ILLINOIS POLLUTION CONTROL BOARD
January 19, 2017

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

JESSICA DEXTER, ENVIRONMENTAL LAW & POLICY CENTER, APPEARED ON BEHALF OF THE PETITIONERS;

ROBERT PETTI AND ANGAD NAGRA, ASSISTANT ATTORNEYS GENERAL, APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY; and

SUSAN FRANZETTI AND VINCENT ANGERMEIER, NIJMAN FRANZETTI LLP, APPEARED ON BEHALF OF MIDWEST GENERATION, LLC.

OPINION AND ORDER OF THE BOARD (by G.M. Keenan):

Waukegan Generating Station, like most coal plants built before 1970, withdraws water from a nearby source, Lake Michigan, and discharges heated effluent back into that source in an "open-loop" process that must comply with specific permit requirements. In March 2015, the Illinois Environmental Protection Agency renewed the Waukegan facility's permit that contains those requirements. The permit renewal was applied for by Midwest Generation, L.L.C., which owns the facility. In April 2015, several environmental groups appealed to the Board, arguing that the renewed permit violates the law.

Today the Board finds that the permit issued by the Illinois Environmental Protection Agency does not violate the law. First, the environmental groups argue that the permit condition concerning the facility's cooling water intake system does not contain necessary interim best technology available requirements. The Board finds it does. Second, the environmental groups argue that the permit could not lawfully contain the alternative thermal effluent limitation granted by the Board in 1978 because the nature of the thermal discharge has materially changed since 1978 and it has caused appreciable harm to a balanced, indigenous population of shellfish,

fish, and wildlife in and on Lake Michigan. The Board finds that there has neither been material change nor appreciable harm, so renewing the alternative thermal effluent limitation does not violate the law.

In this opinion, the Board begins by providing background, consisting of the undisputed facts, the applicable laws, and the procedural history of the facility's thermal effluent relief and permitting and this appeal. The Board then discusses standing, burden of proof, and standard of review. Last, the Board analyzes the merits of the permit appeal, which concern the cooling water intake and thermal effluent discharge, making related findings of fact and conclusions of law.

BACKGROUND

Undisputed Facts

Withdrawing and discharging water for use in a power plant affects the environment. When taking water into the power plant, aquatic life can become trapped against external equipment (impingement) or can be drawn into the power plant itself (entrainment), injuring or killing the organisms.[1] After intake, the water absorbs heat from the power plant's operations. When discharged, the heated water (called thermal effluent) in turn heats the receiving body of water. A temperature change can have various effects on ecosystem dynamics, including reduced food availability and lower dissolved oxygen in the water.[2]

The Waukegan Generating Station in Waukegan, Lake County (the Facility), owned by Midwest Generation, LLC (Midwest Gen), withdraws cooling water from Lake Michigan and discharges heated effluent back into the Lake.[3] This is known as an "open-loop" cooling system, as opposed to a "closed-loop" system where thermal effluent is reused as cooling water. The cooling system is designed to intake up to 900 million gallons of water per day and, on average, the Facility discharges 739 million gallons of effluent per day.[4]

The Facility consists of two coal-fired electricity generating units with a combined generating capacity of 742 megawatts.[5] Two units at the Facility with a combined generating capacity of 241 megawatts were retired in 1978 and 2007, respectively.[6]

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[1] R. 1134. Citations to the administrative record before Illinois EPA are abbreviated throughout the order in the form R. __.
[2] R. 477.
[3] R. 661.
[4] *Id.*
[5] *Id.*
[6] R. 203.

Statutes and Regulations

Cooling Water Intake Structures

Board regulations do not directly address cooling water intake structures constructed before 1971. However, Section 316(b) of the federal Clean Water Act (CWA) and associated regulations do, and the Board's regulations require that National Pollutant Discharge Elimination System (NPDES) permits issued by the Illinois Environmental Protection Agency must comply with federal law and regulations.[7]

Under Section 316(b), the location, design, construction, and capacity of cooling water intake structures at certain facilities must "reflect the best technology available for minimizing adverse environmental impact."[8] The United States Environmental Protection Agency (USEPA) promulgated regulations applying Section 316(b) to existing facilities in 2014.[9] Generally, the regulations require that existing facilities employ one of seven specific technologies to minimize environmental impact.[10] However, the regulation introduces this requirement over time; interim provisions apply to permits issued after October 14, 2014 and applied for before October 14, 2014.[11]

In April 2016, the Board rejected cross-motions for summary judgment from all parties. In that order, the Board held that these interim provisions apply to the Facility's 2015 NPDES permit.[12] Under the interim provisions, the permit writer must establish "interim best technology available" (interim BTA) requirements in the permit based on the permit writer's best professional judgment on a site-specific basis in accordance with 40 C.F.R. § 125.90(b) and 40 C.F.R. § 401.14.[13]

Alternative Thermal Effluent Limitations

Under the Board's general thermal effluent limitations, Lake Michigan's temperature must not exceed 80° F in the summer and 45° F in the winter, and, generally, thermal discharges must not cause Lake Michigan's temperature to rise more than 3° F above natural temperatures.[14] However, under certain conditions, the Board may determine that "different standards shall apply to a particular thermal discharge."[15]

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[7] 35 Ill. Adm. Code 309.141.
[8] 33 U.S.C. § 1326(b) (2016).
[9] 40 C.F.R. Part 125, Subpart J.
[10] 40 C.F.R. § 125.94(c).
[11] 40 C.F.R. § 125.98(b)(6).
[12] *See* Sierra Club v. Illinois EPA, PCB 15-189, slip op. at 13-15 (Apr. 7, 2016) (April Order).
[13] 40 C.F.R. § 125.98(b)(6)
[14] 35 Ill. Adm. Code 302.507.
[15] 35 Ill. Adm. Code 304.141(c).

The Board must make this determination "in accordance with section 316 of the [CWA], applicable federal regulations, and procedures in 35 Ill. Adm. Code 106.Subpart K."[16] Under Section 316 and Board regulations, if the general thermal effluent limitation is "more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife" in the receiving water, then the Board may grant an alternative thermal effluent limitation and order Illinois EPA to include thermal discharge effluent limitations or standards in the discharger's NPDES permit that will assure the same.[17] (For brevity, "alternative thermal effluent limitation" is stated as "alternative limitation.")

An alternative limitation is not permanent; it must be renewed every time a facility's NPDES permit is renewed.[18] Though only the Board can grant an alternative limitation, once it is granted, Illinois EPA may renew it.[19] The Board's procedural rules for renewing alternative limitations (Subpart K) state that the renewal application must include sufficient information for Illinois EPA to compare both the nature of the permittee's thermal discharge and the balanced, indigenous population of shellfish, fish, and wildlife from when the Board granted the alternative limitation against current conditions.[20]

If the permittee demonstrates neither of these conditions has changed and the alternative limitation has not harmed the balanced, indigenous population of shellfish, fish, and wildlife, Illinois EPA may include the alternative limitation in the renewed NPDES permit.[21]

If a condition has changed materially or the alternative limitation has caused harm, then Illinois EPA must not include the alternative limitation in the renewed NDPES permit and the permittee must file a new petition for an alternative limitation before the Board.[22]

Procedural History

Alternative Limitation; Permitting

In 1977, the Facility's then-owner sought an alternative limitation from the Board, which granted it in 1978.[23] The Board, evaluating evidence that the Facility's owner provided, found that "environmental damage to [Lake Michigan] is minimal" and that the owner "promised to continue studying possible damaging effects on the Lake in the future."[24] Further, the Board ordered Illinois EPA to include the alternative limitation in the Facility's NPDES permit.

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[16] *Id*.
[17] 33 U.S.C. § 1326(a) (2016); 35 Ill. Adm. Code 106.1170(a).
[18] *See* 35 Ill. Adm. Code 106.1170(c); April Order at 11-12.
[19] *See* 35 Ill. Adm. Code 106.1180(c).
[20] 35 Ill. Adm. Code 106.1180(b).
[21] 35 Ill. Adm. Code 106.1180(c).
[22] 35 Ill. Adm. Code 106.1180(d).
[23] Proposed Determination of Thermal Standards for Zion and Waukegan Generating Stations, PCB 77-82 (Aug. 3, 1978).
[24] *Id*. at 2-3.

Every subsequently renewed NPDES permit included the alternative limitation granted by the Board, including the penultimate permit renewal on July 19, 2000. Though the 2000 permit was nominally set to expire on July 31, 2005, it has been administratively continued since January 25, 2005, when Midwest Gen applied for permit renewal.[25]

Illinois EPA issued a draft NPDES permit on December 2, 2011 without an alternative limitation, instead requiring compliance with general thermal effluent standards.[26] The 2011 draft permit did not require Midwest Gen to install new equipment for the cooling water intake structure.[27] In a comment to Illinois EPA, Midwest Gen requested reinstatement of the alternative limitation.[28] Illinois EPA issued a second draft permit on February 8, 2013, which included the alternative limitation and also did not require new cooling water intake structure equipment.[29] These provisions remained in the final NPDES permit issued on March 25, 2015.[30]

This Appeal

The Sierra Club, Natural Resources Defense Council, Prairie Rivers Network, and Environmental Law and Policy Center (Environmental Groups) petitioned the Board to review the final 2015 NPDES permit on April 29, 2015. The Board accepted this appeal for hearing. The petition argued that: (1) the renewed alternative limitation in the permit violated Subpart K; and (2) the permit did not contain necessary BTA requirements for the Facility's cooling water intake structure.[31]

The Environmental Groups, Illinois EPA, and Midwest Gen all moved for summary judgment. The Board partially granted and partially denied the motions and proceeded to a hearing, which occurred on October 5, 2016.[32] Each party then filed post-hearing briefs.

DISCUSSION

The Board now analyzes the merits of this appeal. The Board first discusses the preliminary issues of standing, burden of proof, and standard of review. The Board finds that the Environmental Groups have standing because they raised concerns regarding cooling water intake and thermal effluent discharge during the permit's comment period. They are not required, as Midwest Gen argues, to raise specific legal claims during a permit comment period. The Environmental Groups also have the burden of proof to show that the permit violates the law. Illinois EPA's determinations are not granted deference; the Board reviews the permit *de novo*.

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[25] *See* 35 Ill. Adm. Code 309.104(a)(2).
[26] R. 171, 185.
[27] R. 185-86.
[28] R. 201-07.
[29] R. 264.
[30] R. 687.
[31] Petition at 3-6.
[32] April Order at 16.

The Board then analyzes the permit's requirements for the Facility's cooling water intake system, finding that it contains interim BTA requirements. These interim BTA requirements do not mandate specific technologies, but allow the permit writer to establish interim BTA requirements in the permit based on best professional judgment. The record shows that the permit does so.

Lastly, the Board finds that its procedural rules allow renewal of the Facility's alternative limitation. The record shows that the nature of the Facility's thermal discharge has not materially changed and that the alternative limitation has not appreciably harmed Lake Michigan's balanced, indigenous population of shellfish, fish, and wildlife.

Environmental Groups Have Standing to Appeal

The Board previously ruled on the Environmental Groups' standing to appeal the Facility's permit in its April 2016 order,[33] but Midwest Gen renews its arguments in its post-hearing briefs. As the Board's jurisdiction to hear the appeal is a fundamental concern, the reasons for this ruling are detailed below.

The Environmental Protection Act (Act) grants the Board jurisdiction to hear a third-party challenge to a permit where the third party "raised the issues contained within the petition during the [permit's] public notice period or during the public hearing . . . ."[34] During the permit's comment period, the Environmental Groups raised issues regarding the Facility's cooling water intake structure and thermal effluent discharge, the aspects of the Facility's operations now under dispute.[35] Contrary to Midwest Gen's arguments, it is not necessary to raise specific legal claims, as if in a pleading, during the comment period.[36]

Midwest Gen also argues that the Environmental Groups' petition did not demonstrate that they raised their issues during the permit comment period.[37] But the petition alleges that the Environmental Groups submitted comments and appeared at Illinois EPA's hearing, raising their issues.[38] The administrative record supports this allegation.[39] Midwest Gen does not offer any precedent for its restrictive interpretation of the Act's standing requirement.

The Environmental Groups have standing under the Act. The Board therefore does not rule on whether they are also provided standing under the Illinois Constitution, as they argue.

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[33] April Order at 8-9.
[34] 415 ILCS 5/40(e)(2) (2014).
[35] *See* April Order at n.15, citing R. 1137 (supporting general thermal effluent limitation in 2011 draft permit); R. 473-80, 996-97 (objecting to alternative limitation in 2013 draft permit); R 1133-36 (objecting to Section 316(b) condition).
[36] Midwest Gen Brief at 42-43.
[37] *Id*. at 43.
[38] Petition at ¶ 5.
[39] *See* April Order at n.15, citing R. 1137 (supporting general thermal effluent limitation in 2011 draft permit); R. 473-80, 996-97 (objecting to alternative limitation in 2013 draft permit); R 1133-36 (objecting to Section 316(b) condition).

Environmental Groups Bear the Burden of Proof under a *De Novo* Standard of Review

The Environmental Groups bear the burden of proving that the final 2015 permit violates the Act or Board regulations.[40] The Environmental Groups make two claims. For the claim concerning the cooling water intake structure, the Environmental Groups must show that the permit does not reflect "interim BTA requirements," as required by federal regulations.[41] Concerning the alternative limitation, the Environmental Groups must show that the permit's alternative limitation does not comply with Board regulations on renewal.[42]

However, the Board does not grant Illinois EPA's permitting decision any deference.[43] The Board reviews these decisions under a *de novo* standard of review.[44] In addition, the Board's review must be "exclusively on the basis of the record" before Illinois EPA at the time it made its decision.[45]

The Final Permit Establishes Interim BTA Requirements

In its April 2016 order, the Board found that federal regulations implementing CWA Section 316(b) for existing cooling water intake structures require Illinois EPA to establish interim BTA requirements.[46] However, the Board also found that whether the permit contains these requirements depended on disputed facts (*e.g.*, reliability of studies on impingement and entrainment). The parties addressed the disputed facts at hearing. The Board now finds that the Facility's final permit does contain interim BTA requirements.

Interim BTA Requirements Are Equivalent to Requirements That Applied Before the 2014 Existing Facilities Rule

USEPA promulgated the Existing Facilities Rule in 2014.[47] The rule elaborates on CWA Section 316(b)'s "best technology available" provision, listing seven specific technologies for existing cooling water intake structures. The rule has different technology requirements for permits that were both applied for before the rule was promulgated and issued after promulgation, *i.e.*, interim BTA requirements under 40 C.F.R. § 125.98(b)(6). Though the rule does not specifically define interim BTA, a close reading of the Existing Facilities Rule demonstrates that interim BTA requirements are equivalent to the requirements that applied before the rule was promulgated.

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[40] 415 ILCS 5/40(e)(3) (2014); Prairie Rivers Network v. IPCB, 335 Ill. App. 3d 391, 400 (4th Dist. 2002).
[41] 40 C.F.R. § 125.98(b)(6)
[42] 35 Ill. Adm. Code 106.1180.
[43] Illinois EPA v. IPCB, 115 Ill. 2d 65, 70 (1986).
[44] City of Quincy v. Illinois EPA, PCB 08-86, slip op. at 39 (June 17, 2010).
[45] 415 ILCS 5/40(e)(3) (2014).
[46] 40 C.F.R. § 125.98(b)(6).
[47] 79 Fed. Reg. 48,300 (Aug. 15, 2014) (promulgating final Existing Facilities Rule).

The rule states that for "any permit issued after October 14, 2014, and applied for before October 14, 2014" (*e.g.*, the Facility's permit), the permit writer "must establish interim BTA requirements in the permit on a site-specific basis based on . . . best professional judgment in accordance with § 125.90(b) and 40 CFR 401.14."[48] Neither of these referenced provisions, however, explains how to establish interim BTA.

The first referenced provision, Section 125.90(b), applies to facilities not otherwise subject to the requirements of the Existing Facilities Rule. It simply reiterates that Section 316(b) continues to apply to facilities "not subject to requirements under §§ 125.94 through 125.99"—*i.e.*, the Existing Facility Rule's substantive requirements.[49] As the rule's substantive requirements apply to the Facility, Section 125.90(b) does not.

Section 401.14, though applicable, is worded very generally and refers to rules that no longer exist. It provides that the "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."[50] Part 402 has been withdrawn and is currently blank.[51]

The reasons for Part 402's withdrawal, however, are illuminating. Part 402 was adopted in 1976. Before it was withdrawn, it required permit writers to use a "Development Document" to determine BTA for cooling water intake structures.[52] As this Development Document was neither published in the Federal Register nor properly incorporated by reference, a federal court remanded Part 402.[53] In 1977, USEPA developed draft guidance for implementing CWA Section 316(b) and 40 C.F.R. § 401.14.[54] After Part 402 was remanded, Section 401.14 and the associated 1977 draft guidance were the applicable standards for existing facilities until the 2014 Existing Facilities Rule was adopted (notwithstanding other nullified rulemaking efforts).[55]

Section 125.98(b)(6) requires the permit writer to establish interim BTA in accordance with Section 401.14. That is, "interim BTA requirements" require compliance with the cooling water intake structure regulations, interpreted by draft guidance, that applied before the Existing Facilities Rule was promulgated in 2014. In short, the Existing Facility Rule directs permit writers to apply older BTA standards to permits issued after October 14, 2014 and applied for before October 14, 2014.

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[48] 40 C.F.R. § 125.98(b)(6).
[49] 40 C.F.R. § 125.90(b).
[50] 40 C.F.R. § 401.14.
[51] 40 C.F.R. Part 402.
[52] *See* 79 Fed. Reg. 48,300, 48, 315 (Aug. 15, 2014).
[53] *Id*.
[54] *Id*., citing USEPA, Draft Guidance for Evaluating the Adverse Impact of Cooling Water Intake Structures on the Aquatic Environment: Section 316(b) P.L. 92-500 (May 1, 1977), *available at* https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/ar/AR-1186.pdf (last accessed Jan. 12, 2017).
[55] *See* 79 Fed. Reg. 48,300, 48,315-18 (Aug. 15, 2014).

The Record Shows that the Facility Meets Interim BTA Requirements

The Board next must determine whether the record shows that the Facility's permit includes interim BTA requirements based on best professional judgment in accordance with 40 C.F.R. § 401.14. The Board finds that it does.

Illinois EPA described the cooling water intake structure while considering draft versions of the permit. As it stated, cooling water is drawn from an on-shore location, passes through an intake canal into a constructed embayment before entering the Facility in one of two intakes, each corresponding to one of the two generating units.[56] Each intake is equipped with traveling screens made with #12 gauge wire with 5-inch openings.[57] The design through-screen velocity at critical low water level is 2.0 feet per second for one unit and 1.8 feet per second for the other.[58]

The record contains substantial information on impingement and entrainment at the Facility. The record indicates that a study of impingement from 1975-76 shows that an estimated 898,457 fish comprising 30 species were impinged and alewife, rainbow smelt, and common carp eggs and larvae were entrained by the Facility.[59] No species impinged or entrained were threatened or endangered. An impingement and entrainment study from 2003-05 shows that 45 species were impinged during that time period, though 97% of the impinged species were alewives.[60] Open-water or deep-water species are impinged in low numbers, according to the study. The Board finds that the adverse environmental impact has not increased.

Based on the information in the record, the structure meets the interim BTA standard. The intake flow and velocity has decreased due to generating unit retirement, which reduced impingement and entrainment.[61] As the facility's existing technology meets the interim BTA requirements, the permit need not require installation of new technology.

Though this determination is made on a case-by-case basis, other permitting decisions have reached similar factual determinations when applying the interim BTA standards. For instance, a New Jersey environmental agency considered an NPDES permit for a power plant that reduced intake of cooling water by 43% due to a change in fuel source.[62] The final permit did not require installation of new technology, and a New Jersey appellate court found that the reduced water intake associated with the change in fuel source was a valid means of addressing entrainment.[63]

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[56] R. 666.
[57] *Id*.
[58] R. 1215.
[59] R. 666-67, 1213-14.
[60] R. 1215.
[61] R. 203, 240.
[62] *In re* New Jersey Pollutant Discharge Elimination System Permit Number NJ0005444, 2015 WL 3855593 (Sup. Ct. N.J. 2015).
[63] *Id*.

However, the Board does not make any factual finding or legal ruling applicable to the Facility's *next* NPDES permit. Interim BTA requirements are, as its name indicates, a precursor to a potentially different set of regulations

The Final Permit's Alternative Thermal Effluent Limitation Does Not Violate Subpart K

When ruling on the cross-motions for summary judgment in its April 2016 order, the Board found that whether the permit complies with Subpart K's renewal requirements (Section 106.1180) depended on two disputed issues of material fact: the nature of the thermal discharge; and the alternative limitation's effect on aquatic life. Therefore, in this opinion, the Board resolves those disputes and applies Subpart K to the facts. Below, the Board makes two factual findings: (1) the changes to the nature of the Facility's discharge have not been detrimental to aquatic life in and on Lake Michigan; and (2) the alternative limitation has not caused appreciable harm to the Lake's balanced, indigenous population.

Nature of the Thermal Discharge

Operations at the Facility have changed since 1978. When the Board granted the Facility's alternative limitation, four generating units were operating at the Facility.[64] When Midwest Gen applied to renew the permit in 2012, two units were operating.[65] With two fewer units operating, the Facility's thermal discharge has also changed. In 2012, it discharged heat into the lake at a 39% lower rate, and the discharge flowed at a 37% lower rate.[66] The Board finds that the information in the record shows that these changes to the Facility's thermal discharge are not harmful to aquatic life in and on Lake Michigan.

The Board's 1978 decision to grant an alternative limitation was based on studies conducted while the Facility was operating all four generating units.[67] Though the current Facility's reduced flow and reduced heat rejection rates could redirect the thermal plume to a different area of the Lake, this potential redirection was also considered by the 1970s studies. Thermal plumes are often redirected by changes in lake currents, weather conditions, and seasonal change. Furthermore, studies conducted since the Facility began operating two generating units have not shown any increased effect on aquatic life near the Facility, as discussed below.[68]

Section 106.1180(c) allows Illinois EPA to renew an alternative limitation if "the nature of the thermal discharge has not changed."[69] The next subsection, Section 106.1180(d), prohibits Illinois EPA from renewing an alternative limitation if "the nature of the thermal

[64] R. 203.
[65] *Id*.
[66] R. 239-40.
[67] R. 203.
[68] *See infra*, n.76-82.
[69] 35 Ill. Adm. Code 106.1180(c).

discharge has changed *materially*" (emphasis added).[70] Where there is an immaterial change, renewal is not explicitly authorized by Section 106.1180(c). However, neither is renewal explicitly prohibited by Section 106.1180(d).

This apparent inconsistency was not raised during the Board's Subpart K rulemaking.[71] Illinois EPA proposed adding the Subpart K rules. In its proposal, Illinois EPA explained that Section 106.1180 specifies a process for Illinois EPA to "evaluate whether the conditions on which the prior relief was based have changed."[72] No mention of materiality is made. At hearing, Illinois EPA stated that Section 106.1180 is intended to allow renewal for a facility "operating similarly" to when the Board initially granted the alternative limitation.[73] Again, no rulemaking participant distinguished between a material and immaterial change. Ultimately, the Board adopted Section 106.1180 with language identical to that proposed by Illinois EPA.

However, in the context of Subpart K as a whole, the policies behind Section 106.1180 are clear. Receiving a renewed alternative limitation from Illinois EPA is simpler than receiving a new alternative limitation from the Board. For instance, renewal does not require a "detailed plan of study."[74] There would be no need for the more complex Board procedure if the change in the nature of the thermal discharge is immaterial. Of course, Illinois EPA's determination on materiality may be appealed to the Board.

Logically, subsections (c) and (d) are opposite sides of the same coin. Subsection (c) *authorizes* Illinois EPA to renew an alternative limitation if there is either no change or the change is immaterial. Subsection (d) *prohibits* Illinois EPA from renewing an alternative limitation if any change is material *and directs the applicant to file a new petition with the Board*. The two subsections cover the universe of scenarios: there is either a change or no change; and if there is a change, it is either immaterial or material. Subsection (c) does not direct the applicant to petition the Board if the change is immaterial. The Board can conceive of no reason for the rule to leave immaterial changes unaddressed, as the Environmental Groups would have it.

The Board finds that the omission of the word "materially" from subsection (c) was inadvertent and is merely scrivener's error. The language setting forth the standards in subsections (c) and (d) otherwise mirrors each other. The Board interprets Section 106.1180 in a manner that avoids the absurd result of leaving Illinois EPA and the public without direction when there is an immaterial change. Therefore, when the nature of a thermal discharge has changed, Illinois EPA may renew when the change is not material and Illinois EPA must not renew when the change is material.

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[70] 35 Ill. Adm. Code 106.1180(d).
[71] Procedural Rules for Alternative Thermal Effluent Limitations under Section 316(a) of the Clean Water Act: Proposed New 35 Ill. Adm. Code Part 106, Subpart K and Amended Section 304.141(c), R13-20 (Feb. 20, 2014) (Board order adopting regulations).
[72] R13-20, Illinois EPA's Statement of Reasons at 10 (June 20, 2013).
[73] R13-20, Transcript of Second Hearing at 27:18 (Oct. 28, 2013).
[74] 35 Ill. Adm. Code 106.1120.

As for when a change to the nature of a thermal discharge is "material," Subpart K does not define the term or describe types of material changes. The critical question for this appeal, however, is whether a *beneficial* change can be material under the rule, or whether only *detrimental* changes can be material.

Here too, the record of the Subpart K rulemaking does not reveal the intent of the Agency in proposing the rule or the Board in adopting it. However, the policy purpose of Section 106.1180—allowing the Board to review potentially problematic changes—is an interpretive guide. Requiring the more extensive Board review procedure for beneficial changes would counter the intended "streamlining" effect of Subpart K. When the discharge covered by the existing alternative limitation has changed for the better, there is no need for the Board to hear a petition for a new alternative limitation. Accordingly, the only types of changes that can be material for the purposes of Subpart K are those with the potential to make the existing alternative limitation *less* protective. That is, only detrimental changes to the nature of a discharge can be considered material; beneficial changes cannot.

Therefore the Board finds that the changes to the nature of the Facility's discharge since 1978 are not material.

Appreciable Harm

Subpart K states that Illinois EPA may renew an alternative limitation if the permittee demonstrates that the alternative limitation 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."[75] The inverse is also stated in Subpart K; Illinois EPA must not renew an alternative limitation that has caused appreciable harm. This element, then, turns on the factual question of whether the record shows the alternative limitation has caused appreciable harm.

The facts in the record show that the Facility's alternative limitation has not caused appreciable harm. Studies supporting the Board's 1978 decision to grant the alternative limitation, a study of impingement at the Facility from 2003-05, a 2009 report by the United States Geological Survey (USGS), and a 2014 assessment by the Illinois Department of Natural Resources (DNR) inform the Board's determination on appreciable harm.

The Board's original decision to grant an alternative limitation forms the baseline against which current conditions are compared. The studies, performed between 1971 and 1974, evaluated the Facility's thermal plume, lake currents, water quality, fisheries, fish egg and larvae distribution, phytoplankton, zooplankton, and benthic samples and analysis. After reviewing these studies, the Board concluded that the thermal discharge from the Facility has "not caused and cannot be reasonably expected to cause significant ecological damage to receiving waters."[76]

Midwest Gen's Proposal for Information Collection studied data on impingement gathered between 2003 and 2005. This study indicates that the fish population near the Facility

[75] 35 Ill. Adm. Code 106.1180(c).
[76] R. 203, 1115-1117.

did not fundamentally change since the late 1970s.[77] Most affected species, such as salmonids, slupins, and coregonids, are impinged in low numbers and therefore not adversely affected by the Facility's thermal plume.

USGS studied the fish population in Lake Michigan in 2009. That study includes data from a 2009 trawl transecting Lake Michigan near the Facility. The study found that alewife is a numerically dominant species in the Lake, as it was in the 1970s, and rainbow smelt have declined since 1993 for unclear reasons.[78] Overall, however, the study states that low prey fish counts were due to a suite of factors, including predation on alewives by Chinook salmon, as well as a lower population of fish that form the diet of salmon and lake trout.[79] These declines were present throughout Lake Michigan, and cannot be linked specifically to the Facility's thermal discharge.[80]

In 2014, Illinois EPA requested that DNR assess the balanced, indigenous population in Lake Michigan. The assessment found changes in the Lake's biological community, but attributed them to the effect of invasive species and changes in lake productivity to create needed nutrients and energy.[81] The assessment does not indicate that changes in the aquatic community relate to temperature or the Facility's thermal discharge.

Based upon these studies, the Board finds that the thermal discharges have not caused appreciable harm to the balanced, indigenous population in Lake Michigan.

Other Subpart K Issues

The parties raise other issues concerning Subpart K. First, the Environmental Groups challenge Illinois EPA's authority to renew the alternative limitation, arguing that Illinois EPA may only renew alternative limitations granted by the Board *under the Subpart K rules*. Second, Midwest Gen argues that the Board cannot apply the Subpart K rules to this permit application because Midwest Gen submitted it to Illinois EPA before the Board adopted Subpart K. The Board discusses each issue in turn.

Illinois EPA Has the Authority to Renew the 1978 Variance. The Subpart K rules contain procedures that apply to the Board, when considering whether to grant an alternative limitation, and procedures that apply to Illinois EPA, when considering whether to renew an alternative limitation. The Environmental Groups argue that Illinois EPA may renew an alternative limitation only if the Board granted the limitation in a proceeding governed by Subpart K.[82]

[77] R. 1216.
[78] R. 204, 226-227, 231.
[79] R. 225, 229, 231.
[80] R. 203-04.
[81] R. 618.
[82] Environmental Groups Brief at 17.

According to this argument, because the original 1978 alternative limitation was not granted under Subpart K procedures, Illinois EPA lacks authority to renew it. However, Subpart K's text does not support this interpretation, nor do the Environmental Groups provide rulemaking history or other information that shows the Board intended every discharger in Illinois with an alternative limitation to petition the Board for a new one.

Section 106.1180 states 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."[83] The Environmental Groups argue that the phrase "pursuant to this Subpart" modifies "granted," *i.e.*, Illinois EPA may renew alternative limitations only when granted pursuant to Subpart K.

But it is more appropriate to read "pursuant to this Subpart" as modifying "request," *i.e.*, the permittee may request renewal pursuant to Subpart K. Read this way, Section 106.1180 authorizes Illinois EPA to renew alternative limitations, whether or not they pre-existed Subpart K, as long as Illinois EPA follows the Subpart K regulations when it considers the renewal request.

The Environmental Groups' preferred reading would have significant consequences: every entity holding an NPDES permit with an alternative limitation it wished to retain would be required to seek a new alternative limitation from the Board under the Subpart K procedures. Subpart K's rulemaking record does not indicate that intent. Indeed, it shows the contrary: Illinois EPA proposed language (adopted verbatim) in Section 106.1180 to make the renewal process more "streamlined," not trigger a comprehensive State-wide review.[84]

The Board Is Not Retroactively Applying Subpart K. The Board adopted Subpart K after Midwest Gen requested that the Agency renew the alternative limitation. In the Board's April 2016 order, it ruled that applying Subpart K to Illinois EPA's renewal is not impermissibly retroactive.[85] Midwest Gen's post-hearing brief reprises this argument in greater detail. Though these arguments are not convincing, the Board will not address them in detail because the issue is effectively moot. The permit does not violate the law and the Board would uphold it whether or not it applied Subpart K.

CONCLUSION

The permit issued by Illinois EPA does not violate the law. The record shows that the permit requirements that apply to the Facility's cooling water intake system reflect interim BTA. Furthermore, the permit's alternative thermal effluent limitation based on the Board's 1978 grant complies with Board regulations because the nature of the thermal discharge has not materially changed and has not caused appreciable harm to a balanced, indigenous population of shellfish, fish, and wildlife in and on Lake Michigan.

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[83] 35 Ill. Adm. Code 106.1180(a).
[84] R13-20, Illinois EPA's Statement of Reasons at 10.
[85] April Order at 11.

ORDER

The Environmental Groups have failed to show that Midwest Gen's NPDES permit for the Waukegan Generating Station as issued by Illinois EPA on March 25, 2015 violates the law. Therefore, the permit is upheld.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order.[86] Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders.[87] The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received.[88]

I, Don A. Brown, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on January 19, 2017, by a vote of 5-0.

Don A. Brown, Assistant Clerk
Illinois Pollution Control Board

[86] 415 ILCS 5/41(a) (2014); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706.
[87] 172 Ill. 2d R. 335.
[88] 35 Ill. Adm. Code 101.520, *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.