

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:)

SIERRA CLUB, NATURAL)
RESOURCES DEFENSE COUNCIL,)
PRAIRIE RIVERS NETWORK, and)
ENVIRONMENTAL LAW &)
POLICY CENTER)

Petitioners,)

v.)

ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY and)
MIDWEST GENERATION, LLC)

Respondents.

PCB 15-189
(Third Party NPDES Appeal)

NOTICE OF ELECTRONIC FILING

To: Attached Service List

PLEASE TAKE NOTICE that on November 14, 2016, I electronically filed with the Clerk of the Illinois Pollution Control Board: **PETITIONERS' POST-HEARING BRIEF**, a copy of which is served on you along with this notice.

Respectfully submitted,



Matthew Glover
Legal Assistant
Environmental Law & Policy Center
35 E. Wacker Dr., Suite 1600
Chicago, IL 60601
mglover@elpc.org
ph (312) 795-3719

Dated: November 14, 2016

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

SIERRA CLUB, NATURAL)	
RESOURCES DEFENSE COUNCIL,)	
PRAIRIE RIVERS NETWORK, and)	
ENVIRONMENTAL LAW &)	
POLICY CENTER)	
)	
Petitioners,)	
)	
v.)	PCB 15-189
)	(Third Party NPDES Appeal)
)	
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY and)	
MIDWEST GENERATION, LLC)	
)	
)	
Respondents.)	

PETITIONERS' POST-HEARING BRIEF

Petitioners (Sierra Club, Natural Resources Defense Council, Prairie Rivers Network and Environmental Law & Policy Center) submit this post-hearing brief concerning the two factual issues remanded for hearing by the Pollution Control Board (Board) in this challenge under 415 ILCS 5/40(e) of an NPDES permit issued Illinois Environmental Protection Agency (“IEPA” or “Agency”) to Midwest Generation’s Waukegan Station. In both instances, Petitioners have demonstrated that the record contains no substantial evidence to support IEPA’s grant of a variance based on stale, decades-old information. The evidence presented at hearing confirms that IEPA purported to renew a 1978 thermal variance with none of the required demonstrations: that the nature of the thermal discharge has not changed since the original variance was granted, or that the variance has not caused appreciable harm to a balanced indigenous population of fish, shellfish, and wildlife—even leaving aside the critical problem that IEPA lacked legal authority to renew the variance to begin with. Second, the evidence at hearing confirms that IEPA not only failed to consider the factors necessary to establish the interim Best Technology Available

for the facility's cooling water intake structure—available technologies to minimize adverse environmental impact, and contemporary data regarding impacts on aquatic life—but, astonishingly, failed to even define the interim Best Technology Available (BTA) in the permit. It is thus clear that there is no basis for the agency actions in the record, let alone substantial evidence to support those actions. All of the evidence proffered to support the Agency's actions is either missing entirely or fatally unreliable.

STATEMENT OF THE CASE

Petitioners' Statement of Facts in the October 22, 2015 Motion for Summary Judgment sets forth the relevant facts from the record regarding IEPA's issuance of a final NPDES permit ("Permit") to the Waukegan Station on March 25, 2015. (Pet'r Br. 4-12.) Briefly, Special Condition 4 purports to continue the thermal variance from 1978. IEPA's Responsiveness Summary rationalizes the purported continuation of the thermal variance as follows:

The permit controls thermal discharges in accordance with PCB 78-72, -73 Consolidated dated September 21, 1978. Unit 6, rated at 100 MW, was retired on December 21, 2007, eliminating any discharge from the unit and further reducing the thermal load to Lake Michigan. To ensure 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 reissued permit requires specific activities and studies

(R. 0662.)

On the impingement and entrainment issue, Special Condition 7 sets forth a more detailed list of information the permittee must submit regarding the Waukegan Station's intake structure and its impacts on aquatic life, and contains this new statement:

Based on available information, the Agency has determined that the operation of the cooling water intake structure meets the equivalent of Best Technology Available (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. 0696-97.)

Petitioners filed this timely third-party permit appeal on April 29, 2015. Motions for summary judgment were fully briefed, and an Opinion and Order of the Board on April 7, 2016 granted summary judgment on several issues and left several issues to be decided after a hearing. That hearing took place on October 5, 2016.

Several of the Board's legal findings from the April 7, 2016 Opinion and Order ("Order") set the foundation for the issues left to be decided. First, the Board found that Petitioners have standing to bring both counts in the petition. (Order at 2.) Petitioners bear the burden of proof to show that the Permit violates the Illinois Environmental Protection Act or Board regulations. (*Id.* at 9.)

Regarding the thermal discharges, the Board held that an alternative thermal effluent limitation expires along with the NPDES permit with which it is associated. (*Id.* at 12.) The Order also held that the Board's 2014 Subpart K regulations apply to the 2015 issuance of the permit. (*Id.* at 10.) Under those regulations,

Subpart K requires IEPA to consider whether "the nature of the thermal discharge has changed materially." 35 Ill. Adm. Code 106.1180(d). . . . Subpart K also requires IEPA to consider whether the alternative limitation granted by the Board has caused "appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife" in Lake Michigan when renewing an alternative limitation. 35 Ill. Adm. Code 106.1180(d).

(*Id.* at 12.) The Board left the factual question of whether IEPA considered those things to be decided after the hearing. (*Id.*)

Regarding the cooling water intake structure, the Board held that IEPA was required under 40 C.F.R. §125.98(b)(6) to establish interim Best Technology Available (BTA) standards in the Permit. (*Id.* at 15.) The question of whether IEPA complied with that requirement was left to be resolved after the hearing. (*Id.* at 16.)

At hearing, the Agency confirmed that the nature of the thermal discharges has changed because the retirement of one or more units has changed the characteristics of the discharge. (Tr. 15:17-24; 119:13-120:3.) The Agency also confirmed that neither the studies nor a summary of the studies justifying the 1978 thermal variance are available to the Agency, nor are they included in the administrative record. (Tr. 34:3-7; 36:2- 10.) The Agency could cite to no studies of the impacts of the thermal discharges on a balanced indigenous population of fish, shellfish, and wildlife that have been conducted in the last forty years. (Tr. 29:11-30:11.) Instead, the Agency pointed to some field data described in a letter from Midwest Generation, which were apparently collected for a different purpose, but could not explain the source of those data or put them in the context of a scientific study. (Tr. 23:23-26:1; 26:20-27:4; 48:13-17.)

IEPA presented inconsistent testimony as to whether it had established an interim Best Technology Available standard for the Waukegan Station cooling water intake structure. (Tr. 46:3-4, 46:16-20; 85:12-22.) Either way, the Agency admits that the permit does not define what attributes of the cooling water intake structure represent the interim Best Technology Available. (Tr. 88:7-20, R. 696.) IEPA could not identify any operational or control measures used by the existing structure that minimize adverse environmental impact. (Tr. 93:8-94:3; 92:11-16; 94:4-8; 96:15-97:9; 98:2-14.) Furthermore, the Agency admits it did not consider any potentially available technologies to minimize adverse environmental impact. (Tr. 90:18-24.) Finally, the Agency confirmed that the 1975-76 impingement and entrainment studies that it relied on are not

included in the administrative record. (Tr. 143:9-19.) The Agency cites to some preliminary data from a 2005 study that proposed to evaluate impingement and entrainment impacts at Waukegan station, (Tr. 62:24-63:7), but agrees those data were not subject to quality assurance/quality control procedures or scientific analysis, (Tr. 49:10-51:13), and that the proposed study was never completed. (Tr. 48:24-49:1.)

BURDEN OF PROOF

Petitioners, as third-party permit appellants, bear the burden of proof that the Permit as issued will violate the Environmental Protection Act or Board regulations. 415 ILCS 5/40(a)(1). *See also Des Plaines River Watershed Alliance v. IEPA*, PCB 04-88 at 12 (April 19, 2007) (aff'd sub nom. *IEPA v. IPCB*, 896 N.E.2d 479). Review of the agency's action must be "exclusively on the basis of the record before the Agency," 415 ILCS § 5/40(e)(3). Accordingly, Petitioners will carry their burden of proof by demonstrating that there is no evidence in the administrative record supporting the agency's action.

This principle is well-demonstrated in *Ill. Env'tl. Prot. Agency v. Ill. Pollution Control Bd.*, 896 N.E.2d 479 (Ill. App. Ct. 3d 2008). In that case, the petitioners argued that effluent limitations for phosphorus were necessary to address the impairment of the receiving streams. *Id.* at 483. Therefore, the Board's antidegradation requirements required IEPA to include such limits in the permit. *Id.* IEPA's antidegradation assessment concluded that expanded phosphorus discharges would not exacerbate the impairments. *Id.* at 489. Based on this finding, IEPA did not include phosphorus effluent limits in the permit. *Id.* In reviewing the Board's decision, the appellate court concluded "that the third parties in this case met their burden of proof before the Board by demonstrating that IEPA failed to require sufficient evidence to assure the water quality of Hickory Creek would not deteriorate further by exceeding the regulatory narrative and

numeric standards as a result of the plant expansion.” *Id.* at 487. Similarly, Petitioners’ burden here is to demonstrate that substantial evidence does not exist in the record to support IEPA’s actions regarding the thermal variance and cooling water intake structures. *See Des Plaines River Watershed Alliance v. IEPA*, PCB 04-88 at 12 (“The Board does not affirm the IEPA’s decision on the permit unless the record supports the decision.”).

STANDARD OF REVIEW

As the April 7, 2016 Opinion and Order found, “The Board does not grant IEPA’s decision any special deference. *IEPA v. IPCB*, 115 Ill. 2d 65, 70 (1986). The Board reviews permits that IEPA issues under a *de novo* standard of review. *City of Quincy v. IEPA*, PCB 08-86, slip op. at 39 (June 17, 2010).” (Opinion and Order at 9.) The Board must review “the entirety of the record to determine (1) if the record supports the IEPA’s decision, and (2) that the procedures used by the IEPA are consistent with the Act and Board regulations. The Board does not affirm the IEPA’s decision on the permit unless the record supports the decision.” *Des Plaines River Watershed Alliance v. IEPA*, PCB 04-88 at 12 (April 19, 2007) (aff’d sub nom. *IEPA v. IPCB*, 896 N.E.2d 479).

IEPA permitting decisions must be supported by substantial evidence. *IEPA v. IPCB*, 896 N.E.2d 479, 486. To satisfy the “substantial evidence” standard, the record must provide “more than a mere scintilla” of evidence, amounting to “such relevant evidence as a reasonable mind might accept as adequate to support [IEPA’s] conclusion.” *Am. Bottom Conservancy v. IEPA*, PCB 06-171 at 13-14 (Jan. 26, 2007) (citing *Finnerty v. Personnel Bd. of the City of Chicago*, 303 Ill. App. 3d 1, 11 (Ill. App. 1st Dist.1999) (quoting *Richardson v. Perales*, 402 U.S. 389, 401 (1971))).

ARGUMENT

The Board's Order clearly identified the regulations that IEPA was required to follow in issuing the permit. The Board gave IEPA an opportunity at the hearing to present substantial evidence in the record to support its actions, yet the Agency again came up empty-handed. As explained below, Petitioners have demonstrated that the Agency does not have "more than a mere scintilla" of evidence supporting those actions, and they must be invalidated.

I. IEPA Lacks Substantial Evidence in the Record to Comply with Subpart K of the Board's Rules.

IEPA can only renew an alternative thermal effluent limitation previously granted by the Board under Subpart K if it makes two findings: 1) that the nature of the thermal discharge has not changed; and 2) that the alternative thermal effluent limit has not caused appreciable harm to a balanced, indigenous population of fish, shellfish and wildlife. 35 Ill. Adm. Code §§ 106.1180(c)-(d). If IEPA finds the nature of the thermal discharge has changed materially, or that appreciable harm has resulted from the discharges, it is prohibited from renewing the alternative thermal effluent limit. 35 Ill. Adm. Code § 106.1180(d). IEPA was given an opportunity at the hearing to point to substantial evidence supporting such findings and failed. As will be demonstrated below, IEPA failed to comply with Subpart K by authorizing alternative thermal limits without first considering whether the thermal discharges from the Facility have changed in nature or whether those discharges have caused appreciable harm.

A. IEPA did not consider that the nature of the thermal discharge has changed.

Respondents do not dispute that the nature of the thermal discharge from Waukegan Station has changed since the 1978 variance was issued. (R. 0987, 0662, 0666; IEPA Resp. at 6; IEPA Reply at 15-16; MWG Resp. at 24; Tr. 15:17-24; 119:13-120:3.) Unit 6, one of the three

units that was operating at the time the variance was issued, has since been retired.¹ (R. 203, Tr. 15:17-20.) IEPA concedes that the retirement of Unit 6 changed the nature of the discharge. (Tr. 15:21-24 (“Q: And how did that change the nature of the discharge? A: By decreasing heat load associated with the unit coming off-line.”); 57:1-24; 80:20-81:13.) According to Midwest Generation, this change in operation has changed the nature of the discharges by lowering the heat rejection rate by 39% and the water flow rate by 37%. (R. 239-40; *see also* Tr. 16:21-17:5.) Provisions in 35 Ill. Adm. Code 106.1180 preclude IEPA from re-issuing a thermal variance in such circumstances, in order to ensure that variances are granted based on a discharge’s actual current impact. First, Section 106.1180(c) requires the Agency to make a finding that “the nature of the thermal discharge **has not changed**” (emphasis added) as a precondition to the Agency renewing an alternative thermal effluent limit in an NPDES permit. In the converse, 35 Ill. Adm. Code 106.1180(d) prohibits the Agency from renewing a thermal variance “[i]f the nature of the thermal discharge **has changed materially**.” (emphasis added). Since Respondents acknowledge and emphasize that the nature of the discharge *has* changed, these conditions for renewing a thermal variance are facially unmet.

Faced with this clear record, Respondents seize on the word “materially” in subsection (d), attempting to minimize the significance of the changes in the thermal discharge that they are compelled to acknowledge. “Material” is defined as “important; relevant; substantial.” *Material*, The Law Dictionary (7th ed. 2002). The record, including Midwest Generation’s own admissions, plainly reflects that retiring Unit 6 was material in every sense of that word. Midwest Generation cited the operational changes in its letter responding to the 2011 draft

¹ Midwest Generation has described these changes even more expansively. In its letter to IEPA following publication of the 2011 draft permit, Midwest Generation emphasized that the studies submitted to the Board were based on discharges that also included operation of Unit 5, which ceased operation in January 1978. (R. 203.)

permit, (R. 203-04), insisted the change in nature was “relevant” to the evaluation of the 316(a) variance in a 2012 email exchange with IEPA, (R. 239), and stressed that the thermal discharge had decreased “significantly” as a result of the retirements in a letter to IEPA following the 2013 public hearing. (R. 987.) IEPA subsequently cited the retirement of Unit 6 as relevant to the renewal of the thermal variance. (R. 662, 666). In briefing the motions for summary judgment in this matter, Midwest Generation argued that it had “dramatically” reduced its thermal discharges, (MWG Response Br. at 24), and the Agency described the change as a “dramatic decrease in the amount of thermal effluent discharged.” (IEPA Reply Br. at 15.) These statements all concede the importance—and certainly, the materiality—of the operational changes at Waukegan Station.

Further, IEPA does not have substantial evidence in the record to support the findings required to renew the thermal variance. Even Midwest Generation admits that the original 1971 study of the thermal plume “would not accurately represent the current delineation of the thermal plume from the Outfall 001 discharge.” (R. 0988, Tr. 20:11-16.) IEPA also speculates that zone of thermal impacts would have been changed by the operational changes, (Tr. 142:5-10), yet confirms that the record contains no updated thermal plume study since that original study. (Tr. 15:10-16; 21:1-4; 142:11-13) Data from Discharge Monitoring Reports documents the temperature of the effluent was available, but IEPA did not analyze that data to evaluate the impact of the thermal discharges on the receiving waters. (Tr. 14-15; 85:5-9.) The record thus contains no documentation of the shape, location, or extent of the area of Lake Michigan that is currently affected by these thermal discharges, (Tr. 14:4 -15:17), no analysis of how lake currents interact with the changed flow, (Tr. 17:23-18:3; 141:19-142:13), and consequently, no evaluation of whether the “dramatic” decrease in effluent flow and velocity causes 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. Nearshore areas are more biologically productive and have higher concentrations of organisms than deep water farther from shore. (R. 1059.) Nearly 80% of Great Lakes fish, including fish considered to inhabit deep water, use the nearshore “littoral zone” areas for at least part of the year. (R. 1066.) IEPA simply has no evidence in the record to support a finding that the nature of the thermal discharge has not changed materially.

IEPA’s renewal of the thermal variance is instead founded on an assumption that a reduction in flow must be equivalent to an improvement. (Tr. 21:1-5.) But this assumption is not based on substantial evidence in the administrative record either. Thermal pollution has complex effects on aquatic systems that cannot be reduced to a simple arithmetic relationship. (R. 477-78 (“The magnitude of thermal effects on ecosystem services is related to facility-specific factors, include 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.”) There is a reason that thermal pollution is treated differently than other pollutants. There is a reason that the Board’s regulations require the permittee to be prepared with “documentation based upon the discharger's actual operation experience during the previous permit term” of the current nature of the thermal discharge. 35 Ill. Adm. Code § 106.1180(b). That documentation just does not exist in the administrative record.

In conclusion, IEPA simply has no substantial evidence to support a position that the nature of the thermal discharge has not changed. The only evidence in the record indicates that the nature of the thermal discharge has changed. This prevents IEPA from renewing the thermal variance under the required preconditions and prohibitions of 35 Ill. Adm. Code § 106.1180(c)

and (d). Therefore, the Board must reject the renewal as arbitrary, capricious, and not in accordance with law, and revoke the variance until such time as the permittee is prepared to justify its continuance.

B. IEPA did not consider whether appreciable harm to a balanced, indigenous population of fish, shellfish, and wildlife had occurred as a result of the alternative thermal effluent limit.

The second precondition to IEPA renewing a thermal variance is a finding 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). The record is devoid of substantial evidence for IEPA to support such a finding. By not evaluating whether appreciable harm has resulted from the thermal variance, IEPA did not fulfill the requirements of Section 106.1180(c), and the agency action must be invalidated.

There are simply no studies in the record that evaluate the impacts of the thermal discharges on aquatic life. Board regulations require the permittee to be prepared with “documentation based upon the discharger's actual operation experience during the previous permit term” of the balanced, indigenous population of shellfish, fish, and wildlife in the receiving waters both at the current time and at the time the variance was originally issued. 35 Ill. Adm. Code § 106.1180(b). This record does not contain such documentation for either the present or the past.

At the hearing, IEPA could not point to any study of thermal impacts on aquatic life based on the discharger’s actual operation experience during the previous permit term; it could only point to irrelevant and unsubstantiated statements about field data from 2003-05 contained

in a letter from Midwest Generation, and had no idea about the context in which those data were collected. (Tr. 23:23-26:1; 26:20-27:4; 48:13-17.)

The letter does not present data related to a study of thermal impacts. (R. 204.) It discusses “2003-2005 field data collected by MWG” regarding fish that are *impinged* by the intake system. (*Id.*) Counting the fish that happen to get sucked into a cooling water intake is not a legitimate way to conduct a fish population study, and says absolutely nothing about how thermal discharges impact a balanced indigenous population of fish, shellfish, and wildlife. Furthermore, although IEPA could not confirm it, (Tr. 26:20-27:4), it appears likely that the referenced field data are the preliminary data from the 2005 Proposal for Information Collection regarding impingement and entrainment impacts. (R. 1204-36.) As is discussed *supra*, that 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. *Supra* at 26-27. Furthermore, even if it was completed, the proposal does not suggest that it would include any study whatsoever of the effects of the thermal discharges.

IEPA has nothing else in the record to stand on. (Tr. 27:8-29:5.) The record contains no studies of thermal impacts since the variance was first issued in 1978, (Tr. 29:11-30:11), despite the fact that part of the Board’s reasoning behind issuing the original variance was that “Edison has promised to continue studying possible damaging effects on the Lake in the future.” (R. 0002.)

In fact, even the original studies that supported the thermal variance are not in the record. (Tr. 34:3-7 (“Q. Isn’t it true that neither Midwest Generation, Illinois EPA, nor USEPA can locate copies of those studies and that they are not in the record? A. Correct. The original studies

are not in the record.”.) Nonetheless, the Agency claims to have relied on those original studies from 1975 and 1976 to support its reissuance of the thermal variance. (R. 666; Tr. 53:18-54:12; 55:13-20; Tr. 58:11-19.) It is unclear how this could even be possible, because neither Midwest Generation, IEPA, nor even U.S. EPA could track down copies of any of those studies. (R. 492.) Without the studies themselves, neither the Board, the Agency, nor the public can evaluate the applicability or reliability of the findings. We do not know what the findings were. There is not even a substantive summary of the findings of those studies in the record:

Q. And here where there is a list of studies, do you see any substantive summary of the findings of any of those studies?

A. No, there does not appear to be a summary on this 1974 letter, June 14th 1974, letter.

Q. Are you aware of a substantive summary of the findings of these studies anywhere in the administrative record?

A. No.

(Tr. 36:2-10.) At best, there is only a list of general study topics and citations, (R. 241-243), and the Agency does not even know whether that list accurately represents what was submitted in the 1970s. (Tr. 55:4-8 (“I’m not certain of the exact list or what was submitted...”)) This “evidence” is utterly worthless as support to continue the thermal variance, and IEPA’s reliance on it stands in violation of the Best Evidence Rule.

The Illinois “Best Evidence Rule” requires 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.” Ill. R. Evid. 1002. In some circumstances, other evidence of the contents of a writing may be admissible, Ill. R. Evid. 1004, but as demonstrated above, the record contains no such alternative evidence of the contents of the missing studies that could be admitted. There is thus **no** evidence in the record that the Board may consider

regarding the thermal impacts justification for the 1978 thermal variance, and the only evidence the agency can point to about thermal impacts since 1978 are a handful of isolated data points that are offered at Midwest Generation's say-so, with no scientific validation.

The record does contain some non-facility-specific data related to general aquatic life trends in Lake Michigan—and those trends show a *decline* in the health of the aquatic ecosystem. A United States Geological Survey study titled “Status and Trends of Prey Fish Populations in Lake Michigan” concludes that “[t]otal prey fish biomass in 2012 was the lowest since our bottom trawl survey began in 1973, and follows five years of sustained, record low biomass estimates.” (R. 1053.) The Agency's own analysis (based on information from Illinois Department of Natural Resources) is also grim:

There have been significant changes in the aquatic community over the past three decades. Most of the large-scale changes are the result of changes in lake productivity. As productivity declines, there is less available nutrients/energy to move through the food web. Declines in productivity are likely the contributing factor to declines in the yellow perch and alewife populations. Declines in alewife abundance consequently affect salmon and trout populations. These changes in productivity and lower trophic level species composition (i.e. zooplankton and benthic invertebrates) have been largely attributed to effects of invasive species (e.g. zebra and quagga mussels, and spiny and fish hook water fleas).

(R. 618, 673.) The Agency dismisses the evidence of ecological decline as unrelated to the thermal discharges, (IEPA Resp. Br. at 9, Tr. 61:4-14; 124:23-125:9; 130:4-9), but the record contains no factual basis for this assumption. The Agency had before it no evidence to even evaluate whether thermal stressors are exacerbating those population trends.

Finally, the Agency could not identify anywhere in the record where the agency explains what constitutes a balanced, indigenous population of fish, shellfish and wildlife (“BIP”) for the receiving waters in Lake Michigan, let alone confirms that a BIP is even present in the receiving

waters. (Tr. 40:6-21.) The agency admits that changes have occurred to Lake Michigan's aquatic community since the variance was issued in 1978, (Tr. 59:11-18; 59:11-21; 123:11-19), but never purports to evaluate whether a BIP still exists. (Tr. 142:22-143:2 ("Q. Did the Agency make a finding anywhere on the record that there is in fact a balanced, indigenous population of fish, shellfish and wildlife in the receiving waters? A. Directly, no.") A BIP must be present in order for a thermal variance to be legally granted under Clean Water Act Section 316(a), and any alternative thermal effluent limit that is established must be protective of the BIP. 33 U.S.C. § 1326 (a) (2015). IEPA can make no such finding on this record.

Thus, in its 2015 renewal of the thermal variance, IEPA failed to find support in the record for two required findings under Sections 106.1180 (c) and (d): 1)IEPA cannot support a finding that the nature of the thermal discharges has not materially changed with substantial evidence, and 2)IEPA cannot support a finding 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" with substantial evidence. Either of these failings is sufficient to invalidate the renewal of the thermal variance. Petitioners meet their burden of proof here by establishing that the record does not contain substantial evidence to support that Agency action. *Des Plaines River Watershed Alliance v. IEPA*, PCB 04-88 at 12 ("The Board does not affirm the IEPA's decision on the permit unless the record supports the decision."). Accordingly, we ask the Board to invalidate the thermal variance until such time as the permittee is prepared to demonstrate that it is entitled to such relief under the law. In the meantime, we ask the Board to direct IEPA to establish water quality-based effluent limits to meet the Lake Michigan thermal standards.

II. IEPA Did Not Have Authority to Renew the Board's 1978 Thermal Variance, in Any Event.

The thermal variance also fails on much simpler grounds: the Agency has no legal authority to renew the 1978 variance in the first place. The Board's 2014 Subpart K rules are the only source of authority for the Agency to renew a thermal variance, and the 1978 thermal variance does not qualify for Agency renewal under the plain language of those rules. Furthermore, because thermal variances expire after five years, there was no legitimate variance available for the Agency to renew in 2015.

It is axiomatic under general principles of administrative law that agencies have only those powers that are given to them by statute or regulation. *Gaffney v. Bd. of Tr. of the Orland Fire Prot. Dist.*, 969 N.E.2d 359, 368 (Ill. 2012) ("An administrative agency has no general or common law powers. ... Rather, an agency's powers are limited to those granted by the legislature and any action must be specifically authorized by statute.") (citing *Alvarado v. Indus. Comm'n*, 216 Ill. 2d 547, 553 (2005), citations omitted.) Where the Board explicitly holds authority (for example, to grant thermal variances), but the applicable law is silent as to IEPA's authority, it is not appropriate to imply that IEPA silently holds such authority.

Bridgestone/Firestone, Inc. v. Aldridge, 179 Ill. 2d 141, 151-52 (Ill. 1997) ("Where a statute lists the things to which it refers, there is an inference that all omissions should be understood as exclusions. This rule of statutory construction, *expressio unius est exclusio alterius*, is based on logic and common sense. It expresses the learning of common experience that when people say one thing they do not mean something else.")

A. Under § 106.1180, IEPA Can Only Renew Thermal Variances Granted by the Board Pursuant to Subpart K

In Illinois, a Section 316(a) thermal variance may only be **granted** by the Board. 35 Ill. Adm. Code § 304.141(c) (2015) (“The standards of this Chapter shall apply to thermal discharges unless ... **the Board has determined** that different standards shall apply to a particular thermal discharge”) (emphasis added).² This longstanding rule was reconfirmed in the Board’s “Subpart K” rules, concerning alternative thermal effluent limitations adopted on February 26, 2014.

The Board’s 2014 Subpart K rules for the first time granted IEPA the authority to **renew** certain thermal variances. However, the language of the Subpart K does not allow IEPA to renew the 1978 thermal variance at issue in this proceeding. 35 Ill. Admin. Code § 106.1180(a) (2015) states: “The 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.” (emphasis added). Given that Subpart K did not exist until 2014, there is no way the Board’s 1978 316(a) variance qualifies for renewal under the plain language of 35 Ill. Adm. Code § 106.1180. Further, because Section 106.1180 is the only source of authority for IEPA to renew a 316(a) variance, IEPA does not have authority to renew 316(a) variances that were not granted by the Board pursuant to Subpart K. Therefore, the Board should invalidate the 316(a) variance that IEPA purported to renew in Special Condition 4 of the 2015 Final Permit and direct IEPA to establish water quality-based effluent limits to meet the Lake Michigan thermal standards.

² See also the previous version of this regulation, 35 Ill. Adm. Code § 304.141(c) (2013) (“The standards of this Chapter shall apply to thermal discharges unless, after public notice and an opportunity for public hearing, in accordance with 316(a) of the CWA and applicable federal regulations, *the Administrator and the Board* have determined that different standards shall apply to a particular thermal discharge.”) (emphasis added).

Under accepted rules of statutory interpretation, as well as the plain language doctrine, the inclusion of the clause “pursuant to this Subpart” means that availability of the more streamlined Agency renewal process is limited to those who have obtained a thermal effluent limitation *under Subpart K*, which was first adopted in 2014 to establish specific Section 316(a) variance procedures for Illinois dischargers. One of the most fundamental canons of statutory interpretation requires that effect be given to each section, paragraph, sentence, clause, or word of a statute, and that no part of a statute be rendered superfluous. 73 Am. Jur 2d Statutes § 156; *People v. Jones*, 223 Ill. 2d 569, 581 (2006) (“We construe statutes as a whole, so that no part is rendered meaningless or superfluous.”) (citing *People v. Jones*, 214 Ill. 2d 187, 193 (2005); *Bonaguro v. County Officers Electoral Bd.*, 158 Ill. 2d 391, 397 (1994).) The only way to give the words “pursuant to this Subpart” effect is to interpret the clause as limiting the scope of variances eligible to be renewed by the Agency. Any other interpretation impermissibly renders that clause superfluous.

Because the 1978 thermal variance was not adopted “pursuant to this Subpart” (i.e. Subpart K), IEPA did not have authority to renew the thermal variance in the 2015 NPDES permit. “Any action or decision taken by an administrative agency in excess of or contrary to its authority is void.” *Delgado v. Bd. of Election Comm’rs of the City of Chicago*, 224 Ill. 2d 481, 485 (2007) (citing *Alvarado v. Indus. Comm’n*, 216 Ill.2d 547, 553-54 (2005)). Therefore the Board is obligated to void the thermal variance as an action beyond the Agency’s authority.

B. Because the 1978 Variance Expired After Five Years, There Existed No Legitimate Variance to Renew

Prior to promulgation of the Subpart K rules in 2014, the Agency was not empowered to grant or renew a thermal variance of any kind. 35 Ill Adm. Code § 304.141 (c) (2013) (“The

standards of this Chapter shall apply to thermal discharges unless, after public notice and an opportunity for public hearing, in accordance with 316(a) of the CWA and applicable federal regulations, the Administrator and the Board have determined that different standards shall apply to a particular thermal discharge.”). The Board has not at any time since 1978 acted to renew or reissue a thermal variance to Waukegan Station.

In the April 7, 2016 Order granting partial summary judgment, the Board held that a thermal variance expires along with the associated NPDES permit. (Order at 12.) Therefore, the 1978 variance expired many years ago. Because the Agency had no authority to renew the variance prior to 2014, no purported renewal of the variance (e.g. in the 2000 NPDES permit) may be considered valid. Because the Board was not asked to renew the variance in the interim, there existed no legally-valid thermal variance of any kind that could be eligible for renewal by the Agency in the 2015 NPDES permit. Therefore, the Agency’s purported renewal of the thermal variance must be invalidated as lacking the most fundamental foundation: an existing variance to renew.

III. COUNT TWO: The Permit Does Not Comply With Legal Requirements Regarding the Cooling Water Intake Structure

It is clear in the Record, and even clearer following the hearing, that IEPA has failed to meet the fundamental legal requirement for permitting the cooling water intake structure at Waukegan Station. The Order concludes that, under 40 C.F.R. § 125.98(b)(6), “the [permitting authority] must establish interim BTA [Best Technology Available] requirements in the permit based on the [permitting authority’s] best professional judgment on a site-specific basis in accordance with § 125.90(b) and 40 CFR 401.14.” 40 C.F.R. § 125.90 (b) provides that “[c]ooling water intake structures ... must meet requirements under section 316(b) of the CWA established by the

Director on a case-by-case, best professional judgment (BPJ) basis”; and 40 C.F.R. § 401.14 provides that “[t]he location, design, construction and capacity of cooling water intake structures ... shall reflect the best technology available for minimizing adverse environmental impact”

The record demonstrates that IEPA failed altogether to meet these requirements. It conducted no evaluation whatsoever of the best technology available for minimizing adverse environmental impact, much less a “best professional judgment” evaluation. It merely rubber-stamped the existing practice without considering aquatic life impacts of the cooling water intake structure, and without evaluating any near-term options available to reduce those impacts.

A Best Professional Judgment determination, like any agency action, must be supported by an adequate basis in the record. *IEPA v. IPCB*, 896 N.E.2d at 486. (IEPA permitting decisions must be supported by substantial evidence). *Des Plaines River Watershed Alliance v. IEPA*, PCB 04-88 at 12 (April 19, 2007) (“The Board does not affirm the IEPA’s decision on the permit unless the record supports the decision”). IEPA’s supposed “best professional judgment” determination regarding the interim BTA is supported by *no* substantial evidence in the record, and must be set aside.

First, the interim BTA for this cooling water intake structure is defined nowhere in the NPDES permit. Indeed, at the hearing, the agency witnesses offered conflicting testimony about whether IEPA had even made the required interim BTA determination in the first place. At the hearing, the first Agency witness testified:

A. Yes, we were required to make an interim BTA determination.

Q. Are there interim BTA requirements in this permit?

A. No.

Q. There are not?

A. No.

(Tr. 46:3-4, 46:16-20.) The witness later changed his mind and testified that the permit does contain an interim BTA determination. (Tr. 85:12-22.)

Nonetheless, even if IEPA believes it established an interim BTA, it is not contained in the permit. Special Condition 7, which addresses the cooling water intake structure, (Tr. 85:23-86:5), does not even identify what characteristics of the cooling water intake structure or the operation of that structure represent the interim “best technology available” to minimize adverse environmental impact. (Tr. 88:7-20, R. 696.) The condition simply sets forth the conclusory statement that “the Agency has determined that the operation of the cooling water intake structure meets the equivalent of Best Technology Available (BTA).” (R. 696.)

Nothing in the record suggests that either IEPA or Midwest Generation knew or considered how “the operation of the cooling water intake structure” impacts aquatic life. In 2005, Midwest Generation was not even aware “[w]hether the Station has implemented any operational controls, including flow or velocity reductions, which reduce impingement mortality or entrainment.” (R. 1210.) Midwest Generation concluded at the time that the “Waukegan Station cooling water intake system does not appear to include any control technologies specifically designed to reduce impingement mortality or entrainment below the calculation baselines” (R. 1209, Tr. 99:1-10.) and “does not appear to use any operational measures specifically designed to reduce impingement mortality or entrainment.” (R. 1210, Tr. 99:11-15.) In 2013, Midwest Generation confirmed that operation practices are typical and that no control technologies were in place that were specifically designed to reduce impingement mortality or entrainment. (R. 0512.) This absence of information does not define the “best technology available” to minimize adverse environmental impact in any way that is sufficient to represent an enforceable permit condition.

Given that utter lack of scrutiny, it is not surprising that IEPA witnesses could not explain at the hearing what aspects of “the operation of the cooling water intake structure” act to minimize adverse environmental impacts such that “the operation of the cooling water intake structure” might be considered the “best” interim technology available. The Agency does not argue that the onshore location of the intake structure is a feature that minimizes adverse environmental impact. (Tr. 93:8-94:3.) The record points to the contrary, as “intakes located in nearshore areas (riparian or littoral zones) will have greater ecological impact than intakes located offshore, because nearshore areas are more biologically productive and have higher concentrations of organisms.” (R. 1058, Tr. 92:11-16.) The fact that the intake structure “withdraws water from the entire water column” is not a feature the Agency identified that minimizes adverse environmental impact. (Tr. 94:4-8, see, R. 512.) Design through-screen velocities of 2.0 and 1.8 feet per second are three to four times greater than the 0.5 feet per second standard that is accepted as protective of aquatic life. (Tr. 96:15-97:9, R. 1059.) *See also*, 40 C.F.R. § 125.94 (c). Similarly, IEPA can point to nothing about the specifications of the screens on the intake structure or the operation of the travelling screen system that is advantageous in minimizing adverse impacts to aquatic life compared to other available options. (Tr. 98:3-14.)

Further, the record is clear that IEPA did not consider a single “technology available” when supposedly determining the interim “best technology available.” (Tr. 90:18-24 (“No, there was a not a comparison of technologies for the interim Best Technology Available determination.”).) This is most starkly evidenced by a list of “Potentially Available Control Technologies” that Midwest Generation proposed to study in a document submitted to IEPA in 2005. (R. 1228.) IEPA never required Midwest Generation to complete that study, (Tr. 99:16-

23; 100:20-23; 100:24-101:12), and the Agency did not consider a single one of those “Potentially Available Control Technologies” when it undertook to establish an interim Best Technology Available. (Tr. 101:13-104:4). The list of potentially available control technologies includes:

Control Technology		Description
Behavioral Barriers		
a.	Sound Barriers	Non-contact barrier that generates various sound patterns to elicit avoidance responses in fish.
b.	Strobe Light	Light barriers consist of controlled application of strobe lights or mercury vapor lights to lure fish away from cooling water intake structures or alter natural migration patterns.
c.	Air Bubble Curtains	Air bubble barriers consist of an air header and jets arranged to provide a continuous curtain of air bubbles over a cross section area to repel fish that approach the face of an intake structure.
d.	Velocity Caps	A device placed over vertical inlets at offshore intake structures to convert vertical flow into horizontal flow at the entrance into the intake.
e.	Other Behavioral Barriers Electrical Barriers Chemicals Barriers Magnetic Fields Chains and Cables	Non-contact barriers designed to create environmental conditions that will elicit avoidance responses from fish.
Physical Barriers		
a.	Vertical Traveling Screens	Screen panels mounted on a rotating belt structure – the belt rotates through the water column vertically keeping fish and debris out of the circulating water system.
d.	Modified Vertical Traveling Screen (Ristroph)	Vertical traveling screens fitted with a collection bucket beneath the screen panel and a fish recovery/return system.
c.	Rotary Drum Screens	In a rotary drum screen, water passes through screen mesh that covers the rotating cylinder. Debris is carried over the screen as it rotates and is washed off the screen on the downstream side. Drum screens are generally used in gravity diversion canals but can also

		be designed for use to deliver water to pumping plants.
d.	Center-Flow/Dual-Flow Screen	Dual-flow screens are designed to allow water intake through both the ascending and descending side of the vertical screen. Dual-flow screens increase the screen size for a given intake water flow, thus reducing the through-screen velocity.
e.	Fine Mesh Screens Mounted on Traveling Screens	Fine mesh screens mounted on traveling screens are used for screening eggs, larvae, and juvenile fish from cooling water intake systems and used with an organism return system.
f.	Stationary Screens (Vertical Fixed-Plate Screen)	Vertical fixed-plate stationary screens can be located in the cooling water intake channel such that through-screen velocity is very low – reducing impingement mortality. Debris removal is an important consideration, and vertical fixed-plate screens generally require a mechanical cleaning system for debris removal.
g.	Velocity Gradient (Angled or Louvered Screens)	Angled screens and louvered screens are designed to provide an abrupt change in both the flow direction and velocity of the cooling water – creating a barrier that fish will avoid. These systems are often combined with a fish bypass or other fish handling/return system.
h.	Fish Barrier Net	Fish barrier nets are wide mesh nets placed in front of the entrance to an intake structure to keep fish from entering the intake structure.
i.	Aquatic Filter Barrier (Gunderboom)	Barriers that employ a fabric filter designed to allow for passage of water into a cooling water intake structure, but exclude fish and shellfish including early life stages.
j.	Porous Dikes/Leaky Dams	Porous dikes, also known as leaky dams, are filters resembling a breakwater surrounding a cooling water intake structure. Water passes through the dike while the dike acts as a physical and behavioral barrier to aquatic organisms.
k.	Cylindrical Wedge-Wire Screen	Cylindrical wedge-wire screens can have a mesh size that is smaller than the organisms susceptible to entrainment and can be designed with a through-screen velocity that is low enough to minimize impingement.

(R. 1228.) It is simply not plausible that none of the control technologies among this wide range of options that the permittee itself deems “Potentially Available Control Technologies” are worthy of considering as interim strategies to minimize adverse environmental impact. IEPA’s claim that it exercised its “best professional judgment” regarding the interim Best Technology Available without considering any of these potentially available technologies cannot stand as supported by substantial evidence in the record.

Finally, the record is clear that IEPA had no reliable or current information regarding the aquatic life impacts of the cooling water intake structure upon which to base a Best Professional Judgment determination regarding the interim BTA. In the Responsiveness Summary, the Agency claimed that it relied on some historical impingement and entrainment data from 1975 and 1976. However, like the thermal studies, the impingement and entrainment studies are also omitted from the administrative record. (Tr. 143:9-19).

Unlike the missing thermal studies, the Agency does present some select findings from the impingement and entrainment studies. (R. 666-67.) As discussed above, when original documents are missing, Illinois Rules of Evidence can allow “other evidence of the contents of a writing.” Ill. R. Evid. 1004. Nonetheless, “the decision to admit or exclude evidence rests within the sound discretion of the [fact finder].” *Kraft v. Arcola Twp.*, 2016 IL App (4th) 150028-U ¶39 (2016). Furthermore, it is still incumbent upon the Board to weigh and assess the credibility of whatever evidence is admitted. *Emanuel v. 1000 Liquors, Inc.*, 2016 IL App (1st) 143683-U, ¶49, 50 (2016), citing *Spiros Lounge, Inc. v. State of Ill. Liquor Control Com.*, 98 Ill. App. 3d 280, 284 (1981).

Speaking to the weight that should be afforded the evidence offered by the Agency, the out-of-context data presented by IEPA are not reliable or credible for the purpose they are being offered without the original study documents in the record. For example, the Agency's Responsiveness Summary states that only three fish species were identified among the eggs and larvae in the entrainment samples. (R. 667.) Respondents have included this isolated statement that "only three species were identified" among evidence it presents regarding declines in the overall aquatic ecosystem in Lake Michigan. (IEPA Resp. Br. at 9; MWG Resp. Br. at 20.) But elsewhere in the record, a different study proposal from Midwest Generation offers a better explanation for why only three species were identified: it is nearly impossible even for experts to identify fish eggs and larvae down to the species level.³ (R. 1222.) In other words, the fact that only three species were identified says nothing about how many species may be impacted, it reflects an actual scientific limitation in identifying other species in those life stages. This perfectly illustrates the reality that without the complete scientific studies themselves to explain the methodologies used and the limitations of the findings therein, there is an unacceptable danger that data will be misinterpreted. Consequently, IEPA's recitation of data from 1975 and 1976 without the studies to back up those statements must be given the minimal evidentiary weight.

³ "Readers not familiar with larval fishes should understand that their taxonomy is not nearly so well developed as that for adult fishes. Many species are either undescribed or are not adequately described for all life stages (e.g., Hoyt 1988, Fuiman et al. 1983, Helland-Bartels et al. 1990, etc.). Characters used to describe larval fish are qualitative, rather subjective, and change as the larvae develop (e.g., pigmentation patterns). Quantitative characters such as myomere counts often show considerable overlap among species and can vary geographically and temporally for a given species (Bosley and Connor 1984). Thus, identifications (IDs) will be made to the lowest practical taxon, which, for larvae, sometimes is species, but often is genus (e.g., *Lepomis* or *Moxostoma* cannot be separated to species), and occasionally higher levels (e.g., family). On occasion, 'species type' IDs will be made. The use of the word 'type' will indicate that the specimen in question agrees well with the species to which it was assigned, but the taxonomist could not be 100 percent certain that it in fact was that species. Thus, a small probability may exist that any 'species type' designation was not the species indicated, but rather a species that shares many of the same larval characteristics with that species." Fish eggs typically cannot be identified to species or genus, but an attempt will be made to provide family level IDs. (R. 1222.)

Furthermore, as Midwest Generation itself has stated to the Agency, “that data is now over 30 years old and may no longer be entirely representative of current conditions.” (R. 004, Tr. 111:4-8.) Midwest Generation submitted a “Proposal for Information Collection for Waukegan Station” to IEPA in 2005 that proposed to evaluate impingement and entrainment impacts from the facility. But IEPA never required Midwest Generation to complete the study, (Tr. 48:24-49:1 (“As far as my knowledge, the study was never conducted.”)), nor did it require any other updated study to provide current information regarding aquatic life impacts from the cooling water intake structure. (Tr. 137:15-23 (“There were not completed studies done more recently than that.”).)

In lieu of reliable data regarding current aquatic life impacts in light of the declining Lake Michigan ecosystem, IEPA has apparently chosen to rely on a few preliminary data from the study proposal submitted in 2005. (Tr. 62:24-63:7.) These data were not subject to essential quality assurance/quality control procedures, nor were they subject to the scientific interpretation and analysis that was proposed to have been included in a final study. (Tr. 49:10- 51:13.) There is no evidence in the record that the course of sampling was completed. (Tr. 48:24-49:1.) Such preliminary data should not be considered reliable, and should be given little evidentiary weight.

Nonetheless, the Agency endeavors to compare arbitrary forty-year-old findings from studies they can't find to unsubstantiated data from a study that was never completed to downplay the adverse impact the cooling water intake structure has on aquatic life. (Tr. 62:24-63:7; 126:7-13.) This is not good science, and this is not substantial evidence. The reality borne out by the record is that Waukegan Station kills hundreds of millions of organisms annually, (R. 1068, 0667, 1213-14), and that Midwest Generation employs no control structures or operational controls to minimize that environmental impact. (R. 1209-10, 0512.)

There is thus no information in the record—let alone “substantial evidence”—that IEPA could use to arrive at a conclusion that the current operation of the intake structure is the best technology available to minimize environmental impact from the cooling water intake structure. IEPA does not know whether or how the current operation minimizes environmental impact, did not evaluate a single available technology to determine the interim Best Technology Available, and justifies these failings by misinterpreting unreliable data about aquatic life impact. Accordingly, we ask the Board to invalidate whatever “interim Best Technology Available” determination contained in the permit, and remand the permit to IEPA with instructions to demand the information necessary from the permittee to make a legitimate best professional judgment determination supported by substantial evidence by a date certain.

CONCLUSION

The record does not provide substantial evidence to support IEPA’s renewal of the thermal variance or its interim Best Technology Available determination. Both actions violated the Act and Board regulations and were arbitrary, capricious, and not in accordance with law. Therefore, the Board must find for Petitioners on both counts, invalidate Special Condition 4 and Special Condition 7 in the 2015 Final Permit, and remand the permit to IEPA with instructions to establish thermal effluent limitations based on applicable water quality standards and determine the interim Best Technology Available to control impacts from the cooling water intake structure. Further, because the issuance of the 2015 permit occurred fully ten years after the previous permit expired, Petitioners ask that the Board set a deadline for the Agency to finalize the required permit conditions. We suggest a date no later than six months from the date of the Board’s decision.

CERTIFICATE OF SERVICE

I hereby certify that the foregoing **PETITIONERS' POST-HEARING BRIEF** was served to all parties of record listed below via mail and electronic mail, on November 14, 2016.



Matthew Glover
Legal Assistant
Environmental Law and Policy Center
35 E Wacker Drive, Suite 1600
Chicago, Illinois 60601
312-795-3719

PCB 15-189 SERVICE LIST:

Bradley P. Halloran, Hearing Officer
Illinois Pollution Control Board
100 West Randolph Street, Suite 11-500
Chicago, IL 60601

Greg Wannier
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA, 94612

Susan M. Franzetti
Vincent R. Angermeier
Nijman Franzaetti LLP
10 South LaSalle Street, Suite 3600
Chicago, IL 60603

Midwest Generation, LLC
401 East Greenwood Avenue
Waukegan, IL 60087

Robert W. Petti
Angad Nagra
Office of the Attorney General
69 West Washington Street, Suite 1800
Chicago, IL 60602