

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	
WATER QUALITY STANDARDS AND)	
EFFLUENT LIMITATIONS FOR THE)	R08-09 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
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James R. Thompson Center	
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Chicago, IL 60601	

PLEASE TAKE NOTICE that I have today filed with the Illinois Pollution Control Board, Midwest Generation, L.L.C.'s Comments on the Illinois Pollution Control Board's First Notice and Opinion in Subdocket D, a copy of which is herewith served upon you.

Dated: November 21, 2014

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CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that a true copy of the foregoing Notice of Filing and Midwest Generation, L.L.C.'s Comments on the Illinois Pollution Control Board's First Notice and Opinion in Subdocket D were filed electronically on November 21, 2014 with the following:

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

and that true copies were mailed by First Class Mail, postage prepaid, on November 21, 2014 to the parties listed on the foregoing Service List.

/s/ Susan M. Franzetti

ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	
WATER QUALITY STANDARDS AND)	R08-09 Subdocket D
EFFLUENT LIMITATIONS FOR THE)	(Rulemaking-Water)
CHICAGO AREA WATERWAY SYSTEM)	
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PROPOSED AMENDMENTS TO 35 ILL.)	
ADM. CODE 301, 302, 303, AND 304)	

MIDWEST GENERATION, LLC'S COMMENTS ON THE ILLINOIS POLLUTION CONTROL BOARD'S FIRST NOTICE AND OPINION IN SUBDOCKET D

In its September 18, 2014 First Notice Opinion and Order in Subdocket D (“First Notice Opinion”), the Illinois Pollution Control Board (the “Board”) proposes to adopt General Use thermal water quality standards for the Chicago Area Waterway System (“CAWS”) and the Lower Des Plaines River (“LDPR”), including the “Chicago Area Waterway System and Brandon Pool Aquatic Life Use B” (“ALU B”) waters and the Upper Dresden Island Pool Aquatic Life Use waters (“UDIP”), where Midwest Generation, L.L.C. (“Midwest Generation”) operates three power stations. The Board’s proposed adoption of the General Use thermal standards will significantly impact the future operations of the three Midwest Generation facilities located on these waters. Midwest Generation submits these comments on the Board’s First Notice Opinion to explain why the Board should not adopt the General Use thermal standards for these waters and instead should adopt either of the two EA Engineering (“EA”) thermal standards proposals, both of which are scientifically sound and protective of these waters. Alternatively, for the UDIP, the Board should further consider the adoption of the AS 96-10 adjusted thermal standard (the “AS 96-10 Standard”) which has proven to be protective of the General Use waters located below the I-55 Bridge for over 15 years. If, however, the Board adopts the AS 96-10 Standard, the overly restrictive AS 96-10 Standard should be further modified to apply the numeric temperature limits as daily average values and not instantaneous daily maximum limits.

Midwest Generation also responds to the Board’s invitation to comment on specific questions posed in the First Notice Opinion related to the proposed thermal standards in an effort

to assist the Board's final determination of those issues. These issues include cold shock, excursion hours and the proposed 18-month postponement of the thermal standards' effective date. Midwest Generation agrees with the Board that a cold shock provision is not necessary for these waters and that an excursion hours provision is justified, but that it should be the excursion hour provision contained in the AS 96-10 Standard, as this standard has proven effective to protect General Use waters below the I-55 Bridge. Unless the Board adopts one of the EA thermal standards proposals, Midwest Generation advocates the creation of a new subdocket to address the proper thermal standards for these UAA waters, rather than applying General Use standards by default. Alternatively, if the Board adopts the General Use thermal standards, then Midwest Generation submits that a postponement of their effective date must cover a period of *at least* three years in order to protect thermal dischargers from the substantial prejudice that the adoption of the General Use thermal standards will cause.

Midwest Generation appreciates the Board's willingness to consider additional comment on the thermal issues addressed in its First Notice Opinion.

I. Introduction

Within the past year, Midwest Generation has gone through a change of ownership and plans have recently been announced for operational changes in its three affected facilities. In Midwest Generation's April 30, 2014 Post-Hearing Comments in Subdocket D, it informed the Board that on April 1, 2014, NRG Energy, Inc. ("NRG"), acquired certain of the subsidiaries of Edison Mission Energy, including Midwest Generation.¹ As reported in the press on August 14, 2014, NRG announced plans for operational changes at its Will County station and at its Joliet stations, Joliet 9 and 29.² (The Will County station discharges to the CSSC, while the Joliet stations discharge to the UDIP.) NRG announced that it would be closing Unit 3, one of the two coal-fired units in operation at the Will County Station.³ The other, Unit 4, will continue to run.

¹ See PC1403 at p. 1.

² The Joliet Stations are sometimes referred to by their unit numbers. Joliet 9 is the same as "Joliet Unit 6" and Joliet 29 is the same as "Joliet Units 7 & 8." See Ex. 364 at 2-3.

³ See, e.g., <http://www.powermag.com/nrg-to-shutter-repower-illinois-coal-units-in-modernization-bid/> (last checked 10/17/14). These and other changes planned for the Midwest Generation Powerton and Waukegan Stations represent a \$567 million investment by NRG that will reduce overall carbon dioxide emissions by at least 16 million tons annually by 2020 and equal more than half of Illinois' carbon dioxide reduction goal called for by President Obama's proposed carbon pollution standards. *Id.*

NRG also announced that it would be bringing natural gas to its Joliet Stations by mid-2016.⁴ NRG's plans for the Will County and Joliet stations, all of which utilized once-through cooling water to operate, will likely reduce their thermal discharges. Nevertheless, Midwest Generation still faces significant challenges to comply with the proposed General Use thermal standards contained in the Board's First Notice Opinion, as further explained below. Accordingly, the operations at the three Midwest Generation stations will be significantly affected by how the Board decides the thermal standards issues in this rulemaking.

It bears mentioning that the Board's its First Notice Opinion provides an extensive review of the record and laid out its reasoning, including its reasons for how it treated the proposals offered by rulemaking participants. .. Midwest Generation acknowledges and appreciates the Board's diligent efforts, particularly its explanation of how it reached decisions on the thermal standards issues and the identification of specific issues needing further comment. Knowing the underlying reasons for the Board's findings and conclusions in its First Notice Opinion helped Midwest Generation focus its concerns about the Board's reasoning.

The Board proposes to adopt General Use thermal water quality standards for both the ALU B and UDIP waters explaining that the application of General Use thermal standards to these lesser aquatic life use designated waters is appropriate "due to the lack of viable alternative options."⁵ The Board considered the several alternative options presented by Midwest Generation, such as the 2003 and 2007 EA Thermal Proposals and the AS 96-10 Adjusted Thermal Standards, but expressed concerns regarding each alternative.⁶ The Board also announced its intention to consider modifying the proposed thermal standards for specific dischargers based on site-specific conditions and provided an 18-month postponement of the effective date for the proposed General Use thermal standards.⁷ In the interim, the Board encouraged the Illinois EPA to address the General Use thermal standards in its next triennial review.⁸ A fundamental problem with the Board's proposed application of General Use thermal standards to the ALU B and UDIP waters is that these standards were never intended to apply to these low-quality, effluent-dominated, waters which do not and cannot support the higher full

⁴ *Id.*

⁵ First Notice Opinion at p. 211.

⁶ *Id.* at pp. 205 to 210.

⁷ *Id.* at pp. 212, 216-217.

⁸ *Id.* at p. 214.

aquatic life use protected by the General Use standards. Applying the General Use thermal standards “by default” to these waters immediately subjects thermal dischargers like Midwest Generation to a thermal compliance standard that is unnecessarily stringent and economically punitive. Midwest Generation should not be compelled to seek relief standards that were never intended to be applied to non-General Use waters like the ALU B and UIDP. Particularly after all the years of effort and attention that have been devoted to this proceeding, defaulting these standards ignores both the purpose and intent of the Clean Water Act’s water quality standards.

There are scientifically sound, better-reasoned, and fairer ways to address the thermal standards issue for ALU B and UDIP waters than defaulting to an overly restrictive standard. They include the EA 2003 and 2007 Thermal Proposals and the AS 96-10 Adjusted Standards as described in Midwest Generation’s Post-Hearing Comments. While the Board’s First Notice Opinion identified certain concerns associated with the adoption of each of these alternatives, these comments will explain and demonstrate why its concerns can be set aside.

Otherwise, if the Board still has concerns about selecting an alternative approach, it should not simply throw up its hands and default to the General Use thermal standards. If the Board concludes that the Subdocket D record does not provide a viable thermal standard option, then the Board should proceed to create a new subdocket for the ALU B and UDIP waters thermal standards issues and allow interested parties to present new testimony and information in support of appropriate thermal standards. The creation of a subdocket provides the means to address the Board’s concerns through the presentation of additional expert witness testimony and other technical information. The Board has acknowledged that the methodology underlying the EA thermal proposals seems to have merit but notes the Agency’s contention that these proposals were not vetted through witness cross-examination during the Subdocket D hearings.⁹ Midwest Generation acknowledges that it missed the opportunity to present witness testimony in support of these proposals during its then pending bankruptcy proceeding. Midwest Generation can proceed to do so if the Board decides to open a subdocket. The absence of Subdocket D witness

⁹ As discussed further below, the Agency’s contention ignores the fact that the 2007 EA Thermal Proposal was vetted by one of the leading thermal experts in the nation – Dr. Charles Coutant. The Agency declined Midwest Generation’s prior requests in 2003 and 2007 to review them, and continued to do so even after the 2008 hearings in this rulemaking revealed the significant deficiencies in the Agency’s thermal standards proposal. Given the Agency’s lack of interest in either of these thermal proposals, its belated and suspect contention that it would have evaluated them if Midwest Generation had only put forth Subdocket D expert witness testimony in further support of them should not be given any weight by the Board.

testimony in support of the EA 2003 and 2007 Thermal Standards Proposals should not cause the Board to deny any opportunity to examine them in greater detail in a new subdocket, particularly if the only alternative the Board is willing to adopt is the default application of General Use thermal standards.

The Board has also expressed concern that the existing biological data introduced by Midwest Generation in this proceeding may be too old or, alternatively, skewed by existing thermal discharges. Midwest Generation will explain further below why these concerns should be dismissed. But, if the Board still believes that existing biological data does not provide an adequate basis for adopting one of the alternative Midwest Generation's thermal standards proposals, then the creation of a subdocket can provide the additional time necessary to collect and present for the Board's review additional data in support of the adoption of thermal standards that are adequately, but not overly, protective of these waters.

Midwest Generation appreciates the Board's decision to postpone the effective date of the General Use thermal standards for 18 months; this will allow adversely affected dischargers to seek appropriate regulatory relief from those standards. But based on several of the Board's comments in its First Notice Opinion, an 18-month postponement is not likely to adequately address the compliance problems. The Board's First Notice Opinion comments include statements indicating that Midwest Generation's existing biological data on these waterways may not alone be sufficient to support a request for alternative thermal relief; the data is either too old or, alternatively predates changes along the waterway, including the closure of the Fisk and Crawford Stations. Thus, it is likely that Midwest Generation will need to conduct further in-stream biological studies to collect additional data before it can prepare and file a petition for site-specific relief. Such in-stream studies usually take well more than a year to design and to complete. Further, it is unclear whether, and to what extent, the existing regulatory issues surrounding variances from water quality standards, as cited in the Board's First Notice Opinion, will affect a future petition for a thermal variance under Section 316(a) of the Clean Water Act.¹⁰ There is no binding commitment from either the U.S. EPA or the Illinois EPA to provide the necessary clarifications by any date certain. For these reasons, as more fully explained below, the Board needs to further extend any postponement of the adoption of thermal standards for the

¹⁰ First Notice Opinion at pp. 216-217.

ALU B and UDIP waters to a period of at least three years. The postponement should run from either the effective date of the rule or the date on which the U.S. EPA and Illinois EPA submit to the Board the necessary clarifications of the applicable requirements for water quality standards variance relief, whichever occurs later.

Regardless of whether the Board adopts any of the above-described alternative suggested pathways, the Board must modify the overly protective and stringent General Use thermal standards it proposes for the ALU B or UDIP waters. One means to accomplish this is to modify the 90° F and 60° F daily maximum General Use numeric standards to maximum daily average standards. There is no reliable evidence showing that such instantaneous daily maximum standards are necessary to protect the aquatic life expected to inhabit these waters. Converting these numeric standards to daily average values at least provides thermal dischargers with a potential means to control their discharges so as not to exceed these values on a daily basis, including at the edge of any allowed mixing zone. Aquatic life is adequately protected by the application of a daily average standard because any exceedance of the 90° F/60° F values would not last more than a handful of hours in a single day. The evidence previously presented to the Board in this proceeding shows that such short-term avoidance is reasonably within the normal and expected avoidance behavior of fish and does not jeopardize their welfare.

II. WHY THE GENERAL USE THERMAL STANDARDS SHOULD NOT BE APPLIED TO THE ALU B AND UDIP WATERS.

A. Applying the General Use Thermal Standards to ALU B and UDIP Waters Conflicts with Existing Illinois Use Designation Regulations.

Midwest Generation recognizes that the Board resorted to the General Use thermal water quality standards option because it did not perceive there to be another viable option. The Board did not select the Agency's or the Environmental Groups' proposed thermal standards based on concerns about (1) their underlying methodology and (2) their being more stringent than the General Use standards.

Yet the Board would apply the General Use standards to waters incapable of supporting the higher level of aquatic life that the standards were intended to protect.¹¹ The Board concluded that adopting either the Agency's or the Environmental Groups' recommended

¹¹ *Id.* at pp. 204-205.

thermal standards would set an untenable precedent for any review of the current General Use standards because the proposed standards are based on questionable methodology.¹² The Board expressed its preference that any revision of the existing thermal water quality standards must start with the General Use standards because this approach would allow a systematic development of temperature standards based on the degree of protection dictated by the designated aquatic life uses.

The Board's preference that revisions to the Illinois thermal water quality standards should start with the General Use standards is understandable and logical. At the same time, the solution is not to extend the scope of the "default" application of General Use thermal standards to the lower quality ALU B and UDIP waters to which they never were intended to apply. By applying the General Use thermal standards to the lower quality ALU B and UDIP waters, the Board reaches the same illogical conclusion that it sought to avoid under the Agency's proposed, more stringent thermal standards.

In the Illinois designated use classification system, 35 Ill. Adm. Code Part 303, the General Use category is a broad aquatic life use that protects water bodies capable of supporting all aquatic life, as well as all recreational uses. There is no differentiation among aquatic communities or the physical characteristics of a water body within the General Use thermal standards. Section 303.201 of the Water Use Designations regulations provides that unless a water body has been "otherwise specifically" classified, all Illinois waters are General Use waters by default. 35 Ill. Adm. Code §303.201. Here, the ALU B and UDIP waters have been "otherwise specifically" classified. The Board adopted specific use designations for these waters in Subdocket C of this rulemaking.

The ALU B and UDIP use designations expressly recognize that these waters cannot support the more thermally sensitive aquatic organisms which are or are expected to be present in General Use waters. By definition, the General Use thermal water quality standards are more protective and stringent than necessary to protect the more limited aquatic life expected to be present in ALU B and UDIP waters. Thus, the Board's proposed approach is not supported by and conflicts with the Illinois Part 303 use designation regulations in 35 Ill. Adm. Code.

¹² *Id.* at p. 205.

In Subdocket C of this rulemaking, the Board considered and rejected the approach of designating the UDIP a General Use water.¹³ In the Subdocket C First Notice Opinion, in which the Board proposed applying the General Use designation to the UDIP, the Board expressly recognized that the water quality standards for temperature may need to be adapted for the UDIP.¹⁴ The Board instead adopted a UDIP-specific aquatic life use designation that recognizes the UDIP cannot support an aquatic life population that is of the same high quality as a General Use water. It would be arbitrary and scientifically unsound to apply the General Use thermal standards to waters which have not been classified as General Use waters.

Applying General Use thermal standards to the ALU B CSSC and Brandon Pool waters would be an even stranger outcome. Section 303.235(b)(2) expressly provides that ALU B waters “are not capable of attaining an aquatic life use consistent with the section 101(a)(2) of the Clean Water Act goal (33 USC 1251(a)(2)).” General Use waters are capable of achieving the Clean Water Act’s aquatic life use goal. Section 303.235(b)(1) expressly provides that ALU B waters are only “capable of protecting aquatic life populations predominated by individuals of tolerant types.”¹⁵ “Tolerant types” includes aquatic life that can “tolerate” thermal conditions that would be inhospitable to some General Use aquatic life populations. In other words, the aquatic-life populations present, or that could be present, in the ALU B waters are less thermally sensitive than the species used in developing the General Use thermal standards.

The Board’s proposed “default” approach to establishing thermal water quality standards is not consistent with the procedures for establishing water quality criteria. Water quality criteria are developed to protect the designated uses of waters. The Board’s proposed approach ignores the designated uses of the ALU B and UDIP waters. Section 303(a) of the Clean Water Act

¹³ See February 6, 2014 Final Order, R2008-09(C), at pp. 1-2.

¹⁴ Opinion and Order, First Notice in Subdocket C, *In the Matter of Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304*, R08-09(C) at p. 221 (hereinafter “Subdocket C First Notice Opinion”).

¹⁵ See 38 Ill. Reg. 5517 (Feb. 28, 2014) (emphasis added). The full text of Section 303.235(b) provides as follows: “Waters designated as Chicago Area Waterway System Aquatic Life Use A Waters are capable of maintaining, and shall have quality sufficient to protect, aquatic-life populations predominated by individuals of tolerant and intermediately tolerant types that are adaptive to the unique physical conditions, flow patterns, and operational controls necessary to maintain navigational use, flood control, and drainage functions of the waterway system. Such aquatic life may include, but is not limited to, fish species such as channel catfish, largemouth bass, bluegill, black crappie, spotfin shiner, orangespotted sunfish, common carp, and goldfish.”

requires that the Board review and revise water quality criteria based on appropriate science.¹⁶ The Board's approach is not based on appropriate science.

The Board seems to envision that the application of General Use thermal standards to the ALU B and UDIP waters will be temporary until the Agency has reviewed and perhaps revised the General Use thermal standards. But given the multi-year effort behind the Agency's thermal standards proposal here, it is probable that the Agency will not complete a review of the standards for several more years. Updating the standards will take additional time. In the meantime, ALU B and UDIP thermal dischargers may be confronted by further consequences due to the inability of these waters to attain the General Use thermal standards. Specifically, Section 303(d) of the Clean Water Act requires "[e]ach State shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters."¹⁷ For waters so identified, States must establish "the total maximum daily load, at a level necessary to implement the applicable water quality standards...."¹⁸ The proposed adoption of the General Use thermal standards creates a substantial risk that a "total maximum daily load" or "TMDL" would need to be established for ALU B or UDIP waters, leading to greater restrictions on thermal discharges in the NPDES Permits issued to Midwest Generation and other thermal dischargers to these waters.¹⁹

Because the default application of the General Use thermal standards is inconsistent with both the Illinois use designation regulations and the Clean Water Act, the Board should not proceed to adopt these standards. Further, the adoption of the General Use thermal standards threatens to impose arbitrary and unreasonable burdens on thermal dischargers to these waters because the General Use thermal standards are overly protective of, and are not reasonably attainable in these waters.

¹⁶ Clean Water Act, § 303(a); 33 U.S.C. § 1313(a).

¹⁷ Clean Water Act, § 303(d)(1)(A), 33 U.S.C. § 1313(d)(1)(A).

¹⁸ *Id.* at § 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C).

¹⁹ *See* Clean Water Act, § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C) (requiring achievement of "any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations (under authority preserved by section 1370 of this title) or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter"). *See also* 40 C.F.R. § 122.44(d)(1)(vii)(B); *Environmental Defense Fund v. Costle*, 657 F.2d 275, 294 (D.C. Cir. 1981).

B. General Use Thermal Standards Were Not Intended to, and Should Not, Apply to Effluent-Dominated Waters Like the ALU B and UDIP.

In the prior Subdockets A and C of this rulemaking, the Board accepted the undisputed fact that the CSSC, Brandon Pool and the UDIP are effluent-dominated waters, with the primary effluent source being the Water Reclamation District of Greater Chicago's ("MWRD") Stickney Water Reclamation Plant in the CSSC (the "MWRD Stickney Plant").²⁰ The Agency testified that "the [MWRD] effluent is the true background of this system. At times they are 100 percent of the flow."²¹ And the Board found in its Subdocket C First Notice Opinion that "the temperature of the effluents determines the base temperature of the river, more so than it having a natural temperature."²²

As a consequence of their effluent-dominated nature, and unlike other General Use waters, the "natural" thermal regime of these waters reflects seasonal changes primarily determined by the seasonal temperature of the effluent discharges. The result is unnaturally moderated temperatures that do not vary on a year-round basis to the extent that non-effluent dominated waters do because the MWRD Stickney Plant discharges tend to have a relatively constant, moderate temperature which dampens seasonal and diurnal changes.²³

Thus, while there are seasonal thermal changes, they are not like those in "natural" General Use waters. The "background" temperature of these waters, because they are predominantly determined by the MWRD Stickney Plant effluent discharges, will remain elevated during the winter and spring months.²⁴ And today, to the extent that either the Fisk and Crawford Station's thermal discharges may have contributed to the degree of elevated winter and spring ambient water temperatures, that is no longer the case. The stretch of the subject waterway downstream of the former Fisk and Crawford Stations and up to the MWRD Stickney Water Reclamation Plant ("Stickney WRP") discharge on the CSSC is purely an effluent-

²⁰ As explained in the EA 2003 Report (at p. 31), the thermal modeling analysis that was performed in the mid-1990's as part of the Upper Illinois Waterway study showed that the overall thermal regime of the waterway downstream of the MWRD Stickney Plant is influenced more by the temperature of that plant's effluent discharge than by any upstream temperatures, including the upstream thermal discharges from the Fisk and Crawford Stations (now discontinued).

²¹ Testimony of Scott Twait, 7/29/13 Hearing Transcript at p. 208.

²² Subdocket C First Notice Opinion at p. 38.

²³ EA 2003 Report at p. 30 (a copy of which was included as Attachment D to Midwest Generation's Post-Hearing Comments, R2008-09(D), for the Board's ease of reference).

²⁴ *Id.* at p. 32.

dominated waterway uninfluenced by any power plant thermal discharges. The Stickney WRP provides up to 100 % of the flow to the waterway during the winter months. Its discharge elevates temperatures above what would be found in a natural waterway during this time of year. The result is an altered thermal regime, regardless of the input of heat from Midwest Generation's plants.²⁵

The General Use thermal standards were never intended to apply to these effluent-dominated waters. Factor 3 of the Clean Water Act's Use Attainability Analysis regulation expressly allows the effluent-dominated nature of these waters to be considered in setting thermal water quality standards. UAA Factor 3 provides that "human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place." The existence of the MWRD Stickney Plant discharges and their thermal impact upon these waters obviously cannot be "remedied," and hence, their impact be ignored in selecting the applicable thermal standard.

The Board is proposing to create a thermal water quality standard for these waters which by their very nature cannot be consistently achieved and which the UAA regulations do not require. The conditions of an effluent-dominated waterway like the ALU B and UDIP waters are simply not contemplated by, nor reasonably subjected to, the General Use thermal standards.

III. THE EA 2003 and 2007 THERMAL PROPOSALS PRESENT VIABLE AND REASONABLE ALTERNATIVES TO THE PROPOSED ADOPTION OF GENERAL USE THERMAL STANDARDS FOR THE UDIP.

Midwest Generation appreciates the Board's review and consideration of the EA thermal proposals for the UDIP in its First Notice Opinion. Based on its review, the Board expressed a generally favorable view of the methodology which EA applied to these proposals but also noted some specific concerns. The Board's concerns included: (1) whether the EA proposals are protective of aquatic life expected to be present in UDIP waters; (2) the absence of walleye, white sucker or the most thermally sensitive species from these proposals; and (3) applying standards based on the existing thermal regime to waters being upgraded from an "Indigenous ALU" to the UDIP ALU. Midwest Generation addresses each of the Board's concerns below. Based on these responses, the Board should reasonably conclude that the 2003 or the 2007 EA

²⁵ *Id* at pp. 31-32.

Thermal Standards Proposals are more scientifically sound and better suited to the UDIP waters than applying the General Use standards.²⁶

A. The “Most Thermally Sensitive Species” Reasonably Expected to be Present in UDIP Waters Are Included in the EA Thermal Proposals.

The EA 2003 and 2007 Thermal Standards include the most thermally sensitive species reasonably expected to be present in the UDIP. Midwest Generation presents below a detailed review showing why the Board’s concern regarding the lack of inclusion of more thermally sensitive species is misplaced.

First, and most importantly for purposes of resolving the Board’s concern, the fish data on which the EA Thermal Proposals are based includes and takes into account not just data from the “thermally impacted” UDIP waters, but also years of fish data from the General Use waters located below the I-55 Bridge. The fish data from the portion of the Dresden Pool below the I-55 Bridge provides critically important in-stream fish data from an area in which ambient thermal conditions comply with the General Use thermal standards. Thus, if the thermal contributions from power plant discharges displace fish species from the UDIP, then there should be established populations of these fish present in the areas below the I-55 Bridge which meet the General Use thermal standards. If not, then the contention that such fish species are reasonably expected to be present in the UDIP and must be protected, is wrong.

More thermally sensitive fish species, such as white sucker and walleye, were not inappropriately excluded from the EA Thermal Standards. These species were properly excluded by EA after extensive analysis of the many years of fish collection data from areas below the I-55 Bridge where cooler General Use ambient temperatures prevail. The fish collection data showed that more thermally sensitive fish species like white sucker and walleye had not established resident populations in the General Use waters below the I-55 Bridge. As is the case for the UDIP, these species are not present in the General Use waters downstream of the

²⁶ The 2003 EA thermal standards proposal, entitled *Appropriate Thermal Water Quality Standards for the Lower Des Plaines River*, Jan. 23, 2003, Revised Oct. 13, 2003 (hereinafter “EA 2003 Report” or “EA 2003 Thermal Standards,”) was included in the attachments to the Agency’s October 26, 2007 Initial Filing, at Attachment A, Part 3, Appendix A,. The 2007 EA thermal standards proposal, entitled “Development of Biologically Based Thermal Limits for the Lower Des Plaines River,” August 2007 (hereinafter “EA 2007 Report” or “EA 2007 Thermal Standards”) were marked and introduced in this rulemaking as Exhibit 368 and another copy was attached for the Board’s convenience as Attachment C to Midwest General’s May 14, 2014 Comments..

I-55 Bridge because the habitat conditions which these fish need to establish viable populations are lacking. For this reason, the EA 2003 and 2007 Thermal Standards did not exclude thermally sensitive species which are reasonably expected to be present in the UDIP.

Turning first to the white sucker, the data presented in the EA 2003 Proposal demonstrates that the white sucker species is rare in the Lower Des Plaines River. As shown in Table 1E of the 2003 EA Thermal Standards Report, fish data collected over a nine-year period from 1994 to 2002 from the area of the Dresden Pool below the I-55 Bridge (the “Lower Dresden Pool”), where General Use standards apply and ambient temperatures are cooler than in the UDIP, only 11 white suckers were collected in the entire nine-year period.²⁷ The absence of the white sucker in the Lower Dresden Pool and the UDIP is due to the unfavorable habitat conditions, not due to thermal discharges. As explained in the EA 2003 Thermal Standards Report, the white sucker requires gravel/cobble areas with little or no siltation in which to spawn. Such areas are essentially absent in the Lower Des Plaines River. The white sucker is a somewhat thermally sensitive species. But its absence from the UDIP and Lower Dresden Pool is not due to thermal effluent discharges. It is due to the combination of lack of suitable habitat and the higher ambient background temperatures of this effluent-dominated system during the summertime.²⁸

The same is true for walleye, the other thermal sensitive fish species mentioned by the Board, and a number of other cool water species. EA specifically considered whether walleye is appropriately considered a “Representative Important Species” (“RIS”), not just for the UDIP, but for the entire Lower Des Plaines River.²⁹ Relying upon the findings of its habitat survey of the entire Dresden Pool (EA, May 2003), EA found that the habitats both upstream and downstream of the I-55 Bridge are similar. Therefore, if the higher temperatures in the UDIP were preventing species like walleye from being present, then walleye should have been able to establish viable populations in the cooler thermal conditions of the lower Dresden Pool.³⁰ However, walleye generally “spawn over clear cobble or rubble areas” although “some

²⁷ 2003 EA Report at pp. 41-42, and Table 1E.

²⁸ 2003 EA Report at pp. 41-42. See also Testimony of Greg Seegert, 11/9/09PM Hearing Tr. at p. 27.

²⁹ *Id.*

³⁰ *Id.* at p. 42.

populations can spawn in flooded, well-vegetated backwaters.”³¹ (Except for the small Brandon tailwaters area in the UDIP, both of these habitat types are rare throughout the Dresden Pool and also in the immediately downstream Upper Marseilles Pool, which is also a General Use water. (Id.) As shown in the nine years of fish survey data summarized in Tables 1E and 1F of the EA 2003 Thermal Proposal Report, only one walleye from the Lower Dresden Pool and one from the Upper Marseilles Pool were collected despite the existence of the cooler General Use thermal ambient conditions in these waters.³²

Nine years of fish collection data from the UDIP, the Lower Dresden Pool and the Upper Marseilles Pool should be sufficient to persuade the Board that walleye were properly excluded from EA’s Thermal Standards. But there is more evidence to support that finding. EA further evaluated whether walleye should be included by comparing the catch rates of walleye in these waters with those of both smallmouth bass and redhorse. Smallmouth bass is a species considered to have a similar thermal tolerance to walleye and redhorse are likely to be more thermally sensitive than walleye. It is important to note that both smallmouth bass and redhorse were included in the thermal data EA used to derive its proposed thermal standards.

EA’s comparative analysis of walleye, smallmouth bass and redhorse provided further evidence that (1) walleye are not a species that is reasonably expected to be present in these waters and (2) that the inclusion of smallmouth bass and redhorse in EA’s thermal standards derivation process adequately accounted for the more thermally sensitive fish species that can reasonably be expected to be present in the UDIP. The nine years of fish collection data from the Lower Dresden Pool General Use waters yielded only one walleye, but yielded 477 smallmouth bass and 571 redhorse during that same time period. Similarly, while the upper Marseilles Pool also yielded only one walleye, it yielded 172 smallmouth bass and 348 redhorse.³³ The fish collection data overwhelmingly supports the conclusion that walleye are habitat limited, not thermally limited, in these waters. Smallmouth bass and redhorse have roughly similar thermal requirements (or in the case of redhorse, perhaps more thermally sensitive requirements) as do walleye. Smallmouth bass and redhorse have established viable

³¹ *Id.*

³² *Id.* at p. 42 and Tables 1E and 1F.

³³ *Id.* at p. 42.

populations in the Lower Des Plaines River. Walleye has not.³⁴ EA properly included smallmouth bass and redhorse data in its derivation of the EA 2003 and 2007 Thermal Standards. It properly excluded walleye. The exclusion of walleye is not a reasonable or scientifically sound basis for declining to adopt the EA Thermal Standards.

EA's review of cool water species was not limited to walleye and white sucker. It reviewed fish collection data and habitat conditions for other cool water species, such as northern pike and yellow perch. The results were similar to those for walleye and white sucker. The nine-year fish collection database showed that only one yellow perch and one northern pike were collected from the General Use portion of the Dresden Pool.³⁵ Collections of these fish were also rare in the Upper Marseilles Pool. For these fish species, EA also found that the UDIP is "near the edge of their natural ranges" and that "there is little or no habitat in the Brandon and Upper Dresden Pools to support them."³⁶ Accordingly, EA properly concluded that these cool-water fish species are habitat-limited in these waters and should not be used as representative species in developing thermal water quality standards.³⁷

The Board should give further consideration to the data and analysis presented in the EA 2003 Report concerning both the selection and exclusion of species from the thermal standards derivation process. Upon further evaluation, the Board should be persuaded that all thermally sensitive species that can reasonably be expected to be present in the UDIP were included within the Representative Important Species (RIS) list used by EA to derive the proposed thermal standards. The 2007 EA Thermal Standards uses the same RIS list but was based on ten years of fish collection data and applied two statistical evaluations to further refine the proposed thermal standards. In either case, both EA thermal standards proposals satisfy and are consistent with U.S. EPA guidance regarding the selection of RIS for the derivation of water quality standards.

B. The Testimony of Dr. Thomas Does Not Support a Conclusion that Species Sensitive to Temperature Were Excluded from the EA Thermal Proposals.

The Board's First Notice Opinion also makes particular mention of the testimony of Dr. David Thomas to argue that species sensitive to temperature, such as white sucker, redhorse,

³⁴ *Id.* See also Hearing Testimony of Greg Seegert, 11/9/09PM Hearing Tr. at p. 28.

³⁵ *Id.* at p. 42 and Table IE.

³⁶ *Id.* at p. 41.

³⁷ *Id.* at p. 42.

walleye, and smallmouth bass, would occur in UDIP if the temperature was lower.³⁸ First, both redhorse and smallmouth bass were included in, not excluded from, the RIS EA used to develop the 2003 and 2007 Thermal Proposals. As to white sucker and walleye, as discussed above, the fish collection data and habitat information presented in the EA 2003 Report demonstrate that these two fish species should not be included in the RIS used to develop UDIP thermal water quality standards. Further, it should be noted that in his testimony, Dr. Thomas provided no data or other aquatic biological information to support why he speculated that the white sucker “might be one” species or that walleye “could be one” that would increase if temperatures were lower in the UDIP.³⁹ He admitted that while he had not conducted any habitat surveys or studies, EA “has done a lot of work” in these waters.⁴⁰ Most importantly, Dr. Thomas provided no testimony or supporting information whatsoever to show that the habitat conditions either in the UDIP or in the General Use waters below the I-55 Bridge were suitable to allow these fish species to establish viable populations.

In the course of his testimony, Dr. Thomas contradicted his speculative views regarding fish species whose presence “might” be expected, by testifying that “for this system I think we have a basic assemblage of species that in my view would be close to probably what we could expect in that system.”⁴¹ Further, his testimony supported the conclusion that Midwest Generation thermal discharges are not preventing these cool-water species from being present. Dr. Thomas testified that if the thermal plumes from the Midwest Generation plants are largely at the surface, it would not impact bottom dwellers like suckers and redhorses.⁴² As presented in EA’s 2003 Thermal Report (at p. 35), the three-dimensional mapping of the Midwest Generation plants’ thermal plumes (ENSR, 1994, EA, 2003), shows that the buoyancy of these warm water plumes keeps them largely at the surface and a zone of passage at cooler temperatures (of at least 75% of the cross-section of the waterway) remains beneath the surface thermal plume at any time. Also, as part of the UIW Study in the mid-1990’s, fly-over, infra-red imagery was taken of the waterway. (Brady, 1993-1994) These data also confirmed the surficial nature of the Midwest Generation thermal plumes in both the summer and winter periods. In sum, the testimony of Dr.

³⁸ First Notice Opinion at p. 209.

³⁹ Testimony of Dr. David Thomas, 8/14/09 AM Hearing Transcript at p. 114.

⁴⁰ Testimony of Dr. David Thomas, 8/14/09 AM Hearing Transcript at pp. 10-13

⁴¹ Testimony of Dr. David Thomas, 8/14/09 AM Hearing Tr. at p. 88.

⁴² Testimony of Dr. David Thomas, 8/14/09 AM Hearing Tr. at p. 113.

Thomas does not provide a reasonable or reliable evidentiary basis for a finding by the Board that fish like walleye or white sucker are “expected” to be present and hence must be protected.

C. The Extensive Field Aquatic Life Database Underlying the EA Thermal Standards Includes Data from “Unimpacted” UAA Waters and is Consistent with U.S. EPA Guidance.

In its discussion of the EA Thermal Proposals, the Board questioned whether the “extensive field aquatic life data” on which they are based is the type of data which U.S. EPA prefers.⁴³ The Board stated that “the data comes from CAWS and LDPR segments impacted by temperature discharge and not from ‘unpolluted bodies’ of water, as preferred by USEPA.” In support of its interpretation of U.S. EPA’s preferences, the Board noted that in the 1985 U.S. EPA “Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses,” PB85-227049, at 1, also referred to as the “National Guidelines,” it is stated:

If it were feasible, a freshwater (or saltwater) numerical aquatic life national criterion for a material should be determined by conducting field tests on a wide variety of *unpolluted bodies of fresh (or salt) water*...Because it is not feasible to determine national criteria by conducting such field tests, these Guidelines...describe an objective, internally consistent, appropriate, and feasible way of deriving national criteria...(emphasis added).

As explained further below, the Board appears to have misunderstood the full extent of the field data EA relied upon in deriving the proposed 2003 and 2007 Thermal Standards. Also, the use of this field data does not conflict with U.S. EPA’s National Guidelines because those guidelines do not expect that it would be feasible to collect field data only from “unpolluted bodies” of water.

First, the quoted except from the U.S. EPA National Guidelines addresses the derivation of national water quality criteria, not state water quality standards. More particularly, the quoted except does not address the derivation of state water quality standards for specific waterbodies.

⁴³ First Notice Opinion at p. 209.

Second, to the extent the quoted excerpt may be interpreted to state a U.S. EPA “preference,” that preference is expressly characterized by U.S. EPA to be a hypothetical one. In referencing the collection of data from “unpolluted bodies of water,” the quoted language is prefaced with the qualifier “if it were feasible” and immediately followed by the statement “[b]ecause it is not feasible to determine national criteria by conducting such field tests.” It is not a “preference” which U.S. EPA expects states to follow in deriving water quality standards because it is typically not feasible to do so.

The U.S. EPA’s National Guidelines instead express the U.S. EPA’s view that because it is not feasible to conduct field tests on a wide variety of unpolluted waters, the U.S. EPA is not required to do so in deriving national water quality criteria. Further, even if the collection and use of field data from unpolluted waters were feasible, it would not be the correct approach here because these waters are effluent-dominated waters and their thermal regime is therefore nothing like that of an “unpolluted water.”

More importantly, the National Guidelines expressly acknowledge that in deriving local criteria, it may be desirable to modify national criteria to take site-specific conditions into account. On this issue, the National Guidelines state in relevant part:

Criteria produced by these Guidelines are intended to be useful for developing water quality standards, mixing zone standards, effluent limitations, etc. The development of such standards and limitations, however, might have to take into account such additional factors as social, legal, economic, and hydrological considerations, the environmental and analytical chemistry of the material, the extrapolation from laboratory data to field situations, and relationships between species for which data are available and species in the body of water of concern. As an intermediate step in the development of standards, it might be desirable to derive site-specific criteria by modification of national criteria to reflect such local conditions as water quality, temperature, or ecologically important species.⁴⁴ (emphasis added)

There are no national thermal water quality criteria. Hence, the “intermediate step” referenced in the National Guidelines, where the national criteria are modified by site-specific criteria—such as water quality and temperature—are where the thermal standards derivation process

⁴⁴ 1985 National Guidelines at p. 3.

appropriately begins. Taking into the account the ambient background temperatures created by the effluent-dominated nature of the ALU B and UDIP waters is entirely consistent with U.S. EPA guidelines.

Even if a U.S. EPA preference for unpolluted waters existed, it could not feasibly be applied here. There is no similar unpolluted “reference” stream to use in deriving thermal standards for these waters. The UAA Biological Subcommittee tried but could not identify a biological reference site for the Lower Des Plaines River to determine the overall potential of the system. There are no other Illinois waterways that have the same artificially-controlled flow/level regime, the same man-made “shorelines” or the same significant commercial navigational/storm water control uses of these UAA waters. There is no real-life stream that mirrors these UAA waters.⁴⁵ If the Board required Midwest Generation to collect field data from “unpolluted waters,” it would be imposing an impossible burden which even the U.S. EPA agrees is not feasible.

The Board does not appear to have an accurate understanding of the scope of the field data EA relied on to derive its thermal proposals. The fish collection data EA relied upon was not limited to fish collected in the UDIP. Attachment C to the EA 2007 Thermal Report explains in detail “why use of the extensive, site-specific field database that has been collected in Dresden Pool is the most appropriate and robust method to derive thermal limits for the [UDIP].”⁴⁶ As discussed above regarding the formulation of the RIS List by EA, the fish collection data EA used included data from both the lower Dresden Pool and the Upper Marseilles Pool. Both of these waters are General Use waters in which cooler ambient temperatures prevail. Once the RIS List was determined, EA relied on field data from throughout the Dresden Pool, not solely the non-General Use area above the I-55 Bridge. Consistent with the U.S. EPA National Guidelines, the use of field data from these General Use waters reflects the relevant site-specific conditions in these waters, including their effluent-dominated nature and habitat conditions which are similar to, but generally somewhat better than, the UDIP.

Further, EA took into account that the field data collected from the UDIP area may have been influenced by the presence of power plant discharges because fish may avoid the higher

⁴⁵ EA 2003 Report at p. 37

⁴⁶ Attachment C to EA 2007 Report at p. 2.

temperatures present in the area of the thermal discharge plumes. The underlying field data on which the EA 2007 Thermal Standards are based properly, but conservatively, took into account such thermal avoidance behavior. If a species avoided a thermally-enhanced area during the annual May-through-September time period during which the field collection work was performed, its absence was noted and the biological measurements that were used (*e.g.*, species richness and the modified Index of Well Being) were “reduced accordingly to reflect their absence.”⁴⁷

The extensive aquatic life field data EA used is consistent with U.S. EPA guidance for the derivation of state water quality standards. The type of the field data EA used to derive its 2003 and 2007 Thermal Standards should not cause the Board to reject these proposals as viable alternative options to the application of the General Use thermal standards.

D. The Absence of Witness Cross-Examination Should not Prevent the Adoption of the EA Thermal Proposals because They Were Vetted and Approved by a Nationally Recognized Thermal Standards Expert.

As the Board knows, Midwest Generation provided extensive expert witness testimony in the Subdocket C UAA rulemaking. By the time the Subdocket D hearings occurred, Midwest Generation was in the midst of a bankruptcy proceeding and its future ownership was uncertain. During that time, Midwest Generation’s participation was admittedly more limited and it did not present witness testimony on the EA 2003 and 2007 Thermal Standards. The Board’s First Notice Opinion relies in part upon the Agency’s contention that the Board should not adopt either of these thermal standards proposals for that reason.⁴⁸ Yet, the Board only observes the absence of an opportunity to cross-examine on these proposals; it offers no specification of what aspects of these written proposals are either unclear or unsupported such that cross-examination was essential to either clarify them or to show the existence of scientifically sound support for either proposal. The mere absence of cross-examination, given the detailed nature of the written reports which contained the 2003 and 2007 EA Thermal Standards, is not a sufficient ground for rejecting either proposal.

Further, the Agency’s contention seems disingenuous because it had the opportunity for several years to examine the EA 2003 and 2007 Thermal Proposals and to request further

⁴⁷ 2007 EA Report (Attachment C) at pp. 4-5.

⁴⁸ First Notice Opinion at p. 210.

clarification or pose questions to Midwest Generation concerning either proposal; it elected not to. The 2003 EA Proposal expressly states that it was prepared for inclusion in the record of the UAA for the Lower Des Plaines and the Illinois EPA included it among its original filings in this rulemaking. Yet, the Agency never provided any comment whatsoever to Midwest Generation.⁴⁹ Moreover, the underlying fish collection data on which the EA thermal proposals are based was contained in the annual fish survey reports which EA prepared as part of the continuing Upper Illinois Waterway studies performed for Midwest Generation in order to show that the AS 96-10 thermal standards were still protective of aquatic life in these waters. Copies of these annual reports also were provided to the Agency.

Midwest Generation does not contend that the Agency has an obligation to review every water quality standards proposal it receives. But here, the circumstances clearly warranted its review. The 2008 hearing testimony of Christopher Yoder in support of the Agency's proposed thermal standards showed that there were significant and numerous problems and deficiencies with both the underlying Yoder methodology and the resulting thermal standards the Agency proposed. There were several years between the 2008 hearing testimony and the commencement of the Subdocket D hearings. The Agency could have at least reviewed the alternative approaches presented by the EA 2003 and 2007 Thermal Standards. It did not. If it had, it could have posed any questions it had concerning the content of these proposals directly to Midwest Generation. It did not. Because these alternative proposals were directly submitted to the Agency for its consideration and the Agency elected to ignore them, the Agency's contention that it did not have the opportunity to cross-examine a witness regarding the 2002 and 2007 EA Thermal Proposals is not a valid reason to reject either the EA 2003 or the 2007 Thermal Standards.

But more importantly, the Board may have overlooked the fact that the proposed 2007 EA Thermal Standards, including the methodology on which it is based, was vetted by the renowned thermal standards expert Dr. Charles Coutant. It is important in this regard to note that the 2003 EA Thermal Standards use virtually the same aquatic life data and methodology as was used in the 2007 EA Thermal Standard, with the difference being only that the EA 2003 Thermal Standards used a nine-year database while the EA 2007 Thermal Standard used a ten-year

⁴⁹ Mr. Yoder was aware of the EA report which contained its 2007 Thermal Proposal but the Agency did not provide it to him to review. Testimony of Christopher Yoder, January 30, 2008 Hearing Tr. at pp. 86-87.

database. The EA 2007 Thermal Standards included an additional component to test the thermal numeric values derived from the data by applying a two-pronged statistical evaluation to those thermal values. Dr. Coutant reviewed the 2007 EA Thermal Proposal in detail. He found EA's thermal analyses and findings to be "technically sound" and "consistent with recognized scientific literature and administrative guidance, and with appropriate discussion justifying the approach."⁵⁰ Dr. Coutant expressly concluded that the UDIP numerical thermal values were supported by "appropriate and well done" technical analyses.

Dr. Coutant is a nationally recognized and respected thermal standards expert who has been integrally involved in the development of thermal standards guidance at both the federal and state level, including the U.S. EPA's development of the 1977 Clean Water Act Section 316(a) thermal variance guidance.⁵¹ Dr. Coutant has been involved in the preparation of nearly every U.S. EPA guidance document on thermal criteria or standards, including as an acknowledged reviewer of the 1977 U.S. EPA guidance on "Temperature Criteria for Freshwater Fish: Protocol and Procedures" cited in the Board's First Notice Opinion. With all due deference to the witnesses who did testify in this rulemaking on thermal issues, none have achieved Dr. Coutant's nationally-recognized stature nor do any of them have his level of in-depth knowledge and expertise regarding thermal standards .

In this rulemaking, the Agency has admitted that it accepted the U.S. EPA's offer of Mr. Yoder's assistance in deriving its proposed thermal standards because it lacked internal thermal standards expertise. Given its lack of experience on the derivation of thermal standards, it is highly unlikely that the Agency's would have detected a flaw or deficiency in the EA 2007 Thermal Proposal which Dr. Coutant did not. Midwest Generation recognized the need for and benefit to be derived from having a recognized thermal expert conduct an independent review of the EA 2007 Thermal Standards. For this reason, it submitted the proposal to Dr. Coutant for his independent review and requested that he submit the results of his review in writing. Dr. Coutant

⁵⁰ Coutant Letter at p. 2.

⁵¹ Since the 1970's, Dr. Coutant has served in several preeminent roles regarding heat and temperature issues, including the preparation of U.S. EPA guidance on thermal issues. Dr. Coutant was a co-author of the U.S. EPA's 1977 interagency guidance for implementing Section 316(a) of the Clean Water Act and was also the principal author of the Heat and Temperature chapter of the National Academy of Sciences/National Academy of Engineering report Water Quality Criteria-1972. Dr. Coutant also is familiar with the UDIP area from his work as the Co-Chair of the UIW Ecological Study Task Force in the early 1990's. Dr. Coutant retired from the Oak Ridge National Laboratory in 2005. See Coutant August 9, 2007 Letter ("Coutant Letter") (Attachment E to Midwest Generation's Post-Hearing Comments, 5/14/14, R2008-09(D)) at p. 1.

did so and his conclusions are part of this record.⁵² Midwest Generation submits that Dr. Coutant's approval and endorsement of EA's methodology and proposal should provide the Board with the support it needs to select the EA 2007 Thermal Standards as the appropriate thermal water quality standards for the UDIP.

The Board appears to be holding Midwest Generation to a higher and different standard of proof than applies to its proposed selection of the General Use thermal standards for these waters. There was no witness testimony presented in this proceeding which supported the application of the General Use thermal standards to the ALU B and UDIP waters. Hence, there was no opportunity for Midwest Generation or any other participant in this rulemaking to cross-examine on the proposed application of the General Use standards to these waters. There is also no written submission by an expert like Dr. Coutant which supports the proposed application of General Use thermal standards to these waters. Yet—and even though these waters specifically have not been classified as General Use waters, the Board concluded that the absence of witness testimony and the opportunity to cross-examine thereon did not present a persuasive grounds for rejecting the application of the General Use thermal standards. It would be arbitrary and unfairly prejudicial if the Board were to reject the EA 2003 and 2007 Thermal Standards based on the absence of witness testimony while proceeding to adopt the General Use thermal standards for which no such testimony was presented.

Should the Board still be concerned about selecting either of the proposed EA Thermal Standards due to the absence of cross-examination, then an alternative, reasonable, approach is to create a subdocket to address the thermal standards for both UDIP and ALU B waters. If a subdocket is created, Midwest Generation would be willing to present witness testimony in support of the 2003 and 2007 EA Thermal Proposals for cross-examination by any interested party. This could be accomplished without an extensive additional effort by either the Board or the participants. The proposed creation of a subdocket to address the thermal standards issues further is a much sounder and fairer approach than the adoption of General Use thermal standards—particularly when throughout the years of hearings in this rulemaking, it was never before proposed that the General Use thermal standards should be adopted for these waters.

⁵² See Dr. Charles Coutant letter to Midwest Generation, dated August 9, 2007, a copy of which was attached to Midwest Generation's May 14, 2014 Post-Hearing Comments as Attachment E, R2008-09(D).

IV. GREATER JUSTIFICATION EXISTS FOR APPLYING THE AS 96-10 ADJUSTED THERMAL STANDARD THAN GENERAL USE STANDARDS FOR THE UDIP.

The selection of what thermal standards to apply to the UDIP should primarily be focused on protecting the aquatic life reasonably expected to be present while not imposing overly stringent thermal standards. In a 1996 decision in Docket No. AS 96-10, the Board granted an adjusted thermal standard to Commonwealth Edison (“ComEd”), and then in 2000 transferred it to Midwest Generation.⁵³ The adjusted thermal standard was applicable at the I-55 Bridge, for the then ComEd, and now Midwest Generation, power plant thermal discharges (the “AS 96-10 Standard”) in order to protect the aquatic life in the General Use waters downstream of the I-55 Bridge. Here, as between the AS 96-10 Standard and the General Use standards, the AS 96-10 Standard are a more reasonable and viable alternative, because the AS 96-10 Standard would be sufficiently protective but not overly protective like the General Use thermal standards. In addition, the AS 96-10 Standard includes an excursion hour provision that is protective but better suited to the aquatic-life population expected to be present in the UDIP. In the event that site-specific relief cannot be obtained prior to the effective date of the UDIP thermal standard, the application of the AS 96-10 Standard imposes a slightly less unduly burdensome compliance standard upon thermal dischargers to the UDIP. At the same time, General Use aquatic-life populations downstream of the I-55 Bridge would not be threatened. As demonstrated by the annual fish surveys performed for Midwest Generation by EA, the AS 96-10 Standard has proven to be protective of the aquatic life in the downstream General Use waters since its adoption in the late 1990’s.

There are several additional reasons why the Board should reconsider its proposed selection of the General Use thermal standards over the alternative AS 96-10 Standard. Like the General Use thermal standards, the AS 96-10 Standard was adopted by the Board. Unlike the General Use thermal standards, which were adopted in the early 1970’s, the AS 96-10 Standard was adopted by the Board more than 20-years later. Thus, the AS 96-10 Standard benefited from the evolution and advancement in aquatic life field data collection practices and general advances in the relevant knowledge and expertise relating to the derivation of thermal standards

⁵³ See *In the Matter of: Petition of commonwealth Edison Company for an Adjusted Standard from 35 Ill. Adm. Code 302.211(d) and (e)*, AS 96-10 (October 3, 1996) and (AS96-10 Opinion and Order, Mar. 16, 2000) and AS 96-10 (Mar. 16, 2000).

over the more than two decades since the General Use standards were adopted. Like the General Use thermal standards, which the Board notes “have been effective since the Board adopted them,” so too has the AS 96-10 Standard. But unlike the General Use thermal standards, the effectiveness of the AS 96-10 Standard has been carefully monitored and demonstrated year after year, through the annual in-stream monitoring conducted by EA for Midwest Generation in the Lower Des Plaines River. These monitoring results have been publicly documented in annual reporting to the Agency.

The AS 96-10 Standard has been incorporated into every Midwest Generation NPDES Permit issued to its power plants on the UAA waters. Each of those NPDES Permits has undergone public comment and review, including the most recent NPDES Permits issued in 2014 to the Joliet stations and the Will County station. The Board also should be persuaded by the fact that not only did the U.S. EPA participate in overseeing the UIW study on which the AS 96-10 Standard is based, but the U.S. EPA also has never vetoed the inclusion of the AS 96-10 Standard in any of the subsequently issued NPDES permits for the Midwest Generation stations’ thermal discharges to these waters.

Perhaps most importantly, unlike the generic General Use thermal standards, the AS 96-10 Standard was derived specifically to protect the General Use waters below the I-55 Bridge - - higher quality waters than either the ALU B or UDIP designations. Since the Board adopted the AS 96-10 Standard in the late 1990’s, and then approved the transfer of the standard to Midwest Generation in 2000, there have been no changes in the key conditions cited in the Board’s findings supporting the adoption of the AS 96-10 Standard. They were found to be protective then and there is no reason to conclude they would not be protective of these lesser quality ALU B and UDIP waters now.

The process which led the Board to approve the AS 96-10 Standard was as rigorous as the General Use thermal standards derivation process, if not more so. The AS 96-10 Standard was adopted by the Board based on the results of the comprehensive UIW study performed by ComEd and overseen by the UIW Task Force. The UIW Task Force included both state and federal agencies as well as representatives of environmental groups.⁵⁴ The comprehensive UIW

⁵⁴ IPCB Order and Opinion, AS 96-10, dated October 3, 1996.

study focused on the ALU B, UDIP and downstream General Use waters, unlike the more generic thermal data used to derive the General Use thermal standards. The UIW study area ranged from Lake Michigan downstream to the I-55 Bridge and continuing downstream to the Dresden Island Lock and Dam. The UIW study showed that the AS 96-10 Standard would not adversely impact or prevent improvements to the aquatic community within the higher quality waters below the I-55 Bridge. The Board also had the benefit of reviewing in detail the comprehensive UIW study and listening to witness testimony and cross-examination regarding the study's findings. The UIW Study provided a sound scientific basis on which the AS 96-10 Standard was developed.⁵⁵ Unlike the General Use thermal standards, the AS 96-10 Standard considered the thermal regime of these effluent-dominated waters, as well as other limitations and artificial influences on the thermal conditions of these waters, while continuing to protect the General Use designation of the waters below the I-55 Bridge. As stated in the Board's AS 96-10 Opinion adopting these standards, they "provide for a gradual, stair-step increase into the spring and decrease in the fall rather than the 30°F change" under the General Use thermal standards.⁵⁶

The Board's First Notice Opinion questions the application of the AS 96-10 Standard because it does not address conditions that have changed since the Board granted the adjusted standard. The Board cited the changes involving the installation of helper cooling towers at the Joliet 29 facility and the elimination of heat discharges to the CAWS with the closing of Crawford and Fisk plants.⁵⁷ The Board concludes that the application of the AS 96-10 Standard to the UDIP is not justified without further evaluation based on the current conditions of the waterways "before considering a standard adopted 20 years ago."⁵⁸

But the changes noted by the Board do not make the application of the AS 96-10 Standard less well-suited to the UDIP than the application of the General Use standards. The installation of helper cooling towers at the Joliet 29 facility was for the purpose of assisting in lowering the temperature of the Joliet 29 facility's discharge so that it could consistently maintain compliance with the downstream AS 96-10 Standard that applied only at the I-55 Bridge. The installation of these towers was a compliance measure that was needed because of the Board's adoption of that standard. The Board tacitly acknowledged this fact when in 2000,

⁵⁵ *Id.* (Appendix 2 at p. 76).

⁵⁶ IPCB Order and Opinion, AS 96-10 (October 3, 1996), at p. 6.

⁵⁷ The First Notice Opinion incorrectly states that the helper cooling towers are located at the Joliet 9 facility.

⁵⁸ First Notice Opinion at pp. 209-210.

after the Joliet 29 cooling towers had been installed and operating, the Board again found that the conditions in the UIW supported the transfer of the adjusted thermal limits from ComEd to Midwest Generation.⁵⁹ Even with the addition of the Joliet 29 Station's cooling towers, the Board concluded that conditions in the Lower Des Plaines River had not changed appreciably from when the original AS 96-10 Standard was granted. The installation of the Joliet 29 Station helper cooling towers is not accurately characterized as a "changed condition" that would justify rejecting the AS 96-10 Standard.

Similarly, the closure of the Fisk and Crawford Stations is not a change which should cause the Board to reject the AS 96-10 Standard for the UDIP. In fact, it should provide support for its adoption. The stretch of the CSSC which previously received the Fisk and Crawford Stations thermal discharges is no longer so affected. But the downstream stretch of the CSSC is still an ALU B water—a water which by definition cannot attain the General Use thermal standards. The ALU B waters are still impacted both by the effluent-dominated nature of these waters and the presence of the Will County station—which was in existence at the time the AS 96-10 Standard was adopted.

When it adopted the AS 96-10 Standards, the Board heavily relied upon the fact that both the CSSC and the UDIP were part of a "very artificial and significantly modified waterway that is limited in terms of habitat" and that "[h]istorical practices have caused substantial residual chemical contamination to be present in the sediments of the waterway."⁶⁰ The addition of cooling towers at the Joliet Station and the closure of Fisk and Crawford Stations have not had any significant effect on these key conditions on which the Board relied in granting the AS 96-10 Standard. The Board's reliance upon changed conditions might be justified if those changed conditions included improvements to the aquatic habitat in the ALU B and UDIP waters. Such habitat improvements might have contributed to changes in the aquatic life since the time the UIW study was conducted. But that is not the case. There is no evidence in this record of any such habitat improvements in the ALU B or UDIP waters since the Board's adoption of the AS 96-10 Standard and its approval of the transfer of that standard to Midwest Generation.

Finally, the Board's reference to the fact that the AS 96-10 Standard was "adopted 20 years ago" is not a reasonable ground for rejecting its application here in favor of a General Use

⁵⁹ AS96-10 Opinion and Order, March 16, 2000.

⁶⁰ Id. at 6.

thermal standard. The General Use thermal standard was adopted almost twice as long ago, yet, the Board did not find the age of the General Use thermal standard to be an impediment. Midwest Generation submits that the fact that the generic General Use thermal standard was never intended to apply to UDIP and Use B waters is a far greater impediment to its adoption than is the more recent adoption of the AS 96-10 Standard.

The inherent problem, however, with applying either the AS 96-10 Standard or the General Use thermal standards is that both standards were intended and derived to protect General Use aquatic life populations, not the less thermally sensitive aquatic life populations protected by the ALU B and UDIP use designations. The Board will be imposing a greater burden upon Midwest Generation by requiring its thermal discharges to meet daily maximum thermal standards which are stricter than what should be applicable to either the UDIP or ALU B waters. Midwest Generation recognizes that the Board is also attempting to address and mitigate the substantial prejudice that these stricter daily maximum standards may impose by postponing the effective date of the thermal standards and acknowledging that site-specific relief may be needed. However, there are numerous uncertainties surrounding both the timing of any future thermal standards rulemakings and the identification of applicable standards for obtaining relief from water quality standards. Hence, there is no reasonable assurance that the Board's well-intended efforts will provide needed relief from the substantial prejudice caused by having to comply with overly stringent thermal standards.

If the Board proceeds with the General Use or AS 96-10 Standards, the Board needs to take a further step to mitigate the undue technological and economic burdens that would be imposed upon Midwest Generation and other thermal dischargers. That further step is to modify the daily maximum thermal standards by instead adopting them as daily average maximum values. Converting the daily maximum numeric standards to a maximum daily average standard will still protect aquatic life because the maximum daily average temperature will not exceed the same numeric temperature values contained in the AS 96-10 and General Use Standards. Thus, the proposed modification from a daily maximum to a maximum daily average standard would not threaten the viability of aquatic life reasonably expected to be present in these waters, especially for the ALU B waters where only tolerant species are expected to be present. The limited hours within a given day during which the thermal discharge may exceed the daily average value are offset by the equivalent need to reduce the thermal discharge below the daily

average value for the rest of the day in order to achieve compliance with the maximum daily average. This approach provides limited but much needed relief to Midwest Generation by reducing the extent of the unwarranted burden imposed by either of these unnecessarily protective thermal standards.

Modifying the daily maximum AS 96-10 or General Use Standards to include maximum daily average values also provides a means for a thermal discharger to revise its operating practices to attempt to comply with these overly strict standards, particularly if site-specific relief is either delayed or denied. While the Board may conclude that it does not have an alternative to adopting the General Use thermal standards, it should appreciate that in all of the hearings and information presented in this proceeding, it was never proposed that an instantaneous 60° F maximum thermal standard would apply to these waters for a period of several consecutive months, which is what the General Use Standards require. Given the effluent-dominated nature of these waters, it is uncertain whether the ambient temperatures, even without power plant dischargers, will be below the 60° F daily maximum standard at all times.

The Agency's previously proposed daily maximum thermal standard for both the UDIP and the Use B waters was a constant 88.7° F value throughout the year. The Board is now proposing to decrease that daily maximum value by nearly 30° F for the late fall through early spring months. There has been little time since the issuance of the First Notice Opinion to evaluate the extent of the adverse impact this proposed change will have on Midwest Generation's remaining facilities. Nevertheless, it is apparent that such a dramatic decline in the proposed daily maximum value will have serious and extensive consequences because the proposed instantaneous daily maximum standard allows no room to modify a station's operations to remain in compliance. The lack of any significant advance notice regarding the proposed adoption of the far more restrictive General Use thermal standards, along with the absence of post-Fisk and Crawford closures ambient thermal data in this record are both obstacles to determining the extent to which such a new standard will impact thermal dischargers. These circumstances present two significant reasons why the Board needs to consider mitigating the harshness of a decision to impose such restrictive thermal standards. Converting the thermal standard from a daily maximum to a maximum daily average standard is one means available to the Board to do so, without jeopardizing the viability of resident aquatic populations and the protectiveness of the thermal standard.

V. A Modified Excursion Hours Provision Should Be Included in the Thermal Standards.

The Board invited comments on the proposed inclusion of the General Use excursion hour provision in Section 302.211 which allows for an increase of up to 3.0° F to occur for 1% of the hours in a 12-month period. For the reasons stated in its Subdocket D Post-Hearing Reply Comments, Midwest Generation agrees that excursion hours are appropriately included in the thermal standards for the ALU B and UDIP waters.⁶¹ Years of actual in-stream data provide adequate scientific support for the inclusion of an excursion hours provision.

However, Midwest Generation submits that the proposed 1% General Use excursion hours standard is unduly restrictive for these waters. It should be increased to at least 2% or greater, and should be applied on a calendar year basis instead of a 12-month rolling basis. The AS 96-10 Standard has included such an excursion hour provision since its effective date almost twenty years ago and the annual in-stream studies on the General Use waters downstream of the I-55 Bridge has shown that it is adequately protective of the aquatic-life population. The AS 96-10 Standard provides that the thermal numeric standards may be exceeded by no more than 3° F during 2% of the hours in the 12-month period ending December 31, except that at no time may temperatures exceed 93° F at the I-55 Bridge.⁶² The AS 96-10 excursion hours provision should be included in lieu of the General Use excursion hour provision if the Board proceeds to adopt the General Use thermal standards.

Allowing excursion hours for up to 2% of the time in a calendar year stays within the short-term avoidance parameters that do not adversely affect aquatic life populations. As explained in detail in the EA 2003 Thermal Standards Report, at p. 39:

Short-term avoidance is 'the temporary avoidance by a species population caused by the onset of limiting or unfavorable environmental conditions. (Ohio EPA 1978). Short-term avoidance, though not rigorously defined, is typically considered to be on the order of hours or days, whereas long-term avoidance has been defined as the permanent or prolonged avoidance of an area (Ohio EPA 1978). Thus, long-term avoidance would be on the order of weeks or months. Long-term avoidance is an indicator of appreciable harm (assuming the area avoided is not trivial in size),

⁶¹ See PC1408b, *Midwest Generation, LLC's Subdocket D Post-Hearings Reply Comments* at pp. 13-17.

⁶² IPCB Order and Opinion, AS 96-10 (October 3, 1996), at p. 7

whereas, short-term avoidance is not (Ohio EPA 1978). Fisheries studies performed by EA for over the past 20 years demonstrate that there is short term avoidance of the power plant discharge canals during the hotter periods of the summer, but that fish move back into the discharge areas once more preferable temperatures resume. There is no evidence that fish permanently move from the area and do not return. (EA Fisheries Monitoring Studies, various years).

Accordingly, Midwest Generation requests that the Board adopt the excursion hours provision of the AS 96-10 Standard in lieu of the General Use excursion hours provision.

VI. Cold Shock

In response to the Board's invitation for comments on whether a cold shock provision should be included in the thermal standards, Midwest Generation believes that the Board has appropriately proposed not to include a cold-shock provision in these thermal standards. As the Board recognized, the record is devoid of any evidence showing that such a cold-shock provision is necessary to protect the aquatic life in the UAA waters. If cold shock has not occurred in these waters over the past several decades, it would be illogical to conclude that it is going to happen in the future. With the more recent closures of Fisk and Crawford Stations, and the planned future shutdown of one of the two remaining Will County station electric-generating units, there is arguably even less support today for the inclusion of a cold shock provision.

The suggestion that a cold shock provision be included in these rules also fails to adequately consider the effluent-dominated nature of these waters. The thermal point source discharges do not affect a significant portion of these waters. The MWRD's Stickney Plant discharges will continue to dominate their thermal regime. And, as discussed above, that thermal regime unnaturally moderates the ambient conditions of these waters.

Moreover, there is no technical basis here for believing there is a risk of cold shock from the operation of the Midwest Generation stations. As originally documented in the U.S. EPA's 1976 guidance document on water quality criteria, commonly referred to as the "Red Book," the potential adverse effects caused by cold shock occur if the ambient water temperature is greater than 27° F less than the temperature of the heated discharge.⁶³ None of Midwest Generation's stations have this high of a temperature change across the condenser so that the station's heated

⁶³ See *Quality Criteria for Water* ("Red Book"), U.S. EPA, PB 263 943, 1976, at p. 432.

discharge is not 27° F or more above the ambient water temperature. As Midwest Generation's witness Julia Wozniak testified, the Will County and Joliet stations' maximum temperature rise for cooling water discharges is less than half of this 27° F delta temperature value, ranging from approximately 10.7° F to 12.1° F.⁶⁴ Thus, even if there is a sudden shutdown of one of the Midwest Generation Stations during non-summer months, there is no reasonable expectation that cold shock will occur.

The Board also invited comment on the related issue of whether, if a cold shock provision is to be included in these rules, it should be the narrative cold shock provision proposed by the Illinois EPA or Midwest Generation's specific 27° F maximum thermal discharge temperature change. Midwest Generation previously suggested the 27° F cold shock provision to Illinois EPA not because historical or other relevant information on these waters warranted it, but rather to make its thermal standards proposal more acceptable to those stakeholders who may believe such a provision is necessary. Hence, as Dr. Coutant found in his analysis of the Midwest General cold shock proposal, Midwest Generation's approach is "consistent with EPA guidance, [his] own development of cold kill guidance for power plants...and the wintertime conditions of the Lower Des Plaines River."⁶⁵ This statement does not mean that a cold shock provision is necessary, which Midwest Generation maintains it is not, but that the Midwest Generation proposal is clear and understandable to a thermal discharger who must operate in such a way as to maintain compliance with the standard. In this regard, it vastly improves upon the vagueness and uncertainty inherent in the narrative provisions of Illinois EPA's proposal, as previously discussed in Midwest Generation's Subdocket D Post-Hearing Comments. Thus, if the Board finds that a cold-shock provision is necessary, it should select Midwest Generation's proposal.

VII. THE POSTPONEMENT OF THE EFFECTIVE DATE OF THE THERMAL STANDARDS SHOULD BE EXTENDED FROM 18 MONTHS TO 3 YEARS.

A. The Full Extent of the Uncertainties Surrounding Thermal Standards Issues has not Been Addressed in the Board's First Notice Opinion.

After so many years of effort put into this rulemaking, it is extremely unfortunate that the end of it is occurring at a time of uncertainty under Illinois law regarding the availability of

⁶⁴ See Ex. 364, Pre-Filed Testimony of Julia Wozniak, at pps. 3-4.

⁶⁵ *Id.*

water quality standards variances under the Illinois Environmental Protection Act and the procedures to be followed to obtain one. The Board appropriately took notice of these circumstances in its First Notice Opinion.⁶⁶ However, the Board also concluded that “it would be premature to provide any clarity on the variance issues” while the U.S. EPA’s rulemaking on its Clarifications Rule (see 78 Fed. Reg. 54517(Sept. 4, 2013)) is still pending and the Illinois EPA “is still working with U.S. EPA on a workable variance approach.”⁶⁷ Instead the Board offers for comment a proposed 18- month postponement of the thermal standards’ effective date.⁶⁸

While the Board’s proposal is well-intentioned and hence, appreciated, an insurmountable problem is that an 18-month delay is not likely to be sufficient for a number of reasons. First, it is currently uncertain to what extent the U.S. EPA’s Clarifications Rule rulemaking proceeding has any effect, and if so, to what extent, on the standards applicable to a Section 316(a) variance under the Clean Water Act. In other words, the Clarifications Rule does not expressly exclude Section 316(a) variances from its discussion of water quality standards variances but it also does not expressly include them. Hence, while the Board earlier this year adopted Section 316(a) thermal variance regulations in the R13-20 rulemaking to specify Section 316(a) thermal variance procedures in Illinois, the U.S. EPA’s position as to whether and how the Section 316(a) thermal variance requirements will be affected by its pending Clarifications Rule is not presently known. Nor can anyone know when the U.S. EPA and Illinois EPA will agree upon a workable variance approach generally. These matters are beyond the control of dischargers like Midwest Generation.⁶⁹ But even without the uncertainty surrounding the availability of site-specific variance relief, there is additional uncertainty not addressed in the First Notice Opinion stemming from the Board’s proposed adoption of General Use thermal standards for these waters. The Board’s proposed approach creates a substantial likelihood that the application of General Use thermal standards to these waters would be a placeholder until the Illinois EPA has updated the General Use thermal standards and then seeks to modify the thermal standards for the ALU B and UDIP waters based on the methodology used to update the General Use standards.

⁶⁶ First Notice Opinion at pp. 216-217.

⁶⁷ First Notice Opinion at p. 216.

⁶⁸ First Notice Opinion at p. 217.

⁶⁹ See Opinion and Order of the Board, R13-20 (February 20, 2014).

In its First Notice Opinion, the Board encourages the Agency to address the General Use thermal standards in its next triennial review. Assuming that the Agency follows the Board's suggestion, and given the age of the General Use thermal standards, the General Use thermal standards would likely be revised as a result of the triennial review. The revision to the General Use thermal standards will then cascade to these lower ALU-designated waters based on whatever thermal standards derivation methodology is used for deriving the updated General Use water quality standards. The Board's First Notice opinion certainly appears to contemplate this phased approach for arriving at modified thermal water quality standards for the UAA waters. Essentially, the Board's multi-phased thermal standards derivation approach begins with the application of the General Use thermal standards. The next phase is the adoption of updated thermal standards for General Use waters. The final phase is the adoption of final thermal standards for these lower aquatic life use waters based on the updated General Use thermal standards.

Even putting aside the likely multi-phased approach to establishing the thermal water quality standards for the UAA waters, because of the default nature of the proposed application of General Use thermal standards, there will likely be a need to revisit and revise the thermal standards for these waters regardless of what the Agency may or may not do to update the General Use standards. The application of the General Use thermal standards here is not based on a methodology that addresses the aquatic life populations reasonably expected to be present in this waters. Hence, any interested party may pursue a new rulemaking in the future to attempt to revise the application of General Use thermal standards to these lower aquatic life use waters.

B. A New Thermal Standards Subdocket should be Established to Address Thermal Standards Issues.

The Board's proposed 18-month postponement of the effective date of the General Use thermal standards is not likely to adequately protect thermal dischargers from the prejudice and burdens caused by having to comply with thermal water quality standards that are likely to be moving targets in the years to come. The 18-month postponement approach may lead a thermal discharger with potential compliance issues to either commence a new thermal standards rulemaking in the future to obtain relief from the default application of General Use standards

and/or to obtain variance-type relief before the effective date of the General Use standards. Neither alternative is reasonable given the uncertainties surrounding them.

The thermal variance option presents certain unique challenges. The challenges include the above-discussed legal and regulatory uncertainties surrounding water quality standards variance relief. There is also uncertainty surrounding the ultimate thermal standards applicable to these waters. Further, because of the complete absence of any accepted Illinois methodology for deriving updated thermal standards, no precedent exists in the Illinois thermal regulations to guide a request for alternative thermal standards variance relief. Similarly, absent the adoption here of an updated thermal standards methodology, there will be no opportunity to obtain U.S. EPA's review and approval of an updated thermal standards derivation methodology. Finally, even if a petitioner is successful in obtaining a thermal variance, it may again need to seek either a new or a modified variance when and if either the Agency turns to re-evaluating the application of the old General Use standards to these waters or a third party seeks to pursue a new thermal standards rulemaking for any or all of the UAA waters at issue here.

In sum, under the Board's First Notice Opinion, thermal dischargers who cannot achieve compliance with the proposed General Use thermal standards are essentially "up a creek without a paddle." Under these circumstances, it is critical to avoid the substantial prejudice threatened by the postponement approach outlined in the First Notice Opinion. If the Board cannot be persuaded to adopt either of the EA Thermal Proposals, which Midwest Generation maintains present scientifically sound alternatives, then it should instead create a new subdocket in which the thermal standards issues can be addressed, as it did previously in creating Subdocket E for the Bubbly Creek portion of the UAA waters.⁷⁰

A new subdocket for the thermal standards will allow interested parties to build upon the Board's findings in this Subdocket D regarding thermal issues. Now that the use designations have been adopted for these waters, which was not the case when either the Agencies' or Midwest Generation's prior thermal proposals were prepared, there is a clear basis on which to derive protective thermal standards for these uses. The Board's First Notice Opinion also provides new guidance on issues and factors to be considered in deriving thermal standards. Additionally, given the Board's stated concerns about changes in the thermal discharges that

⁷⁰ See *In The Matter of: Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System (CAWS) and the Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303 and 304, R2008-09(E)*.

have occurred with the closure of the Fisk and Crawford Stations, a new subdocket allows an opportunity to review the currently existing ambient thermal conditions following closures at the Fisk and Crawford stations, as well as to consider whether the planned changes for Will County station and the Joliet stations will have any significant effects.

The creation of a thermal standards subdocket will expedite the process towards identifying an acceptable methodology on which to derive thermal water quality standards. The methodology can be developed and examined in the new subdocket rather than waiting to see if this occurs several years from now during the Agency's next triennial review of water quality standards. While the subdocket solution may not directly address the Board's preference for having the General Use thermal standards updated first, that preferred order should not be necessary if an accepted methodology for deriving thermal standards can be established in the thermal standards subdocket. Once an accepted thermal standards methodology is identified, it should apply uniformly across all use designations. The differences in thermal standards between use designations arise only in the identification of the aquatic-life populations, and their associated thermal tolerances, that are to be protected under each use designation.

For all of the above reasons, Midwest Generation requests that the Board established a new subdocket in this rulemaking to address the thermal standards issues for the UAA waters.

C. In the Alternative, the Effective Date of the Thermal Standards should be Postponed for Three Years.

If the Board elects not to adopt the suggested thermal standards subdocket alternative, then Midwest Generation urges the Board to extend the postponement of the effective date of the thermal standards for the ALU B and UDIP waters for a period of at least three years. For the reasons already stated, the Board's 18-month postponement simply does not provide sufficient assurance that either site-specific relief or more final thermal standards for these waters can be obtained within that time period. Hence, while Midwest Generation maintains that no "clock" should start ticking on the effective date of thermal standards with the conclusion of this Subdocket D, if one must start, at least a three-year postponement provides a more realistic opportunity to relieve thermal dischargers to these waters from the regulatory uncertainties that exist and for which thermal dischargers are not responsible.

As discussed above, it is presently unclear whether and to what extent the U.S. EPA's pending Clarifications Rule will affect the standards currently applicable to Clean Water Act

Section 316(a) thermal variances. Thermal dischargers like Midwest Generation cannot control the amount of time it will take the U.S. EPA to complete its Clarifications Rule rulemaking or to otherwise provide guidance on the Section 316(a) issue. Similarly, Midwest Generation cannot dictate when the U.S. EPA and Illinois EPA will complete their discussions regarding the standards for variance relief stemming from the U.S. EPA's March 15, 2013 letter disapproving the Citgo variance issued in PCB 2012-14. It is also unclear whether those discussions involve thermal water quality standards variance issues. It has now been over 18 months since the U.S. EPA's Citgo variance letter was issued and the Illinois EPA has not provided any indication to the Board of when those discussions may be successfully completed. This fact alone should give the Board reasonable grounds for extending its proposed 18-month postponement.

Separate and apart from the above uncertainties which caused the Board to propose a postponement, if the Board proceeds to adopt the General Use thermal standards for these waters, the lack of finality warrants a significantly longer postponement; these will essentially be interim thermal water quality standards until the Agency completes any future triennial review of the General Use thermal standards and turns back to these waters. Given the limited resources the Agency has to address thermal standards, as evidenced by its reliance here on the outside funding and assistance of Mr. Yoder the U.S. EPA provided, it is reasonable to assume that a period of at least a few years is going to be necessary to complete both the General Use and UAA waters revised thermal standards rulemaking effort. A multi-year postponement is warranted in order to attempt to reduce or avoid the substantial prejudice that otherwise will be caused by requiring thermal dischargers to spend the time and money necessary to either to seek relief from or to achieve compliance with the General Use thermal standards, followed by the likelihood that those standards will change again when the General Use thermal standards are updated. There is also a serious risk here that any effort to comply with the General Use standards will result in a waste of economic resources because the ALU B and UDIP thermal standards may become more lenient after the Agency completes its effort to update the General Use thermal standards. Similarly, if a thermal discharger instead attempts to pursue site-specific relief, it will be challenged in doing so by the existing regulatory uncertainties discussed above and potentially also by the further need to seek additional thermal site-specific relief after the General Use standards are updated.

The requested extended postponement of the thermal standards effective date will not cause any significant risk to these waters or to their designated uses. The continuing thermal discharges do not produce or contribute to concentrations of pollutants in tissues of aquatic organisms or wildlife. There is no potential for harm to humans or wildlife because thermal levels in ingested water have no “food chain concentration” effect. As the Board has noted, the previous closures of Fisk and Crawford Stations has reduced the thermal discharges to these waters. With the planned closure of Will County Unit 3, the thermal loading from the Will County station also will decrease. It is also possible that the planned conversion from coal to gas for the Joliet stations, estimated to be completed by mid-2016, may further reduce the thermal load to the UDIP. These reductions in the thermal loading to the UDIP and ALU B waters, if in fact they actually confer any benefit on aquatic life reasonably expected to be present, will occur regardless of the length of the postponement granted by the Board. But these planned changes to the stations’ operations should certainly and positively address any concerns the Board might otherwise have with a significant extension of the postponement date. And given that Midwest Generation has no plans to construct new electric generating stations on these waters, nor to its knowledge does anyone else, there is no risk that during any extended postponement, the thermal discharges will increase.

Finally, and more specific to Midwest Generation, more time is needed to assess the impacts on thermal compliance of the planned changes to the Midwest Generation Will County and Joliet Stations and to formulate an approach to compliance, which will likely include pursuing some form of site-specific variance relief. Because neither the Agency nor any of the participants had previously advocated to the Board that the General Use thermal standards were appropriate for the UAA waters, Midwest Generation has not identified or evaluated a compliance plan nor are the details of any needed site-specific relief currently known.

In the First Notice Opinion, the Board also appears to be questioning whether existing stream data collected before the closures of Fisk and Crawford provides an adequate basis on which to base the derivation of thermal standards. This concern may also arise if Midwest Generation were to seek site-specific relief from the Board based on its historical in-stream surveys and studies which pre-date the Fisk and Crawford closure, particularly in the case of the Will County Station located in closer downstream proximity to these former stations. Midwest

Generation may need to conduct further stream surveys and data collection efforts before it is in a position to commence the process of filing a petition with the Board for site-specific relief. Midwest Generation's newly renewed 2014 NPDES Permits already impose such a data collection requirement upon both the Will County and Joliet Stations to be completed over the five-year time period covered by these new permits. The required in-stream surveys take a significant amount of time both to design, to conduct and to evaluate the field data collected. Hence, the process of doing so covers a multi-year period in order to ensure that a sufficient amount of data has been presented to support the relief requested from the Board. And, as the Board knows better than Midwest Generation, it is not likely that once a thermal variance or other site specific relief petition is filed with the Board, it will be concluded in less than a year's time.

Midwest Generation submits that for all of the above reasons, if the Board proceeds as described in its First Notice Opinion, the proposed postponement of the effective date of the thermal standards must be extended to a period of at least three years or more if the intended regulatory protection necessary for existing thermal discharges from the application of General Use thermal standards to these waters is to have any real effect.

VIII. CONCLUSION

Midwest Generation appreciates the opportunity the Board has provided to respond to the issues raised in the First Notice Opinion. The proposed adoption by default of the General Use thermal standards for the ALU B and UDIP waters is neither a scientifically sound approach nor supported by the evidence presented in this rulemaking. The proposed application of the General Use thermal standards is simply not consistent with and is overly protective of the designated aquatic life uses for these waters, none of which are General Use. Midwest Generation encourages the Board to give further consideration to the proposed EA 2003 and 2007 Thermal Standards because they provide viable alternatives to the proposed General Use thermal standards. Alternatively, the AS 96-10 Standard, provided the daily maximum numeric criteria is changed to a maximum daily average, also provides a scientifically sound alternative which has proven to be protective of the higher quality General Use waters downstream of the UDIP.

Midwest Generation supports the Board's proposed inclusion of an excursion hours provision in the thermal standards, but submits that the existing excursion hours provision in the AS 96-10 Standard is better-suited to these non-General Use waters and also has a proven record of protectiveness. Regarding the issue of a cold shock provision, Midwest Generation believes that the Board has properly concluded that one is not necessary, but if the Board determines otherwise, the cold shock provision proposed by Midwest Generation is preferable to the Agency's proposal.

Rather than default to the General Use thermal standards, the Board should proceed to open a new subdocket for further consideration of appropriate thermal standards for the Use B and UDIP waters. The development of an accepted thermal standard derivation methodology in a new subdocket will provide both a scientifically sound basis for the adoption of adequately, but not overly, protective thermal standards for these waters as well as providing a basis for the future updating of the General Use thermal standards. At the same time, a thermal standards subdocket will avoid the substantial prejudice and economic unreasonableness caused to thermal dischargers by the adoption of General Use thermal standards which were never intended to apply to these waters.

Finally, should the Board nevertheless proceed to adopt the General Use thermal standards, it must reasonably provide for a longer postponement of three years or more of their effective date in order to provide the time necessary to resolve relevant regulatory issues and to allow thermal dischargers a reasonable opportunity to seek alternative relief.

Respectfully submitted,

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