BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

SIERRA CLUB, NATURAL RESOURCES DEFENSE COUNCIL, PRAIRIE RIVERS NETWORK, and ENVIRONMENTAL LAW & POLICY CENTER,	)	
Petitioners,	)	No. 15-189
v.	)	
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and MIDWEST GENERATION, LLC,	)	
Respondents.	)	

NOTICE OF FILING

TO: Service List

PLEASE TAKE NOTICE that on December 14, 2016, I caused to be filed with the Clerk of the Illinois Pollution Control Board via the "COOL" System the attached Respondent's Illinois Environmental Protection Agency's Reply in Support of Post Brief, and hereby served upon you.

Respectfully submitted,
PEOPLE OF THE STATE OF ILLINOIS
ex. rel. LISA MADIGAN, Attorney General
of the State of Illinois

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RESPONDENT ILLINOIS EPA'S
REPLY IN SUPPORT OF ITS POST-HEARING BRIEF

Respondent, Illinois Environmental Protection Agency ("Illinois EPA"), pursuant to the Hearing Officer's order dated October 17, 2016, respectfully submits this Reply in Support of its Post-Hearing Brief to the Illinois Pollution Control Board ("Board").

I. INTRODUCTION

This is an appeal by Petitioners Sierra Club, Natural Resources Defense Council, Prairie Rivers Network and Environmental Law & Policy Center (collectively "Petitioners") challenging Illinois EPA's re-issuance of a National Pollutant Discharge Elimination System ("NPDES") permit ("2015 NPDES Permit") to Respondent Midwest Generation, LLC ("MWG"). The 2015 NPDES Permit authorizes and regulates effluent discharges from MWG's Waukegan Generating Station ("Facility") in Lake County, Illinois. Petitioners specifically challenge (1) the permit's alternative effluent limit for heated effluent (or "thermal") discharges under Section 316(a) of the Clean Water Act; and (2) its provisions governing the operation of a Cooling Water Intake ("CWI") structure under Section 316(b) of the Clean Water Act.

In an order dated April 7, 2016 ("April 7, 2016 Summary Judgment Order"), the Board partly granted and partly denied the parties' respective summary judgement motions and cross-motions, reserving the following two disputed material fact issues for an evidentiary hearing that was held on October 7, 2016 ("October 7, 2016 Hearing"):

(1) Whether the process of issuing the 2015 NPDES Permit complied with Subpart K of Part 106 of the Illinois Administrative Code; and

(2) Whether the record reflects that Illinois EPA and the Facility satisfied the interim best-technology-available ("BTA") requirements of Section 316(b) and related regulations.

For the reasons set forth below, Petitioners have failed to sustain their burden of proof and the Board should accordingly affirm Illinois EPA's decision to renew the permit.

II. ARGUMENT

a. In renewing the 2015 NPDES Permit, Illinois EPA fully complied with Clean Water Act Section 316(a) & Subpart K.

Clean Water Act Section 316(a) authorizes the United States Environmental Protection Agency ("USEPA") or states administering its NPDES program to establish alternative thermal effluent limitations governing thermal discharges from regulated point sources. To qualify for an alternative thermal effluent limitation, the owner or operator of the source in question must

> demonstrate . . . that any effluent limitation proposed for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the projection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made[.]

33 U.S.C. § 1326(a). Once such a demonstration is made, Section 316(a) authorizes USEPA or the administering state to establish an alternative thermal effluent limitation

> that will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water.

Id. In 2014, the Board promulgated new regulations implementing Section 316(a) in Illinois. Those regulations, which now govern the issuance and renewal of alternative thermal effluent limitations in this state, are codified at Subpart K of Part 106 of the Illinois Administrative Code ("Subpart K"), which provides, in relevant part, as follows:

> b) Any application for renewal should include sufficient information for the Agency to compare the nature of the permittee's thermal discharge and the balanced, indigenous population of shellfish, fish, and wildlife at the time the Board granted the alternative thermal effluent limitation and the current nature of the petitioner's thermal discharge and the balanced, indigenous population of shellfish, fish, and wildlife. The permittee should be prepared to support this comparison with documentation based upon the discharger's actual operation experience during the previous permit term.
>
> c) If the permittee demonstrates that the nature of the thermal discharge has not changed and the alternative thermal effluent limitation granted by the Board has not caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is made, the Agency may include the alternative thermal effluent limitation in the permitee's renewed NPDES permit.
>
> d) If the nature of the thermal discharge has changed materially or the alternative thermal effluent limitation granted by the Board has caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is made, the Agency may not include the thermal relief granted by the Board in the permitee's renewed NPDES permit.

> The permittee must file a new petition and make the required demonstration pursuant to this Subpart before the alternative thermal effluent limitation may be included in the permittee's renewed NPDES permit.

35 Ill. Adm. Code 106.1180. Subpart K thus (1) authorizes Illinois EPA to renew alternative thermal effluent limitations; (2) sets forth the specific grounds on which the agency may do so; (3) requires certain demonstrations by the permittee in order to support renewal; and (4) obligates the permittee to "be prepared" to offer supporting documentation based on "actual operation experience during the previous permit term." 35 Ill. Adm. Code 106.1180(b).

In its April 7, 2016 Summary Judgment Order, the Board reserved for evidentiary hearing the disputed material fact issue of whether, in re-issuing the 2015 NPDES Permit, Illinois EPA complied with Subpart K and, more specifically, whether the agency considered (1) whether the nature of the thermal discharge had changed materially; and also (2) whether the alternative thermal effluent limitation caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife. As the record and the testimony presented at the October 7, 2016 Hearing make clear, Illinois EPA properly considered information concerning each of these criteria when it reissued the 2015 NPDES Permit. Additionally, notwithstanding Petitioners' baseless assertions to the contrary, based on the record before it, Illinois EPA properly determined that the answer to each question was no. The agency thus fully complied with Subpart K in issuing the 2015 NPDES Permit.

i. Illinois EPA properly considered and determined that the nature of MWG's thermal discharge had not changed materially.

As the Board found in its April 7, 2016 Summary Judgment Order, to the extent that Subpart K governed the process of issuing the 2015 NPDES Permit, it "require[d] [Illinois EPA] to consider whether 'the nature of the thermal discharge ha[d] changed materially.'" (April 7, 2016 Summary Judgment Order at 12 (citing 35 Ill. Adm. Code 106.1180(d)).) In fact, Illinois EPA determined that it had not—a finding that Petitioners now challenge, arguing that (1) reductions in heat rejection and water flow rates that the Facility achieved by retiring two electricity generating units constituted a "material" change in the nature of its thermal discharge; and (2) the possibility that the Facility's thermal plume consequently became smaller and/or more proximate to the lake shore further precluded a finding that the nature of the Facility's thermal discharge had not materially changed. As discussed below, each of these contentions is meritless.

1. The Facility's reduced rates of heat rejection and water flow did not constitute a "material" change in the nature of its thermal discharge.

Defining "material" as "important," "relevant" and/or "substantial," Petitioners argue that the Facility's reductions in heat rejection and water flow rates were "material [changes] in every sense of that word." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 9). For support, Petitioners point to MWG's own characterizations of those reductions as (1) "relevant . . . to support continuation of the 316(a) variance" (R:239); (2) "significant[]" (R:987); and (3) "dramatic[]" (Nov. 14, 2016 Post-Hearing Brief by Respondent MWG, Docket PCB 2015-189 at 24). In fact, these characterizations that Petitioners have seized upon simply reinforce Illinois EPA's basic argument in this case: namely, that the Facility's "significant" and "dramatic" reductions

in its heat rejection and water flow rates were "relevant" to the agency's assessment of whether the Facility's thermal discharge had changed "materially" insofar as they established that these changes were not "important" (or, in other words, "material") for purposes of the requisite Subpart K demonstrations because they actually decreased the amount of thermal effluent that the Facility discharges and thus, if anything, correspondingly *decreased* the Facility's environmental impacts stemming from those discharges. Petitioners' reliance on MWG's characterizations of its reductions in heat rejection and water flow rates is thus misplaced, and the Board should accordingly uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

2. Petitioners cite no evidence to suggest that the plume's location has changed, and a mere reduction in its size absent a significant change in location would not amount to a "material" change in the nature of the Facility's thermal discharge.

Petitioners next contend that, in the absence of any new studies of the Facility's thermal plume in Lake Michigan, Illinois EPA could not possibly have had sufficient "evidence in the record to support the findings required to renew the thermal variance" because the Facility's reduced heat rejection and water flow rates may have caused that plume to either shrink in size or to change location. (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 10-11). Yet a reduction in the size of the plume, which Respondents themselves have acknowledged is possible if not likely[1], would

[1] As Petitioners point out in their brief, (1) MWG's "Comments and Clarifications" following a 2013 public hearing on the 2015 NPDES Permit noted that "due to the fact that [the 1978 316(a) variance studies delineat[ing] the extent of the thermal plume] were performed when all four [electricity generating] units were operating at the [Facility], and only two units are still operating today, the results of those studies would not accurately represent the current delineation of the thermal plume from the Outfall 001 discharge" (R:988); and (2) in his October 7, 2016 testimony, Darin LeCrone—the Manager of the Industrial Unit of Illinois EPA's Division of Water Pollution Control, and the individual that supervised the agency's issuance of the subject permit—noted that the Facility's reduced flow rates following the retirement of two of its four electricity generating units "would have or should have had a corresponding effect on the size of the plume," which he testified "should have been smaller" as a result. (Tr. 142:5-6.)

simply have reduced the size of the area affected by the Facility's thermal discharges, thereby reducing the scale and scope of the Facility's associated environmental impacts. Accordingly, Illinois EPA properly determined that these reductions did not constitute "material" changes to the nature of the Facility's thermal discharge, and in the absence of any evidence of a potential *increase* in the size of the plume—which the record notably does not contain—the Board should uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

Petitioners also speculate that the Facility's reduced heat rejection and water flow rates potentially caused its thermal plume to move closer to the shore, which they further speculate could have "cause[d] greater thermal impacts to sensitive nearshore habitats because the heated effluent is not discharged into the lake with as much force as it previously was."[2] (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 10-11). However, this speculation layered upon speculation is wholly insufficient to satisfy Petitioners' burden of *proving* that Illinois EPA was incorrect in determining that the nature of the Facility's thermal discharge had not materially changed for purposes of renewing its alternative thermal effluent limitation. To meet that burden, Petitioners would have to point to actual evidence in the record indicating that (1) there is a nearshore area in the vicinity of the Facility featuring an aquatic community more thermally sensitive than that which existed in areas impacted by 1978 plume; and (2) the Facility's current plume is somehow capable of impacting that nearshore area even though the Facility's 1978 plume was not, despite a larger size and higher heat load relative to the current plume, and despite the fact that the Facility is

[2] Petitioners notably do not define what they mean by "nearshore" (i.e., what distance from the shore that term denotes) nor do the portions of the record they cite to in support of this argument.

itself situated adjacent to—and discharges directly into—that nearshore area. Petitioners' failure to adduce any such evidence from the record is dispositive of their baseless Section 316(a) claim, and the Board should accordingly uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

3. The record offers no basis on which to conclude, as Petitioners seemingly do, that the Facility's reduced water flow rate has caused its thermal discharges to become *more* environmentally harmful.

Citing the inherent complexities of thermal pollution, Petitioners also attack what they characterize as Illinois EPA's unfounded and simplistic "assumption that a reduction in flow must be equivalent to an improvement." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 11). Petitioners contend that the environmental impacts of thermal pollution must instead be evaluated based on "facility-specific factors, includ[ing] the volume of the waterbody from which cooling water is withdrawn and returned, other heat loads, the rate of water exchange, the presence of nearby refugia, and the assemblage of nearby fish species." (*Id.*). Yet they offer no argument or explanation detailing precisely (1) how the agency failed to consider these facility-specific factors, given that the record of its decision contains various items of Facility-specific information concerning several of them; or (2) even if Illinois EPA failed to consider these factors, why their consideration would have compelled a different outcome.

In fact, the record reflects that Illinois EPA's decision to renew the Facility's alternative thermal effluent limitation was indeed facility-specific, and insofar as the record contains information concerning Petitioners' suggested factors, it serves only to further bolster the merits of the agency's decision. With respect to Petitioners' first

suggested factor—"the volume of the waterbody from which cooling water is withdrawn and returned"—Lake Michigan, the waterbody from which the Facility draws its cooling water, is by any reasonable measure one of exceptional volume. Indeed, it is the second largest of the Great Lakes volume-wise, and the Great Lakes themselves are the largest group of freshwater lakes on Earth. This factor thus weighs decidedly in favor of the agency's decision to renew the Facility's alternative thermal effluent limitation.

With respect to Petitioners' second suggested factor—"other heat loads"—as the record reflects, Illinois EPA found "no reason to believe there w[ere] any additional heat loads in [Lake Michigan]" since the 1970s—a finding that Petitioners have not challenged. (R:767-68.) Additionally, heat loads in the vicinity of the Waukegan Station have steadily decreased over time: the Waukegan Station's heat load significantly decreased in 1978 and then again in 2007 (due to the retirements of Units 7 and 8, respectively (R:203)), while the nearby Zion Nuclear Power Station's thermal discharges completely ceased after that facility was retired in 1998 (Nov. 14, 2016 Motion by Respondent MWG For Leave *Instanter* to Supplement Record, Docket PCB 2015-189 at 6). This factor thus also weighs in favor of the agency's decision to renew the Facility's alternative thermal effluent limitation.

With respect to Petitioners' final suggested factor—the "assemblage of nearby fish species"—the record reflects that, with certain exceptions, the composition of the fish population in the Facility's immediate vicinity remains fundamentally similar to that which existed in the 1970s, as MWG discovered when it commissioned impingement/entrainment studies in 2003-2005 pursuant to the then-applicable

version of the Section 316(b) Phase II Rule.[3] (R:204.) Among other things, those studies revealed that the percentage abundance of alewife—the most numerically dominant species—was the same as it was during the 1970s (at 97%) (R:1213; 1216), while overall species richness had actually increased (with 45 species impinged in 2003 compared to only 30 species in 1975-76) (R:1216). This factor thus also weighs in favor of the agency's decision to renew the Facility's alternative thermal effluent limitation.

Petitioners have failed to highlight any information in the record concerning the remaining two factors they cite—the rate of water exchange and the presence of nearby refugia—nor do they explain how such information should have compelled a different decision by Illinois EPA in the factual context of this case. Meanwhile, the bulk of their suggested factors, as discussed at length above, actually weigh in favor of Illinois EPA's finding that the nature of the Facility's thermal discharge had not materially changed on account of its reduced water flow rate. The Board should accordingly affirm the agency's decision to renew the 2015 NPDES Permit.

ii. Illinois EPA properly determined that MWG's alternative thermal effluent limitation had not caused appreciable harm to a balanced, indigenous population of shellfish, fish and wildlife.

Renewal of an alternative thermal effluent limitation pursuant to Subpart K also requires a demonstration that "the alternative thermal effluent limitation granted by the Board has not caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is made." 35 Ill. Adm. Code 106.1180(c). To that end, Subpart K requires the permitting authority to "compare . . . the balanced, indigenous population of shellfish, fish, and

[3] Petitioners' methodological criticisms of these studies are addressed in Section II(a)(ii)(3) of this brief.

wildlife at the time the Board granted the alternative thermal effluent limitation and the current nature of . . . the balanced, indigenous population of shellfish, fish, and wildlife." 35 Ill. Adm. Code 106.1180(a). Subpart K also requires the permittee to "be prepared to support this comparison with documentation based upon the discharger's actual operation experience during the previous permit term." *Id.*

Here, the record and the testimony presented at the October 7, 2016 Hearing reveal that, as required by Subpart K, Illinois EPA properly determined that MWG's alternative thermal effluent limitation has not caused appreciable harm to aquatic life in Lake Michigan. This determination was based on (1) consideration of the fact that the Facility's decreased thermal output resulting from the retirement of Units 5 and 6 correspondingly reduced its thermal impact on Lake Michigan aquatic life in the vicinity of the Facility, as discussed extensively above; (2) an assessment of Lake Michigan's balanced, indigenous population of shellfish, fish, and wildlife as it existed in 1978, when the Board originally granted MWG's request for thermal relief[4]; and (3) a comparison of the 1978 population with Lake Michigan's current balanced, indigenous population of shellfish, fish, and wildlife.[5]

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[4] As recounted in Darin LeCrone's testimony at the October 7, 2016 hearing and again in Illinois EPA's initial post-hearing brief, this assessment of the 1978 population was based on the Board's own findings from that time. (October 7, 2016 Hearing Tr. at p. 122, lines 21-24; p. 123, lines 1-4.) Specifically, in August 1978, based on expert testimony backed by data compiled by two environmental consulting firms, the Board found "virtually no damage . . . to the Lake Michigan environment as a result of thermal discharges" from the Facility and ordered that its permit be modified to include the alternative thermal effluent limit. (R:2.) The Board's August 1978 order further noted that "while some changes in the relative abundance of various kinds of fish have been noted, these changes are more attributable to competition among the species than to thermal changes in the environment." (R:2.) The following month, in September 1978, the Board convened a new hearing to resolve some ambiguities from the record of the previous decision, but its assessment was unchanged: "It is the Opinion of the Board that [Waukegan Generating Station has] not caused and cannot be reasonably expected to cause significant ecological damage to receiving waters." (R:1116.)

[5] After assessing the 1978 population based on the Board's own findings from that time, Illinois EPA then compared that population with the current population to determine if there were any adverse impacts or changes attributable to the Facility's thermal discharge. The agency's information concerning the current population was derived from several sources: (1) the opinion of the Illinois Department of Natural

Petitioners nonetheless contend that "[t]he record is devoid of substantial evidence for [Illinois EPA] to support such a finding," and they advance three discrete arguments to that effect: (1) that there are no studies in the record evaluating impacts of thermal dischargers on aquatic life, either from the 1970s or from the Facility's previous permit term; (2) that there is no factual basis for Illinois EPA's purported "assumption" that observed species declines throughout Lake Michigan are unrelated to the Facility's thermal discharges; and (3) that Illinois EPA failed to comply with Subpart K by neglecting to define precisely what constitutes a "balanced indigenous population of fish, shellfish and wildlife" within the meaning of Subpart K. As discussed below, each of these arguments is meritless.

1. Subpart K's plain language merely requires permittees to "be prepared to" offer certain documentation concerning aquatic life in receiving waters—a requirement Petitioners have failed to show was violated.

As an initial matter, Petitioners argue that the permit renewal process violated Subpart K because the record is supposedly bereft of any "documentation based upon [the Facility's] actual operation experience during the previous permit term" (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 12), which Subpart K obligates the permittee to "be prepared to" offer as support for the required "comparison" between "the balanced, indigenous population of shellfish, fish, and

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Resources, based on local electrofishing studies, that aquatic declines in Lake Michigan were the result of invasive species proliferation (R:618; October 7, 2016 Hearing Tr. at 64, 127-128); (2) data submitted by MWG, summarized in more detail in Section II(a)(ii)(2) of this brief, indicating that the local aquatic community had not significantly changed since the 1970s and continued to be dominated by invasive species (R:1216; Hearing Tr. at 126-27); and (3) a 2009 study by the United States Geological Survey attributing declines in prey fish biomass to poor fish recruitment, habitat loss and predation (R:222). Although the agency's comparison of the current aquatic population to the 1978 aquatic population revealed "significant changes in the aquatic community" during that timeframe—such as "declines in yellow perch and alewife populations"—information from the record, as summarized above, and the testimony presented at the October 7, 2016 Hearing both indicated that those changes were actually the result of other causes. (R:673; October 7, 2016 Hearing Tr. at p. 125, lines 4-9.)

wildlife at the time the Board granted the alternative thermal effluent limitation and the current nature of . . . the balanced, indigenous population of shellfish, fish, and wildlife." 35 Ill. Adm. Code 106.1180. However, as this language makes clear, Subpart K merely requires permittees to "be prepared" to offer such documentation. Accordingly, even if Petitioners are correct that such documentation is absent from the record—which it is not, as discussed below—that absence alone would not violate Subpart K unless Petitioners could also demonstrate that MWG was unprepared to provide it if so requested. Petitioners have notably failed to make such a showing, and the Board should thus uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

2. Even if Petitioners' reading of Subpart K is correct, the record reflects that the permit renewal process complied with the regulation.

Even if Subpart K required MWG to provide this documentation, however, the record reflects that the company did so and thereby complied. Specifically, in 2005, MWG submitted to Illinois EPA a "Proposal for Information Collection" ("PIC") detailing its plans for a multi-year sampling study pursuant to the then-applicable version of the Section 316(b) Phase II Rule. (R:1204.) That PIC also contained the results of the initial phase of that sampling study—conducted from 2003 to 2004, during the Facility's previous permit cycle and based on its actual operation experience, as required by Subpart K—during which the company and its contractor, EA Engineering, Science & Technology ("EA"), assessed the numbers and types of fish being impinged at the facility's CWI Structure. Although this study was conducted in an effort to comply with Section 316(b) and its then-applicable implementing regulations—which concern impingement and entrainment—the results were also relevant to Illinois EPA's assessments of aquatic life in the vicinity of the Facility for purposes of Section 316(a)

because they provided insights into the nature of the species composition in that area (which the initial phase of the sampling study found was roughly similar to that which existed in the 1970s, when the Board originally granted the Facility its alternative thermal effluent limitation (R:1213-14; 1215-16), suggested that deepwater aquatic species are largely absent from the area of the Facility's thermal plume (R:204; October 7, 2016 Hearing Tr. at p. 127, lines 9-12), and revealed that regional species richness had actually increased since it was last studied in the 1970s (R:1216). These results belie Petitioners' unfounded speculation that the Facility's reduced thermal discharge somehow appreciably harmed aquatic populations in its vicinity even though its previous, larger discharge did not. The Board should accordingly uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

3. Petitioners' criticisms of the initial PIC data are baseless.

Petitioners also attack the methodology that MWG used to collect the initial PIC data, complaining that "[c]ounting the fish that happen to get sucked into a cooling water intake is not a legitimate way to conduct a population study, and says absolutely nothing about how thermal discharges impact a balanced indigenous population of fish, shellfish, and wildlife." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 13.) Petitioners also complain that the "proposed study was never completed, and those preliminary data were not subject to either quality control/quality assurance protocols or the rigors of actual scientific analysis." (*Id.*)

As an initial matter, contrary to Petitioners' assertions, the initial PIC data is, in fact, relevant to evaluating the Facility's environmental impacts on nearby fish populations because it undercuts the unsupported notion that the Facility's thermal

discharges could be responsible for relative declines in certain species populations (such as alewives, the relative abundance of which remained the same (R:204; 1216)), harmful effects on others (such as deepwater species like salmonids, sculpins and coregonids, which the data revealed are impinged in low numbers and therefore not even present in the area of the thermal discharge (R:204; October 7, 2016 Hearing Tr. at p. 127, lines 9-12)), and/or changes in regional species composition (such as a decrease in overall regional species richness—which the data revealed had actually increased (R:1216)).

Additionally, Petitioners' methodological criticisms of the initial PIC data lack any grounding in the actual requirements of Subpart K, which is conspicuously silent as to the precise manner in which a permittee must develop and present any requested "documentation based upon the discharger's actual operation experience during the previous permit term." 35 Ill. Adm. Code 106.1180. Consequently, Petitioners are unable to cite even a single applicable legal standard or requirement that they believe the initial PIC data failed to meet and that the Board could actually enforce. Indeed, despite having the burden of proof, Petitioners do not even elaborate as to exactly what, in their view, constitutes a "legitimate way to conduct a population study," or what specific types of "quality control/quality assurance protocols" they believe should be employed. It is also worth noting that Petitioners could have availed themselves of the opportunity to substantiate and flesh out their technical and methodological criticisms of the initial PIC data by presenting expert testimony at the October 7, 2016 Hearing, but they opted not do so. The Board should accordingly uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

4. The absence from the record of studies from the 1970s is immaterial to this proceeding.

Petitioners also seize on the absence of "the original studies that supported the thermal variance" from the record. Invoking the "Best Evidence Rule" set forth in Ill. R. Evid. 1002—which provides that "[t]o prove the content of a writing, recording, or photograph, the original writing, recording, or photograph is required, except as otherwise provided in these rules or by statute"—Petitioners argue that "the record contains no such alternative evidence of the contents of the missing studies that could be admitted" and that "[t]here is thus **no** evidence in the record that the Board may consider regarding the thermal impacts justification for the 1978 thermal variance." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 14-15 (emphasis in original).)

Petitioners' reliance on the Best Evidence Rule is not only misplaced, it suggests they misapprehend the basic nature of Illinois EPA's argument in this case. As recited above, Illinois EPA's finding—namely, that the Facility's current thermal discharge has not caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in Lake Michigan—was based on three things: (1) consideration of the fact that the Facility's decreased thermal output resulting from the retirement of Units 5 and 6 correspondingly reduced its thermal impact on aquatic life in the vicinity of the Facility; (2) an assessment of Lake Michigan's balanced, indigenous population of shellfish, fish, and wildlife as it existed in 1978, when the Board originally granted MWG's request for thermal relief; and (3) a comparison of the 1978 population with Lake Michigan's current balanced, indigenous population of shellfish, fish, and wildlife.

As recounted in Darin LeCrone's testimony at the October 7, 2016 Hearing, for its

assessment of Lake Michigan's balanced, indigenous population of shellfish, fish, and wildlife as it existed in 1978, Illinois EPA consulted the Board's orders from that time, which, based on the findings of various studies, found that the Facility's thermal discharge was not appreciably harming aquatic life in Lake Michigan.[6] (October 7, 2016 Hearing Tr. at p. 122, lines 21-24; p. 123, lines 1-4.) Illinois EPA then used the findings contained in those orders as a baseline against which it then compared Lake Michigan's current population of shellfish, fish, and wildlife. (*Id*. at p. 123, lines 11-19.) Based on that comparison, it determined that the current population was not being appreciably harmed by the Facility's thermal discharge. (*Id*. at p. 130, lines 10-15.)

Although that comparison revealed "significant changes in the aquatic community" during that timeframe—such as "declines in yellow perch and alewife populations"—the record and testimony presented at the October 7, 2016 Hearing indicate that those changes were actually the result of lake productivity declines and invasive species proliferation rather than the effects of thermal discharges. (R:673; October 7, 2016 Hearing Tr. at p. 125, lines 4-9.) Other contemporary studies of Lake Michigan aquatic life similarly indicated that thermal discharges were not the cause of any observed aquatic population declines in the lake. (R:222, 231-32.) Illinois EPA accordingly found that the Facility's thermal discharge had not appreciably harmed aquatic life in Lake Michigan.

[6] In August 1978, based on expert testimony backed by data compiled by two environmental consulting firms, the Board found "virtually no damage . . . to the Lake Michigan environment as a result of thermal discharges" from the Facility and ordered that its permit be modified to include the alternative thermal effluent limit. (R:2.) The Board's August 1978 order further noted that "while some changes in the relative abundance of various kinds of fish have been noted, these changes are more attributable to competition among the species than to thermal changes in the environment." (R:2.) The following month, in September 1978, the Board convened a new hearing to resolve some ambiguities from the record of the previous decision, but its assessment was unchanged: "It is the Opinion of the Board that [Waukegan Generating Station has] not caused and cannot be reasonably expected to cause significant ecological damage to receiving waters." (R:1116.)

As this reasoning illustrates, to the extent that Illinois EPA relied upon any writings concerning the impacts of the Facility's thermal discharges on Lake Michigan's balanced, indigenous population of shellfish, fish, and wildlife as it existed in 1978, those writings consisted of the Board's own orders from that time, all of which already appear in the record. The absence from the record of the extensive technical basis for those orders is of no consequence because all that was relevant for purposes of Illinois EPA's Subpart K analysis were those orders' findings. The Best Evidence Rule is thus inapposite, and the Board should uphold Illinois EPA's decision to renew the 2015 NPDES Permit.

5. The record offers no basis on which to infer a causal link between the Facility's thermal discharge and observed declines in certain Lake Michigan aquatic populations and actually indicates that the two are unrelated.

As Petitioners note, the record indicates that "[t]here have been significant changes in the aquatic community" of Lake Michigan since the Board's 1978 order granting the Facility its alternative thermal effluent limitation, including "declines in yellow perch and alewife populations" that have had ripple effects on the health of salmon and trout populations. (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 15.) Although Illinois EPA found that these changes are unrelated to the Facility's thermal discharge, Petitioners question that finding, arguing that "the record contains no factual basis for this assumption" and speculating that "thermal stressors" might be "exacerbating those population trends." (*Id.*)

In fact, the record and testimony presented in this case identified several factors as being responsible for these declines, none of which pertain to the Facility's thermal discharges: (1) "[d]eclines in productivity" and "changes in . . . lower trophic level

species composition" that are "largely attributed to the effects of invasive species" (R:618, 673); (2) "a prolonged period of relatively low bloater year-class strength during 1992-2009" (R:231); and (3) "relatively high predation on alewives by Chinook salmon during the 2000s" (R:231). Additionally, as Darin LeCrone testified at the October 7 2016 Hearing, these declines have been observed on a lake-wide basis rather than in the immediate vicinity of the Facility, as one would expect if the Facility's thermal discharges were causing them. (October 7, 2016 Hearing Tr. at p. 129, lines 6-24; p. 130, lines 1-9.) Illinois EPA's finding of no appreciable harm was thus adequately supported by information in the record, and the Board should accordingly uphold the agency's decision to renew the 2015 NPDES Permit.

6. It's not Illinois EPA's job to define the language of Subpart K.

Petitioners also attack Illinois EPA's decision to renew the 2015 NPDES Permit on the ground that the agency cannot "identify anywhere in the record where the agency explains what constitutes a balanced, indigenous population of fish, shellfish and wildlife for the receiving waters in Lake Michigan, let alone confirms that a BIP is even present in the receiving waters." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 15-16.) Petitioners' argument has no basis in the actual language or requirements of Subpart K, however. That regulation provides, in relevant part, that

> b) Any application for renewal should include sufficient information for the Agency to compare . . . the balanced, indigenous population of shellfish, fish, and wildlife at the time the Board granted the alternative thermal effluent limitation and the current . . . balanced, indigenous population of shellfish, fish, and wildlife. [. . .]

> c) If the permittee demonstrates that . . . the alternative thermal effluent limitation granted by the Board has not caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is made, the Agency may include the alternative thermal effluent limitation in the permitee's renewed NPDES permit.
>
> d) If . . . the alternative thermal effluent limitation granted by the Board has caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is made, the Agency may not include the thermal relief granted by the Board in the permitee's renewed NPDES permit. [. . .]

35 Ill. Adm. Code 106.1180. As this language makes clear, once the Board grants an alternative thermal effluent limitation based on a finding that it will not appreciably harm "a balanced, indigenous population of shellfish, fish, and wildlife" in the receiving water, Subpart K does not obligate Illinois EPA to re-ascertain whether that population exists each time the subject permit is up for renewal. Rather, the agency's task, as the regulation expressly provides, is to determine "[i]f . . . the alternative thermal effluent limitation granted by the Board has caused appreciable harm[.]" *Id.* If agency finds that it has, then the regulation prohibits renewal of the alternative thermal effluent limitation. *Id.* In this case, having found that it was not, Illinois EPA complied with Subpart K in renewing the Facility's alternative thermal effluent limitation and the Board should uphold the agency's decision to do so.

iii. Subpart K does not require the Board to re-establish an alternative thermal effluent limitation before Illinois EPA can renew it.

Subpart K provides, among other things, that a "permittee may request continuation of an alternative thermal effluent limitation granted by the Board,

pursuant to this Subpart, as part of its NPDES permit renewal application." 35 Ill. Adm. Code 106.1180(a). Read most logically, this language simply means that, pursuant to Subpart K—which now governs the process of renewing alternative thermal effluent limitations in Illinois—a permittee can request renewal of an alternative thermal effluent limitation previously granted by the Board in its NPDES application, which is submitted to Illinois EPA rather than to the Board (i.e., the body that originally granted that thermal relief).

Under Petitioners' proposed reading of this language, however, the clause "pursuant to this Subpart" would selectively modify only the preceding four words (i.e., "granted by this Board") rather than the entire preceding clause that contains them (i.e., "[t]he permitee may request continuation of an alternative thermal effluent limitation granted by the Board"). The effect of this reading would be to deprive Illinois EPA of the ability to "renew 316(a) variances that were not granted by the Board pursuant to Subpart K." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 18.) In other words, Petitioners' proposed reading would effectively nullify all alternative thermal effluent limitations existing at the time of Subpart K's promulgation by requiring them to be re-established by the Board, just like brand-new alternative thermal effluent limitations, before Illinois EPA could begin renewing them.

Petitioners' proposed reading of Subpart K is profoundly problematic not just because it rests on a strained and grammatically untenable construction of the regulation's plain language, but also because it would amount to an impermissible retroactive application of the regulation by virtue of "impos[ing] new duties with respect to transactions already completed"—in this case, the burdens associated with making every permittee apply again for a new alternative limit, a considerably lengthier process

than simply renewing existing limitations. *Schweickert v. AG Services of America, Inc.*, 355 Ill. App.3d 439, 444 (3d Dist. 2005) (holding that a statutory amendment, even if purely procedural, "may not be applied retroactively if the statute would have a retroactive impact," such as if it "imposes new duties with respect to transactions already completed"); *see also Itasca Public School Dist. No. 10 v. Ward*, 179 Ill. App.3d 920, 926 (1st Dist. 1989) (holding that this principle "is equally applicable to rules and regulations promulgated by an administrative body pursuant to authority delegated by the legislature"). Accordingly, the Board should reject Petitioners' proposed reading of Subpart K and uphold the agency's decision to renew the 2015 NPDES Permit.

iv. Contrary to Petitioners' baseless assertions, Illinois EPA has had the authority to renew alternative thermal effluent limitations ever since it first began administering Illinois' NPDES permit program—an arrangement that Subpart K continues.

Petitioners also argue that "[p]rior to promulgation of the Subpart K rules in 2014, [Illinois EPA] was not empowered to grant or renew a thermal variance of any kind," on which ground Petitioners ask the Board to find that "there existed no legally-valid thermal variance of any kind that could be eligible for renewal by [Illinois EPA] in the 2015 NPDES Permit." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 19.) Yet the central premise of this argument is mistaken: Illinois EPA has had the authority to renew alternative thermal effluent limitations ever since USEPA first delegated administration of the NPDES permit program to the state of Illinois in 1977—an arrangement that Subpart K continues. In its application for authority to administer that program in July 1977, Illinois EPA explained how Section 316(a) of the Clean Water Act would be implemented in Illinois:

> A special provision to implement 40 C.F.R. Part 122,

> Thermal Discharges, which sets forth the procedure prescribed by Section 316(a) of the FWPA, is contained in Rule 410(c) of Chapter 3. Rule 4 10(c) allows the Board to determine that an alternative thermal standard, other than that found in 40 CFR Part 122 and Chapter 3, should apply to a particular thermal discharge.
>
> The concept of reviewing the effect of a thermal discharge on a receiving stream is not a recent addition to the Board's Water Pollution Regulations. Rule 203(i)(5), which became effective on April 7, 1972, requires that owners or operators of a source of heated effluent which discharges 0.5 billion BTU per hour or more demonstrate in a hearing before the Board that the discharge from that source has not caused and cannot reasonably be expected to cause a significant ecological damage to the receiving waters. Upon failure to prove the above, the Board will order that appropriate corrective measures shall be taken. The Agency proposes that the demonstration requirements found in 40 CFR Part 122 and the supporting technical documents be utilized in the determination of an alternative thermal standard pursuant to Rule 410(c) and Rule 203(i)(5).

(Feb. 25, 2016 Reply by Illinois EPA in Support of its Cross-Motion for Summary Judgment, Docket PCB 2015-189, Ex. A. at 27.) Since that application was submitted, each of the referenced regulations has been re-codified, and the federal Section 316(a) regulations originally found in Part 122 and have been moved to 40 C.F.R. §§ 125.70, 125.71, 125.72 and 125.73 (40 C.F.R. Part 125 subpart H).[7] 40 C.F.R. § 125.72 vests the applicable permitting agency with the authority to renew alternative thermal effluent limitations. It provides in relevant part that

> [a]ny application for the renewal of a section 316(a) variance shall include only such information described in paragraphs (a) and (b) of this section as the Director requests within 60 days after receipt of the permit application.

40 C.F.R. § 125.72(c). The regulation thus expressly authorizes "the Director" (or, in

[7] Additionally, the Board's former rule 410(c) is now found in 35 Ill. Adm. Code 304.141(c), and Rule 203(i)(5) refers to the Heated Effluent Demonstration procedures found in 35 Ill. Adm. Code 302.21 1(f)-(i) and Part 106 of the Board's procedural rules.

this case, Illinois EPA, since Illinois administers a delegated NPDES permit program) to renew alternative thermal effluent limitations, and Illinois EPA has duly and validly exercised that authority ever since it began administering Illinois' NPDES program.

b. In renewing the 2015 NPDES Permit, Illinois EPA fully complied with Clean Water Act Section 316(b).

Section 316(b) of the Clean Water Act requires that the location, design, construction, and capacity of CWI structures at certain facilities "reflect the best technology available for minimizing adverse environmental impact." 33 U.S.C. § 1326(b). USEPA recently issued a regulation implementing these requirements—the Existing Facilities Rule—which requires CWI structures at existing facilities to (1) submit certain items of information in their applications for NPDES permit renewals; and (2) implement best technology available ("BTA") standards set forth in Section 316(b)'s implementing regulations.

In its April 7, 2016 Summary Judgment Order, the Board held that the interim BTA standard set forth in 40 C.F.R. § 125.98(b)(6) is the applicable standard governing the Facility's CWI structure, and reserved for evidentiary hearing the issue of whether the Facility's CWI structure actually met that standard. That provision provides as follows:

> [t]he Director must establish interim BTA requirements in the permit on a site-specific basis based on the Director's best professional judgment in accordance with § 125.90(b) and 40 CFR 401.14.[8]

Id. 40 C.F.R. § 125.90(b), in turn, provides that

> [CWI] structures not subject to requirements under §§

[8] 40 C.F.R. § 401.14 provides that "[t]he location, design, construction and capacity of cooling water intake structures of any point source for which a standard is established pursuant to section 301 or 306 of the Act shall reflect the best technology available for minimizing adverse environmental impact, in accordance with the provisions of part 402 of this chapter."

> 125.94 through 125.99 or subparts I or N of this part must meet requirements under section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis.

As authorized by these provisions, Special Condition 7 of the 2015 NPDES Permit expressly reflects Illinois EPA's determination,

> [b]ased on available information, . . . that the operation of the [CWI] structure meets the equivalent of [BTA] in accordance with the Best Professional Judgment provisions of 40 CFR 125.3 and 40 CFR 125.90(b), based on information available at the time of permit issuance.

(R:696.) Although Special Condition 7 cites 40 CFR 125.3 as one basis for Illinois EPA's BPJ determination, as Darin LeCrone acknowledged at the October 7, 2016 Hearing, that particular citation was not necessary to Special Condition 7 because the most directly applicable BPJ provisions are actually found at 40 CFR 125.90(b), which Special Condition 7 also cites, and 40 CFR § 401.14, which Special Condition 7 does not cite, but which is specific to intake structures like the Facility's.[9] (October 7, 2016 Hearing Tr. at p. 137, lines 9-14.)

i. The Board should reject Petitioners' attempt to manufacture new legal requirements for making an interim BTA determination concerning a CWI structure.

Petitioners contend that Illinois EPA's renewal of the 2015 NPDES Permit failed to comply with these regulations. First, Petitioners complain that "the interim BTA for this [CWI] structure is defined nowhere in the record" and that "Special Condition 7, which addresses the [CWI] structure, does not even identify what characteristics of the [CWI] structure or the operation of that structure represent the interim 'best technology available' to minimize adverse environmental impact." (Nov. 14, 2016 Post-Hearing

[9] As Darin LeCrone further testified, Illinois EPA only included a citation to 40 CFR 125.3 in the language of Special Condition 7 in an attempt to "incorporate[] the entirety of the concept of best professional judgment." (October 7, 2016 Hearing Tr. at p. 137, lines 2-8.)

Brief by Petitioners, Docket PCB 2015-189 at 21-22.) In making this argument, Petitioners are yet again attempting—this time in the context of interim BTA determinations pursuant to Section 316(b)—to essentially invent and impose new requirements on the NPDES permit renewal process that have no basis in law. Petitioners thus predictably fail to cite any legal authority whatsoever to support their arguments that Illinois EPA was somehow required either to (1) define the "interim BTA" legal standard in the record (an utterly nonsensical proposition, given Illinois EPA did even not promulgate that federal standard, which is already defined by law in the USEPA regulations cited above); or (2) identify certain characteristics of the CWI structure in Special Condition 7 itself. Because there is no legally cognizable basis on which to require a permitting authority to do either of these things, the Board should uphold Illinois EPA's decision to renew the 2015 NPDES Permit, the renewal of which complied with the applicable Section 316(b) implementing regulations discussed above.

ii. The Board should reject Petitioners' attempt to manufacture new legal requirements for making an interim BTA determination concerning a CWI structure.

Petitioners also argue that "[n]othing in the record suggests that either [Illinois EPA] or [MWG] knew or considered how 'the operation of the [CWI] structure' impacts aquatic life." (Nov. 14, 2016 Post-Hearing Brief by Petitioners, Docket PCB 2015-189 at 22.) This assertion is simply false. The BTA standard requires Illinois EPA to "determine[] whether appropriate studies have been performed, whether a given facility has minimized adverse environmental impact, and what, if any, technologies may be required." 69 Fed. Reg. 41576, 41584 (July 9, 2004) (describing system of case-by-case BTA permits applied prior to 2014). In renewing the 2015 NPDES Permit, Illinois EPA based its decision on extensive information regarding impacts on aquatic life, including

impingement studies that had been relied on for decades without objection from the USEPA. (R:770, 1157-65; October 7, 2016 Hearing Tr. at p. 137, lines 15-24; p. 138, lines 1-6.) Based on those studies, Illinois EPA appropriately concluded, on an interim basis, that the Facility's CWI structure constituted BTA for minimizing impingement mortality and entrainment. Additionally, as Darin LeCrone testified at the October 7, 2016 Hearing, "[t]here is nothing in the record that indicates [the CWI structure at the Waukegan Facility] would not constitute an interim Best Technology Available based on our best professional judgment." (October 7, 2016 Hearing Tr. at p. 138, lines 7-15.) Notably, this position was shared by USEPA in its own comments on the draft permit. (R:622.) Illinois EPA's renewal of the 2015 NPDES Permit thus complied with 40 C.F.R. § 125.98(b)(6) and the Board should uphold that decision.

III. CONCLUSION

For the reasons set forth above, Petitioners have failed to sustain their burden of proof in their challenge to Illinois EPA's renewal of the 2015 NPDES Permit and the Board should accordingly affirm Illinois EPA's decision to renew MWG's NPDES Permit. If the Board does not affirm that decision in full, however, Illinois EPA respectfully requests that it remand with instructions to the agency to provide additional justification for its permitting decision. Because the precise extent of the additional information that Illinois EPA would need to review and assess upon such a remand is currently unknown, the agency respectfully requests that the Board reserve its

determination as to the appropriate timeframe and/or deadline for such relief until it has first ruled on the scope of remand.

Dated: December 14, 2016

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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CERTIFICATE OF SERVICE

I, Angad Nagra, sent the above Respondent's Illinois Environmental Protection Agency's Reply in Support of Post Hearing Brief, on this day 14th, December, 2016, and served the following individuals via mail and electronic mail:

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