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COMMENTARY

EPA Issues Flexible Standards for Cooling Water Intake Structures at Existing Manufacturing Facilities and Power Plants

On May 19, 2014, the U.S. Environmental Protection Agency ("EPA") released a final rule with Clean Water Act ("CWA") standards for cooling water intake structures ("CWIS") at existing manufacturing facilities and power plants. The final standards are more flexible than those proposed by EPA for existing facilities in April 2011. Still, many facilities will face significant compliance costs and more burdensome application requirements when renewing their wastewater discharge permits under the National Pollution Discharge Elimination System ("NPDES"). Companies should begin planning for compliance well in advance of their NPDES permit renewals to allow sufficient time for data collection, the preparation of studies to demonstrate compliance, and any necessary changes to CWIS technologies or operational practices at their facilities.

Rulemaking History

Section 316(b) of the CWA requires that "the location, design, construction, and capacity of [CWIS] reflect the best technology available for minimizing adverse environmental impact." The CWA does not define the "best technology available" ("BTA"), but the Supreme Court has shed light on that phrase in response to EPA's past rulemakings under CWA § 316(b). In the past ten years, EPA has issued three phases of CWIS rules, all of which have been the subject of extensive litigation:

Phase I Rule for New Facilities. In 2001, EPA published a Phase I rule for any type of new facility (except oil and gas exploration) that has a CWIS with a design intake flow greater than two million gallons per day ("gpd") and that uses at least 25 percent of the water withdrawn for cooling purposes.[1] Under the Phase I Rule, a "new facility" is a greenfield or stand-alone facility that commenced construction after January 17, 2002. The U.S. Court of Appeals for the Second Circuit upheld the bulk of the Phase I rule but rejected certain provisions allowing new facilities to meet the Phase I requirements through restoration measures.[2]

Phase II Rule for Existing Power Plants. In 2004, EPA published the Phase II rule for existing power plants with CWIS of design intake flows greater than or equal to 50 million gpd.[3] The Second Circuit remanded numerous aspects of the Phase II rule to EPA, including the Agency's decision to reject closed-cycle cooling as BTA based on a comparison of costs and benefits.[4] In 2009, the U.S. Supreme Court upheld EPA's authority to consider costs and benefits when determining BTA, but the Court left it to EPA's discretion to decide exactly how to do so.[5] The Supreme

Court remanded the Phase II rule to the Second Circuit, and EPA subsequently asked the Second Circuit to return the rule to EPA for further review.

Phase III Rule for New Oil & Gas Facilities. In 2006, EPA published the Phase III rule with requirements for CWIS at certain offshore oil and gas extraction facilities that commenced construction after July 17, 2006.[6] In July 2010, the U.S. Court of Appeals for the Fifth Circuit upheld the Phase III rule as it relates to new oil and gas extraction facilities.[7] However, the Fifth Circuit granted EPA's request to remand portions of the Phase III rule that addressed electric generators and that established requirements for existing manufacturing facilities on a case-by-case basis using best professional judgment.

On April 20, 2011, EPA issued a proposed rule in response to (i) the Second Circuit's rejection of the restoration provisions in the Phase I rule; (ii) the remand of EPA's Phase II rule; and (iii) the remand of the existing facility portion of the Phase III rule.[8] EPA proposed to delete the restoration provisions from the Phase I rule, and in place of the remanded Phase II and III rules, EPA proposed to address existing power plants and existing manufacturing facilities in one rulemaking. The May 19, 2014 final rule covers these same elements but allows more flexible compliance options than did the proposed rule, especially with respect to impingement mortality.[9] The final rule also calls for NPDES permitting authorities to determine entrainment control requirements on a site-specific basis.[10] New CWIS units at existing facilities must comply with more stringent compliance alternatives.

Covered Facilities

The final rule applies to all existing NPDES-permitted facilities that use water from a CWIS with a design intake flow of at least two million gpd from "waters of the United States" and that use 25 percent or more of the water withdrawn exclusively for cooling purposes. "Existing facility" means a facility that commenced construction on or before January 17, 2006 (the Phase I rule trigger date), in the case of a power plant or manufacturing facility, or on or before July 17, 2006 (the Phase III rule trigger date), in the case of an offshore oil and gas extraction facility. There are also requirements for new standalone CWIS units that are added to existing facilities after the effective date of the final rule.

Impingement Mortality at Existing Units

In the final rule, EPA establishes the BTA standard for impingement mortality based on modified traveling screens with fish return and handling systems. EPA includes a numeric performance standard as one compliance alternative, but also offers six other compliance alternatives that are equivalent or better in performance than the determined BTA. This differs significantly from the 2011 proposed rule, which would have uniformly subjected facilities to a numeric impingement mortality limit unless they demonstrated a design or actual intake velocity below a certain threshold. The impingement compliance alternatives in the final rule fall into three categories:

Alternatives Based on Preapproved Technologies. The following preapproved technologies require no biological compliance monitoring and provide the greatest certainty to the regulated facility that they will be deemed compliant with CWIS requirements:

- A closed-cycle recirculating system, which can include a lake or reservoir if it is demonstrated that the lake or reservoir was constructed as part of the cooling water system;
- A CWIS that the NPDES permitting authority determines has a **design** maximum through-screen intake velocity of 0.5 feet per second ("fps"); or
- An offshore velocity cap with certain design specifications that is located at least 800 feet offshore and is installed before the effective date of the final rule.

Alternatives That Offer a Streamlined Approach to Compliance. The following compliance options require at least two years of biological monitoring and a two-year study to show that impingement mortality has been minimized:

- A CWIS that the permitting authority determines has an **actual** maximum through-screen intake velocity of 0.5 fps;
- Modified traveling screens with a fish return and handling system whose demonstrated performance represents the BTA for impingement reduction at the site; or
- A combination of other technologies or operational measures whose demonstrated performance is determined by the NPDES permitting authority to be the BTA for impingement reduction at the site. In making this

determination, the permitting authority will be "informed by" a comparison of the impingement reduction expected at the site compared to the numeric impingement standard discussed below. With this category, EPA expects that facilities will receive some credit for technologies or operating measures other than modified traveling screens (for example, partial closed-loop cooling, variable speed pumps, seasonal outages, behavioral deterrent systems, and choice of intake location).

Numeric Impingement Mortality Performance Standard. A facility owner or operator may demonstrate compliance with the following numeric impingement mortality performance standard:

- Twelve months of impingement mortality performance of all life stages of fish and shellfish of no more than 24 percent mortality, including latent mortality, for all non-fragile species. To demonstrate compliance with this standard, a facility is required to monitor impingement using a sample that has been passed through a sieve or net with no more than 0.56 inches maximum opening, at a minimum frequency of monthly, unless a greater frequency is specified by the permitting authority. The numeric standard is based on the use of modified traveling screens, but facilities may implement any technology, so long as they consistently meet the numeric impingement mortality limit. EPA expects that very few facilities will choose to comply with the numeric standard.
- The final rule includes some additional flexibility for low-capacity utilization units and facilities with de minimis impingement. NPDES permitting authorities may set site-specific controls that are less stringent than the ones outlined above for existing electric generating units with annual average capacity utilization rates of less than 8 percent averaged over a 24-month block. In addition, the permitting authority may determine that no additional impingement mortality controls are warranted if a de minimis rate of impingement exists. The final rule does not define the concept of de minimis impingement, but EPA gives an example of a facility that withdraws less than 50 million gpd and less than 5 percent of mean annual flow of the river on which it is located, and that is not co-located with other facilities that have CWIS. In contrast, EPA expects that facilities that only use trash racks as a control cannot have a de minimis rate of impingement.

Entrainment at Existing Units

Because EPA found that there is no single technology that amounts to BTA for entrainment at existing facilities, the final rule requires permitting authorities to determine BTA entrainment requirements on a site-specific basis. BTA for entrainment control must be determined based on a consideration of the numbers and types of organisms entrained, increased air emissions associated with entrainment technologies, land availability, remaining useful plant life, and social benefits and costs, including monetary costs. Certain facilities—those with actual intake flows greater than 125 million gpd—must develop and submit an Entrainment Characterization Study and other specified data for the permitting authority's use when establishing site-specific entrainment requirements. In the preamble for the final rule, EPA says site-specific determinations may require variable speed pumps, water reuse, fine mesh screens, closed-cycle recirculating systems, a combination of technologies, or no technologies beyond impingement controls.

New Units at Existing Facilities

The final rule requires the owner or operator of a new CWIS unit at an existing facility to achieve one of two compliance alternatives to satisfy the national BTA standards for both impingement mortality and entrainment. First, the facility owner or operator may choose to reduce its actual intake flow at the new unit to a level commensurate with a closed-cycle recirculating system. Alternatively, the facility owner or operator may choose to demonstrate technological or other control measures that reduce impingement mortality and entrainment to a level that is essentially commensurate with closed-cycle cooling. These new unit requirements apply only to the volume of cooling water used by the new unit, or to the CWIS used by the new unit. The NPDES permitting authority may establish alternative entrainment requirements for new units when compliance with the new unit entrainment standards would result in costs that are out of proportion to the costs considered by EPA.

Endangered Species Act Review

The final rule imposes new requirements related to the Endangered Species Act ("ESA") on covered facilities applying for a CWIS permit. Currently, the ESA only requires federal agencies to consult with the National Marine Fisheries Service and/or U.S. Fish and Wildlife Service (collectively, the "Services") to determine whether a federal action is likely to adversely affect an endangered species or critical habitat. In contrast, state-administered permit programs—such as state NPDES permitting programs—are not bound by such ESA requirements. The final rule, however, requires *all* NPDES permitting programs to receive and implement feedback from the Services. In permit applications, facility owners and operators will need to identify all threatened and endangered species and designated habitats that are present in the vicinity of their CWIS. Permit applications and draft permits will be reviewed by the Services, and NPDES permitting authorities will need to consider any feedback from the Services as a relevant factor in deciding what conditions to establish in permits.

Nuclear Facilities

The final rule has a contingency for situations where compliance with the new standards conflict with safety requirements established by the U.S. Nuclear Regulatory Commission ("NRC"), the Department of Energy, or the Naval Nuclear Propulsion Program. Specifically, if the owner or operator of a covered nuclear facility demonstrates that compliance with the proposed CWA § 316(b) standards conflicts with safety requirements of any of these entities, the final rule requires that the NPDES permitting authority establish BTA requirements that would not result in such a conflict.

What to Expect Next

The final rule will become effective 60 days after its publication in the *Federal Register*. Once the rule is effective, the new standards will be implemented through NPDES permits issued by EPA or authorized state permitting authorities. New units at existing facilities must comply by the time they begin operation. For new units, the permit application information required under the final rule must be submitted to the permitting authority no later than 180 days before beginning operation.

Existing facilities must comply with the final rule as soon as practicable. As NPDES permits for existing facilities are renewed, EPA and states will include a compliance schedule for the new standards in the renewal permits. However, the final rule allows for extensions of the required application materials for facilities whose permit cycles end within the next 45 months. To avoid incompatible or inefficient technology requirements, EPA has synchronized the compliance deadlines for impingement mortality and entrainment standards. Regardless of the compliance alternative selected for impingement mortality, the final rule requires owners or operators of existing facilities to meet the impingement mortality requirements as soon as practicable after issuance of a final permit establishing entrainment requirements.

Planning For Compliance

The final rule is a significant departure from the proposed rule in that some much-needed flexibility was introduced to develop impingement mortality objectives that take into account site-specific conditions rather than a single impingement mortality limit, unless a specified low-flow standard was met. For example, lakes and reservoirs can be considered a closed-cycle system if they were constructed as part of that system, even if the lakes and reservoirs support recreational uses and qualify as "waters of the United States" under the CWA.

The final rule also provides some relief to the ongoing biological monitoring requirements once a technology is installed. For example, the proposed rule would have required monthly impingement mortality monitoring for the life of a facility in many cases. The final rule reduces the monitoring requirements based on the technology employed. For example, facilities using a suite of technologies as approved by the permitting authority may be limited to only two years of optimization monitoring.

Ultimately, the costs of complying with the final rule for a specific facility depend on the technologies already in use and the extent to which regulators have focused on impingement and entrainment from CWIS in the past using the previously existing "best professional judgment" standard. If the facility has already implemented one of the designated technologies

and collected data demonstrating the efficacy of the technologies, additional costs associated with complying with the rule may not be significant. If, however, the facility does not utilize any technologies permitted by the final rule and has not conducted any relevant monitoring or studies, costs of complying with the rule could be significant. Another issue that could drive compliance costs, regardless of whether the designated technologies are used, is whether the CWIS potentially impacts any threatened or endangered species. Careful and early analysis of these considerations will be critical to minimizing costs associated with the final rule.

Lawyer Contacts

For further information, please contact your principal Firm representative or one of the lawyers listed below. General email messages may be sent using our "Contact Us" form, which can be found at www.jonesday.com.

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Endnotes

1 40 C.F.R. Part 125 Subpart I.

2 *Riverkeeper, Inc. v. EPA*, 358 F.3d 174 (2d. Cir. 2004).

3 40 C.F.R. Part 125 Subpart J.

4 *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2d Cir. 2007).

5 *Entergy Corp v. Riverkeeper, Inc.*, 556 U.S. 208 (2009).

6 40 C.F.R. Part 125 Subpart N.

7 *Conoco-Phillips Co. v. EPA*, 612 F.3d 822 (5th Cir. 2010).

8 76 Fed. Reg. 22174 (Apr. 20, 2011).

9 Impingement refers to the entrapment of fish or shellfish on the outer part of an intake structure or against a CWIS screening device during periods of water withdrawal.

10 Entrainment refers to fish or shellfish present in the intake water flow that enter and pass through a CWIS and into the cooling water system.