

November 01, 2014

EPA's latest final 316(b) rule: The continuing saga of fish, facilities, and keeping the lights on

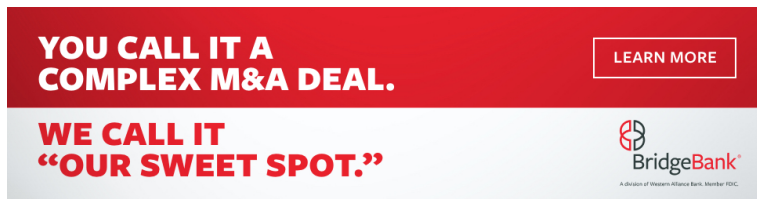
Winston K. Borkowski

Share:



Section 316(b) of the Clean Water Act is short on words but long on controversy. Regulating cooling water intake structures, primarily at power plants and large manufacturing facilities,


the statutory provision requires that “the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” While section 316(b) is silent as to exactly what those environmental impacts are, the potential impact of pumping several hundred million gallons of water per day from a river or estuary is not difficult to imagine. As water is drawn into a power plant or industrial facility, aquatic organisms—primarily fish—are drawn in with it and may suffer one of two fates—impingement or entrainment.



**YOU CALL IT A
COMPLEX M&A DEAL.**

[LEARN MORE](#)

**WE CALL IT
“OUR SWEET SPOT.”**

**BridgeBank**
A Division of Western Alliance Bank, Member FDIC.

Impingement occurs when a fish cannot escape the velocity of the water pumped into the facility and gets trapped against a screen or grate installed at the intake pipe. Entrainment occurs when fish and other organisms, too small to be impinged, pass into the cooling system. Although the Clean Water Act does not mention impingement or entrainment, minimizing mortality from both—primarily from power plants—has been the focus of the U.S. Environmental Protection Agency’s (EPA’s) 316(b) rulemaking efforts.

Like many environmental programs, the journey from codification to implementation has been a tumultuous one. Born of legislation, section 316(b) has been reared by litigation. On May 19, 2014, EPA released a 559-page prepublication version of its final rule *National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities*. The final rule was published in the [Federal Register](#) on August 15, 2014 and went into effect on October 14, 2014. The rule is the culmination of nearly 40 years of litigation beginning in 1977 with an industry challenge to EPA's original set of regulations promulgated in April 1976. *Appalachian Power Co. v. Train*, 566 F.2d 451 (4th Cir. 1977). Perhaps best described as an administrative faux pas, EPA's first 316(b) rule required consideration of a development document when assessing the best technology available (BTA) for minimizing adverse environmental impact. The U.S. Fourth Circuit Court of Appeals found EPA's reliance on the development document fatal and remanded the rule to EPA noting that it did not fault EPA for its "point source by point source" application of the rule. EPA's site-specific approach to determining BTA was formalized in its 1977 draft guidance document and served as the framework for 316(b) assessments until another wave of litigation was initiated in 1993.

In January 1993, a citizen suit was filed alleging EPA had violated the Clean Water Act by failing to promulgate regulations to implement section 316(b). EPA resolved the initial litigation by consent decree in 1995 committing to three phases of rule development. Phase I addressed new facilities. Phase II established regulations for existing facilities. Phase III addressed existing facilities not captured within the scope of the Phase II existing-facilities rule, e.g., lower-flow electrical facilities, new offshore facilities. Each rule addressing each phase was challenged in federal court. EPA's May 2014 final rule responds primarily to the remand of the Phase II existing-facilities rule.

Many electrical generating facilities that use large volumes of cooling water on a daily basis were constructed years before section 316(b) was enacted. Cooling water is essential for the operation of these facilities and maintaining electrical service to millions of residential and commercial end users. How to minimize impingement mortality and entrainment at existing facilities has been a point of contention between utility operators, who must operate to ensure consistent delivery of electric power, and environmental interests concerned that cooling water intake systems are yet another line of assault on aquatic systems already burdened by multiple environmental stressors. EPA's efforts to

strike an accord between the two camps have not been easy and it remains to be seen just how final EPA's final rule will be. Petitions filed by more than a dozen environmental organizations and several industry groups in six circuit courts of appeal ultimately resulted in the U.S. Judicial Panel on Multidistrict Litigation selecting the Fourth Circuit court of appeals for consolidation of the pending challenges. EPA's continued reliance on a site-by-site approach to 316(b) assessments, a policy EPA has embraced since 1977, is likely to be the key issue in the latest round of legal challenges nearly 40 years later.

Environmental interests preach a simple sermon—use less water and kill fewer fish and aquatic organisms. How to put an industrial facility built in the 1950s or 1960s on a water diet is the point of contention. Cooling systems vary as to efficiency with the least efficient being once-through cooling systems, which take in large volumes of water, run it through the plant, and discharge the water back into the source water lake, stream, or estuary. Closed-cycle recirculating systems reuse the water drawn into the plant by parking the warmed water in a cooling pond and reusing the water, only adding new water to make up for the volume lost (primarily) to evaporation. Dry cooling systems use very little water, relying on air drafts for cooling. Dry systems are technically feasible but generally not considered

a practical industry alternative to once-through or closed-cycle systems, especially in humid climates.

Boiled down to its essence, the issue becomes one of which cooling system should existing facilities employ. Should EPA perpetuate the legacy of high-volume once through cooling or force industry to convert to closed-cycle systems? For existing facilities the answer is not a simple one and may come down to a matter of real estate: Where would new cooling towers or cooling ponds go on a site first cleared in the fifties or sixties and now surrounded by industrial, commercial, and, very often, residential development? Construction of facilities on a new site might be costly, but trying to retrofit an existing site may be cost prohibitive or physically impossible. There lies the dilemma and industry's insistence that a site-by-site approach to 316(b) assessment is essential. Equally essential, environmental advocates would argue, is finally ending the perpetual use of billions of gallons of water and the death of untold fish and aquatic organisms. So does EPA's rule do it—reduce water consumption and protect fish and aquatic life yet provide existing facilities with the flexibility needed to address site limitations and avoid economic waste? It depends on who you ask.

EPA certainly believes so, stating in a two-page fact sheet that by “[s]etting flexible technology standards, EPA’s common-sense regulations will greatly reduce damage to ecosystems while accommodating site-specific circumstances and providing cost-effective options.” But it is that flexibility and cost consciousness that has vexed the environmental community since EPA first promulgated a rule covering existing facilities in 2004. 69 Fed. Reg. 41,576 (July 9, 2004). Tracing its roots to EPA’s 1977 guidance, which drew substance from the ill-fated development document, the underlying theme of EPA’s 2004 Phase II existing-facilities rule was flexibility, prescribing a suite of five compliance options for meeting defined impingement and entrainment performance standards. Cost-benefit was squarely addressed in the 2004 rule, allowing a demonstration that cost of compliance would be significantly greater than anticipated by EPA for a similar facility compared to the benefit of meeting the applicable performance standard. Analogizing the section 316(b) BTA standard to the “best available technology” (BAT) standard applied in the context of technology-based effluent limitations, the U.S. Second Circuit Court of Appeals struck down the bulk of the 2004 Phase II rule based on EPA’s explicit reliance upon cost consideration and other grounds. *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2d Cir. 2007). Appealed by industry, the U.S. Supreme Court

held section 316(b) does not preclude a cost-benefit analysis. *Entergy Corp. v. Riverkeeper, Inc.*, 129 S. Ct. 1498 (2009).

EPA's 2004 rule did not impose closed-cycle cooling as BTA and provided the suite of five compliance options. Fast-forward 10 years to EPA's 2014 final rule which not only does not mandate closed-cycle cooling as BTA but provides a suite of seven compliance options to address impingement and leaves BTA for entrainment up to the applicable permitting authority. Where the 2004 rule applied to facilities that withdraw 50 million gallons per day, EPA's 2014 rule captures facilities that withdraw a minimum of two million gallons per day. To trigger either rule, old or new, a minimum of 25 percent of the water withdrawn must be used for cooling purposes. The facility owner or operator may choose from the seven options to meet BTA requirements for reducing impingement. As mentioned, steps necessary to meet BTA for entrainment must be determined by the permitting authority facility by facility.

The seven options include three preapproved measures to meet BTA, three streamlined approaches for reducing impingement, and a seventh more detailed demonstration that the facility meets an impingement mortality

performance standard. The first of the seven options is to employ a closed-cycle recirculating system, the approach environmental interests believe should be the very definition of BTA. The remaining preapproved measures include a design through-screen velocity of 0.5 feet per second or, for offshore facilities, employing a velocity cap. Streamlined options include a demonstration that existing impingement reduction measures approximate a closed-cycle recirculating system, ensuring an actual through-screen velocity of 0.5 feet per second or employing traveling screens with a fish return system. A final option is a detailed demonstration that the system of technologies employed meet a set of impingement mortality standards repurposed from the failed 2004 rule.

While each option has its own complications and associated costs, the seven-option approach is far afield from the environmental community's vision to adopt option one—closed-cycle recirculating systems as BTA. Exactly how much flexibility each option affords industry remains to be seen. EPA's final rule is rife with process, required studies, detailed monitoring, extensive reporting, and even a peer-review process requiring certain submittals to be scrutinized as if for publication in a refereed journal. In stark contrast to EPA's 2004 rule—which critics argued allowed a site to be scraped clean and rebuilt yet

considered an existing facility—new units at existing facilities under the 2014 rule trigger the more stringent requirements of EPA's 2001 Phase I new-facilities rule. The 2014 rule is multifaceted, complicated, and too new to gauge the impact on the regulated community or benefit to the ecological systems it is designed to protect.

So after nearly 40 years of rulemaking and litigation only one thing remains certain—uncertainty. Several appeals of EPA's final rule are pending, which, if past history is any indication, could result in yet another federal appellate court dissecting EPA's efforts and sending all or part of the 2014 rule back to EPA for another do-over. Still, facility owners and operators have no choice but to gear up for compliance, start studies, and prepare to implement the new rule notwithstanding an uncertain future. Environmental advocates and facility owners and operators must certainly wonder—is this EPA's final 316(b) rule or just one more chapter in the continuing saga of fish, facilities, and keeping the lights on?

[Cookies Settings](#)

Accept All Cookies

We are making improvements to our user experience and offering more transparency and control over cookies. By clicking "Accept All Cookies," you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in marketing efforts. Click on

"Customize Settings" to learn more about individual cookies and choose settings by category. [Privacy policy](#)
