as an end-of-pipe limit.
17. What do you mean by the statement at the top of p. 12 of your testimony that "temperature and conductivity of Stepan's treated effluent impacts the ability of the treated effluent to 'saturate' to a level to achieve potential DO limits"? How is the level of DO a factor in the biological wastewater treatment at the Stepan wastewater treatment plant?
18. On pages 12 and 13 of your testimony, you review the technologies considered for adding DO or supplemental aeration of a treated effluent (e.g., pressurized air diffusers, stair-step aeration, surface aerators, direct injection of oxygen, and hydrogen peroxide). Explain why you concluded that the only feasible option would be hydrogen peroxide addition.
19. With respect to your assessment of the costs involved in the hydrogen peroxide addition, namely a capital cost of \$250,000 and annual O&M costs of \$650,000/year, please identify the main cost components of each of these cost categories.
20. Please explain the elements of "Environmental Impact" that you list on page 13 of your testimony for the hydrogen peroxide addition technology.

VI. Findings

21. Based on your review, what is the total potential economic impact on Stepan from the proposed use classification and water quality standards for the Upper Dresden Island Pool?
22. You state in your Findings at page 14 of your testimony that “[i]n managing the wastewater to achieve consistent and complete compliance with the IEPA proposed discharge limits Outfall 001, Stepan will have to install and operate technologies that are well beyond the treatment considered ‘best’ for organic chemical manufacturing plants.” Please explain what you are referring to as the “treatment considered ‘best’ for organic chemical manufacturing plants.”
23. On page 15 of your testimony, at the end of the second paragraph, you state: “In our experience, the economic reasonableness to ‘smaller dischargers’ and the overall significant multi-media impacts of technically feasible controls ought to be thoroughly considered in any proposal to modify water quality uses or water quality standards.” Would you briefly describe the “experience” you are referring to in this testimony?

Respectfully submitted,

MIDWEST GENERATION, L.L.C.

By: 
One of Its Attorneys

Dated: August 25, 2008

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