

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

NOTICE OF FILING

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

PLEASE TAKE NOTICE that I have today filed with the Illinois Pollution Control Board Midwest Generation’s Questions for Illinois EPA’s Witness Scott Twait, a copy of which is herewith served upon you.

Dated: June 24, 2013

MIDWEST GENERATION, L.L.C.

By: /s/ Susan M. Franzetti
One of Its Attorneys

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ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
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WATER QUALITY STANDARDS AND) **R08-9 Subdocket D**
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)

**MIDWEST GENERATION'S QUESTIONS FOR
ILLINOIS EPA'S WITNESS SCOTT TWAIT**

Midwest Generation, L.L.C. ("Midwest Generation" or "MWGen"), by and through its attorneys, Nijman Franzetti LLP, submits the following questions based upon the Pre-filed Testimony of Scott Twait, submitted on behalf of the Illinois Environmental Protection Agency. Midwest Generation requests that the Hearing Officer allow follow-up questioning to be posed based on the answers provided.

QUESTIONS

I. THERMAL BACKGROUND TEMPERATURES

1. On page 8 of your pre-filed written testimony, you state that: "USEPA commented that they believed that the background station that the Agency picked (Chicago Sanitary & Ship Canal – Route 83) was not representative of the background temperature of the system. In discussions with USEPA, the Agency agreed to use the less impacted station (Cal-Sag Channel – Route 83)." Based on the discussions with the USEPA referenced in this portion of your testimony, please explain the reason(s) it was concluded that the Cal-Sag Channel – Route 83 was a "less impacted station" than the Chicago Sanitary & Ship Canal – Route 83 station?
2. Did the Agency consider whether the closure of the Fisk and Crawford stations has any effect upon the selection of Cal-Sag Channel – Route 83 as the closest, "less impacted station"?
3. On page 8 of your pre-filed written testimony, you state that: "The evaluation of the data revealed that the use of the 75th percentile data for the period average resulted in violations of the data from the background station. Therefore, the Agency has proposed

using the 90th percentile of the temperature from the background station as the period average.”

- (a) What is “the data,” including the time period represented by that data, which you are referring to in your statement that using the 75th percentile data for the period average resulted in violations of the data from the background station? For example, during the March 11, 2008 UAA rule-making hearing (see Hearing Transcript 3/11/08 at p. 259), you testified that the MWRDGC data used to determine background concentrations was data provided by the MWRDGC for the period 1998-2004, is that still the same MWRDGC data to which your written testimony is referring?
 - (b) During your March 11, 2008 UAA rule-making hearing testimony, you testified that you had not broken out the MWRDGC data into the periods covered by the proposed Period Average thermal standards to review whether or not there would be compliance with the proposed Period Averages that were based on the 75th percentile data (see Hearing Transcript 3/12/08 at pp. 47-51), have you since done this type of review of the data and if so, what did it show?
 - (c) During your March 11, 2008 UAA rule-making hearing testimony, you testified that you did not know how much the temperature of the MWRDGC’s discharges vary from year to year. Have you since reviewed the MWRDGC’s data to determine the extent of thermal variation and, if so, please describe the results of your review.
 - (d) Please explain what you mean by the phrase “violations of the data”? For example, does this include that one or more point source industrial discharges would have exceeded the 75th percentile data for the period average and if so, identify the discharger(s).
4. On pages 8-9 of your pre-filed testimony, you state that: “[t]he thermal standards for the monthly average for the non-summer months is based on the least restrictive of the 75th percentile of the temperatures from the MWRDGC effluent and the 90th percentile of the temperature from the Cal-Sag Channel – Route 83 station. Consequently, the Agency used the effluent temperature from MWRDGC’s North Side, Calumet and Stickney facilities as the background temperature instead of using temperatures at the Cal-Sag Canal-Route 83 station during the periods of the non-summer months when the effluent temperature was higher than the background temperature. These periods were January, February, September 16-30, October, November, and December.”
- (a) Was the purpose of using the MWRDGC’s effluent temperature as the background temperature on which to establish the proposed thermal period average temperatures during these non-summer month periods, instead of using the Cal-Sag Channel – Route 83 station temperatures, to avoid proposing period average standards that the MWRDGC’s discharges would likely violate during these non-summer month periods?

- (b) Please explain how this approach of using a municipal discharger's effluent temperatures in setting thermal water quality standards is consistent with the Clean Water Act?
 - (c) Please explain your basis for interpreting the Clean Water Act's provisions to allow a municipal discharger's effluent temperatures to serve as the background temperature for purposes of establishing thermal water quality standards but does not allow the same approach for an industrial discharger's thermal discharges?
 - (d) Please explain how the approach of using the MWRDGC's effluent temperature as the background temperature on which to establish the proposed thermal period average temperatures ensures that the proposed period average thermal standards are protective of aquatic life in the receiving waters?
5. Please explain the difference in the percentage of flow in the Chicago Sanitary & Ship Canal represented by the MWRDGC's Stickney Plant discharge between the "summer months" and the "non-summer months," as those terms are used in your written testimony and the Agency's proposed thermal standards.
6. Please explain how the Agency arrived at the thermal proposal for the non-summer months to use "the least restrictive of the 75th percentile of the temperatures from the MWRDGC effluent and the 90th percentile of the temperature from the Cal-Sag Channel – Route 83 station."
- (a) Why use only the 75th percentile of the temperatures from the MWRDGC effluent instead of using the higher 90th percentile as the Agency did for the Cal-Sag Channel – Route 83 station for purposes of this comparison?
 - (b) Please explain why the 90th percentile, rather than a higher percentile, for the Cal-Sag Channel – Route 83 station was used for this comparison?
 - (c) Is there precedent from other states or in USEPA guidance documents to support the use of either of these percentiles?
 - (d) Did the Agency look at what the effect upon the proposed period average thermal standards values would be if it instead used higher percentile values from either the MWRDGC effluent data set or the Cal-Sag Channel – Route 83 station data set?
7. Why did the Agency only find it appropriate to use the selection process between the MWRDGC effluent temperatures and the Cal-Sag Channel – Route 83 station data only during the non-summer months and not during the summer months as well?
8. In his January 31, 2008 hearing testimony, the Agency's expert Christopher Yoder testified there are no biological data assessments that suggest that maintaining the normal seasonal cycle requires achieving background temps uninfluenced by man. (January 31, 2008 Hearing Transcript at p. 126). What evidence is the Agency relying on for its

position that higher temperatures than those proposed for the Period Averages during the non-summer months would inhibit gametogenesis or other functions of species likely to be resident during those periods?

9. Is it correct that the background temperatures at the Cal-Sag Channel – Route 83 and the MWRDGC effluent temperatures are the sole basis for determining the proposed Period Average thermal standards and that the proposed Period Average standards are not based on the use of either laboratory or field-derived thermal effects end points for aquatic species?
 - (a) Has the Agency compared its proposed Period Average standards to any laboratory or field-derived thermal effects studies for the types of aquatic species that the Use A or Use B use designations are intended to protect to consider whether or not the proposed Period Averages may be more stringent than necessary to protect the species present or expected to be present in Use A and Use B-designated waters?
 - (b) For example, has the Agency compared the proposed Period Average standards to any data or studies regarding temperature endpoints for growth, such as the “mean weekly average temperature for growth” (MWAT) that Mr. Yoder testified about in this rulemaking as a reasonable temperature which allows species to still be able to grow and thrive?

II. THERMAL PERIOD AVERAGE STANDARDS

10. On page 8 of your pre-filed written testimony, you state that: “USEPA commented that they had concerns with our proposed language, ‘...shall not exceed the period average limits in the following table during any period on an average basis.’ It was agreed that the language was not clear. The Agency has proposed to remove the last phrase “on an average basis.”
 - (a) The Agency’s May 24, 2013 Motion proposed to remove the last phrase “on an average basis” from section 302.408(b) for Aquatic Life Use A, but did not propose to remove this same phrase from section 302.408(c) for Aquatic Life Use B. Was this an inadvertent omission on the Agency’s part and the phrase “on an average basis” it is also proposing this phrase for deletion in 302.408(c)?
 - (b) What was the intended meaning of the now proposed for removal language “on an average basis”?
 - (c) Without the proposed phrase “on an average basis,” the language of sections 302.408(b) and (c) would provide that the ambient water temperature in the subject Aquatic Life Use A and B waters “shall not exceed the period average limits in the following table during any period.” Is it the intent of this language that where the period average is exceeded during any time in the period covered in the table, it would constitute a violation? For example, taking the month of January, where the

proposed period average is 54.3°F for the entire month, if as of January 15, a thermal discharger's average effluent discharge temperature is 55.0°F, is that discharger in violation of the period average water quality standard or do you need to wait until January 31st to calculate the discharger's average effluent discharge temperature for the entire month of January in order to determine if a violation of the January period average has occurred?

11. With regard to a thermal discharger's efforts to comply with the Period Average standards, does the Agency appreciate that because the discharger cannot predict or control the temperature of the receiving water upstream of its intake, that the use of Period Averages, particularly Period Averages that cover an entire month, may require a discharger to reduce the temperature of its discharge to several degrees below the Period Average to ensure that as the month continues, if receiving water temperatures rise, it can still remain in compliance?
 - (a) Given the difficulties in accounting for changes in the river temperature as a given month continues, would the Agency consider including in the Period Average standard an "excursion hour" concept that would provide some protection for thermal dischargers who use the receiving water as their intake water when there is a significant change in the temperature of the receiving water in the second half of a month versus the first half of a month?
12. How will a discharger be required to monitor for compliance with the period average thermal standards and use that monitoring data to determine compliance? For example, does the Agency intend to require continuous, daily or less frequent monitoring and, depending upon which frequency of monitoring is required, please explain how that data is to be used to calculate the average thermal discharge temperature for purposes of determining compliance with the period average?

III. DAILY MAXIMUM STANDARDS

13. In Mr. Yoder's January 31, 2008 hearing testimony, he testified that the choice of whether to apply a daily maximum thermal standard as an instantaneous maximum never to be exceeded or instead as a daily average value is "up to the people that convert these into standards." (January 31, 2008 Hearing Transcript at p. 105) Did the Agency consider proposing daily maximum average values instead of instantaneous daily maximum standards and if so, please describe how the Agency considered this issue?

IV. THERMAL EXCURSION HOURS

14. Section 302.408(a) provides for both excursion hours up to 2% of the hours in the 12-month period ending with any month and a maximum exceedance during those excursion hours of not more than 2°C or 3.6°F. Is it intended that the excursion hour provision apply to both the period average standards and the daily maximum standards or to only

the daily maximum standards? If it applies to both, how does one calculate the “two percent of the hours” part of this provision to the period average standard?

V. COLD SHOCK

15. In new section 302.408(d), the Agency has proposed the following “cold shock” provision: “Water temperatures of discharges to the CAWS Aquatic Life Use A Waters and CAWS and Brandon Pool Aquatic Life Use B Waters shall be controlled in a manner to protect fish and aquatic life uses from the deleterious effects of a cold shock.”
 - (a) On page 9 of your pre-filed written testimony, you state that this provision is in response to a USEPA comment “that they thought that the Agency should protect aquatic life from cold shock.” You go on to state that: “To the Agency’s knowledge, this system has not had trouble with fish kills due to cold shock.” In your discussions with the USEPA, did you discuss the absence of any Illinois EPA knowledge of trouble with fish kills due to cold shock and if so, please describe the contents of that discussion.
 - (b) In the absence of any information indicating that cold shock has occurred in the CAWS or the Brandon Pool, what is the justification for including this provision in the regulations?
16. Isn’t the risk of cold shock limited to the colder periods of the year? If so, did the Agency consider limiting the application of the proposed cold shock rule to the colder months of the year?
17. In the winter months of January, February and March, if a discharger maintains compliance with both the Daily Maximum standard that is 90.3°F on a given day, but then drops its discharge temperature below the approximately 53 or 54° F Period Average thermal standard the next day in order to seek to maintain compliance with the Period Average, is the discharger protected from being in violation of the cold shock rule provided that it maintains compliance with both the Daily Maximum standard and the Period Average standard?
18. Per the proposed cold shock language, how does a thermal discharger control the water temperatures of its discharge “in a manner to protect fish and aquatic life uses from the deleterious effects of a cold shock”?
19. What does the language “deleterious effects” of a cold shock mean?
 - (a) What is the difference between “deleterious effects” on fish versus on “aquatic life uses” as also referenced in this proposed language?
 - (b) What criteria will be used to determine whether a discharger failed to control its discharge so as to prevent the “deleterious effects” of cold shock?

- (c) Why did the Agency choose not to provide a description or definition of the term “deleterious effects”?
20. On page 9 of your pre-filed written testimony, you state that: “the Agency has proposed a narrative standard that was developed from language that has been adopted in Wisconsin. See WI NR § 102.28”. Why did the Agency decide to use the Wisconsin regulation as a basis for its proposed narrative standard? Did the Agency look at any other state’s cold shock standard and if so, which state or states and why did it decide that Wisconsin’s standard was the preferable one to use as a basis for the Illinois standard?
- (a) On pages 9-10 of your pre-filed written testimony, you state that: “The Agency intends to interpret this standard in a similar manner as explained by Wisconsin in development of its cold shock standard.” Please identify and produce any written documents that contain the referenced Wisconsin explanation.
- (b) When did Wisconsin adopt the cold shock provision on which the Agency’s proposed rule is based and has Wisconsin had any experience with applying its cold shock standard?
21. The proposed rules do not appear to contain any definition of the term “cold shock”. Why does the Agency believe that such a definition is unnecessary?
22. In the USEPA’s 1992 report, entitled “Review of Water Quality Standards, Permit Limitations, and Variances for Thermal Discharges at Power Plants,” it was concluded that: “Guidance also needs to be developed on cold shock, especially for older peak power facilities, which operate part time. Cold shock guidance may include parameters for controlled temperature decreases during unit shutdown and control mechanisms to restrict fish from the discharge channel.” Does the Agency agree that since 1992, the USEPA has not developed any guidance on cold shock?
- (a) During its discussions with Region 5 concerning the Region’s belief that a cold shock provision should be included in the Agency’s proposed thermal water quality standards, was there any discussion regarding postponing the adoption of cold shock regulations until the U.S. EPA has issued guidance on cold shock as recommended in the U.S. EPA’s 1992 report?
23. Did you consider the alternative of providing in the proposed rule for a maximum allowable temperature difference between the temperature of a discharger’s effluent and the temperature of the receiving water as a means of prohibiting cold shock instead of the narrative standard proposed by the Agency?
24. Does the Agency agree that the likelihood of cold shock is driven by site-specific considerations such as the type of facility discharging the thermal effluent and the nature of the receiving water body? If so, would the Agency consider revising the proposed cold shock provision to apply only when an evaluation of the discharger and discharge conditions indicates that there is a likelihood for cold shock occurring? Or alternatively,

revising the proposed cold shock provision to provide that the Agency has the authority to include in NPDES permits provisions for protecting against cold shock when appropriate based on site-specific conditions?

25. On page 10 of your pre-filed written testimony, you state that: "This standard is not intended to be applied to emergency shut downs, however, all efforts should be made through general operational planning to avoid an emergency action that would cause cold shock." If this standard is not intended to be applied to emergency shut downs, is the Agency amenable to including language in this standard which expressly states that it does not apply to emergency shut downs? Alternatively, is the Agency amenable to including language in this standard which expressly states that it only applies during normal operating conditions?

VI. UDIP PROPOSED GENERAL USE THERMAL STANDARDS

26. Given the Agency's prior belief that the UDIP was capable of "minimally attaining" the General Use standards, are there any parameters which the Agency has concerns may not be attainable in the UDIP?
27. Please explain the reason or reasons why the Agency decided to revise its proposed thermal standards for the Upper Dresden Island Pool (UDIP) to propose the General Use thermal standards in lieu of the Agency's previously proposed thermal standards.
28. In section 302.211(d) of the General Use thermal standards, it provides in relevant part for a prohibition against a "maximum temperature rise above natural temperatures of more than 5 degrees F." Please explain whether the Agency has considered how this provision would apply to the Upper Dresden Island Pool if adopted by the Board, including but not limited to, how the "natural temperatures" of the Upper Dresden Island Pool are to be determined for purposes of determining compliance with the prohibition against a temperature rise of more than 5 degrees F?
- (a) Is it the Agency's position that there is such a thing as a "natural temperature" for an effluent dominated waterbody like the UDIP?
- (b) Does the Agency have any data or other information to provide concerning what the "natural temperatures" are for the UDIP?
- (c) What type of data would be necessary to determine what the "natural temperatures" are for the UDIP?
- (d) Has the Agency considered that for a once-through cooling water system like those at MWGen's Joliet Stations, it is not uncommon for the discharge temperature to be more than 5° F higher than the intake temperature? If so, would this temperature rise from intake to discharge constitute a violation of this provision of the General Use standards if they become applicable to the UDIP? If there is an allowed mixing zone

for the discharge, is it correct that this temperature rise provision would apply at the edge of a mixing zone and not at the discharge outfall?

- (e) Would the Agency consider revising its proposed UDIP thermal standards to exclude this provision of the General Use thermal standards?
29. In section 302.211(b) of the General Use thermal standards, it provides in relevant part for a prohibition against a "abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions." Please explain whether the Agency has considered how this provision would apply to the Upper Dresden Island Pool if adopted by the Board.
- (a) What is the Agency's understanding of the intended meaning of "natural conditions" as used in section 302.211(b)?
- (b) Please provide examples of what would constitute "natural conditions" for the UDIP?
- (c) As applied to the UDIP, is the intent that the meaning of the phrase "abnormal temperature changes" will not include temperature changes that may be "abnormal" for other Illinois surface waters but which have been characteristic of the UDIP based on historical data?
30. In section 302.211(c) of the General Use thermal standards, it provides in relevant part that "normal daily and seasonal temperature fluctuations which existed before the addition of heat due to other than natural causes shall be maintained." Please explain whether the Agency has considered how this provision would apply to the Upper Dresden Island Pool if adopted by the Board.
- (a) What are the "normal daily and seasonal temperature fluctuations for the UDIP which existed before the addition of heat due to other than natural causes?"
- (b) Does the Agency have any data or other information to provide concerning what these normal temperature fluctuations are for the UDIP?
- (c) Would the Agency consider revising its proposed UDIP thermal standards to exclude this provision of the General Use thermal standards?

VII. COMPLIANCE PERIOD

31. In your January 28, 2008 hearing testimony, you testified in response to a question about what would be a reasonable time to delay the effective date of these standards that an appropriate amount of time could be somewhere more than a year and less than 30. (January 28, 2008 Hearing Transcript at p. 230) Since then, has the Agency given any further consideration to what would be a reasonable time to delay the effective date of these proposed thermal standards?

CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that a true copy of the foregoing Notice of Filing and Midwest Generation's Questions for Illinois EPA's Witness Scott Twait was filed electronically on June 24, 2013 with the following:

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and that true copies were mailed by First Class Mail, postage prepaid, on June 24, 2013 to the parties listed on the foregoing Service List.

/s/ Susan M. Franzetti