



Institute for Policy Integrity

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Attention: Docket No. EPA-HQ-OW-2008-0667

Subject: Comments on Proposed Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities

The Institute for Policy Integrity (“Policy Integrity”) submits the following comments on the Environmental Protection Agency’s (“EPA”) proposed revisions to its regulation of cooling water intake structures at existing manufacturing and power plant facilities. These comments are aimed at ensuring that these regulations maximize net social benefits and incorporate flexibility, ease, and efficiency.

Policy Integrity at New York University School of Law is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. Environmental quality is one particular area of focus for Policy Integrity.

EPA’s 2011 proposed Phase II rule has significant advantages over its 2004 iteration. Nonetheless, EPA’s proposals could be refined and strengthened in various ways to ensure that the finalized regulations reliably maximize net benefits without creating an undue burden for regulated entities. In the final rulemaking EPA should make the following changes:

- Include more quantification in the national cost-benefit analysis;
- Conduct an explicit break-even analysis when monetized costs exceed monetized benefits;
- Ensure that site-specific standards are implemented within a set time frame;
- Set a deadline by which all existing facilities must comply with the new source standards;
- Justify the use of site-specific or nationally uniform standards on cost-benefit grounds;
- Require structured site-specific reviews to maximize net social benefits;
- Avoid relying on self-reported industry data whenever possible;
- Strengthen the peer review process under proposed Sections 122.21(r)(9)-(12);
- Clarify how structured site-specific review differs from a “best professional judgment” standard;
- Utilize retrospective review;
- Implement an administrative appeals process;

- Retain federal authority for facilities that risk significant interstate issues and/or externalities; and
- Articulate the justification for expanding the scope of the Phase II Rule to cover more facilities.

I. Legislative and Judicial Background for Cooling Water Intake Structures Regulation

EPA has proposed regulating cooling water intake structures at existing facilities pursuant to Section 316(b) of the Clean Water Act:

Any standard established pursuant to section 301 or section 306 of this Act [33 U.S.C.S. §§ 1311 or 1316] and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.¹

The cross-reference to Sections 301 and 306 indicates that Section 316(b) covers new and existing point sources regulated under the National Pollutant Discharge Elimination System (“NPDES”) permitting program.

The proposed regulation of cooling water intake structures is further pursuant to a consent decree issued by the Southern District of New York in 1995 and amended thereafter.² The consent decree underwent a number of revisions, and in 2000 the environmental group plaintiffs and EPA agreed to divide the 316(b) regulation into three separate phases.³ In 2001, EPA finalized Phase I, which regulates certain new sources.⁴ In 2004, EPA finalized Phase II, which covered large existing facilities withdrawing 50 million gallons of water per day (“MGD”), at least 25% of which is used for cooling.⁵ In 2006, EPA finalized Phase III, which regulated all remaining facilities under Section 316(b), namely new offshore and coastal oil and gas extraction facilities.⁶

Various coalitions of states and environmental and industry groups challenged the 2004 Phase II rule in the Second Circuit. On July 9, 2007, in response to the Second Circuit’s decision in *Riverkeeper v. EPA*,⁷ EPA suspended its Phase II rule pending future rulemaking.⁸ In 2009, the Supreme Court reversed the Second Circuit in part, holding that cost-benefit analysis is a permissible consideration under Section 316(b).⁹ The Supreme Court otherwise left untouched the following conclusions by the Second Circuit: Section 316(b) covers existing facilities;¹⁰ EPA may

¹ 33 U.S.C. § 1326(b) (2011).

² Cronin v. Browner, 898 F. Supp. 1052 (S.D.N.Y. 1995).

³ See Cronin v. Browner, 90 F. Supp. 2d 364, 374-5 (S.D.N.Y. 2000).

⁴ National Pollutant Discharge Elimination System: Regulations Addressing Cooling Water Intake Structures for New Facilities, 66 Fed. Reg. 65,255 (Dec. 18, 2001) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124, and 125).

⁵ National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. 41,575 (July 9, 2004) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124, and 125) [hereinafter 2004 Phase II Rule], *suspended by* National Pollutant Discharge Elimination System—Suspension of Regulations Establishing Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 72 Fed. Reg. 37,107 (July 9, 2007) (to be codified at 40 C.F.R. pts. 122 and 125).

⁶ National Pollutant Discharge Elimination System—Final Regulations To Establish Requirements for Cooling Water Intake Structures at Phase III Facilities, 71 Fed. Reg. 35,006 (June 16, 2006) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124, and 125).

⁷ *Riverkeeper, Inc. v. EPA (Riverkeeper II)*, 475 F.3d 83 (2d Cir. 2007).

⁸ National Pollutant Discharge Elimination System—Suspension of Regulations Establishing Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 72 Fed. Reg. 37,107 (July 9, 2007) (to be codified at 40 C.F.R. pts. 122 and 125).

⁹ *Entergy Corp. v. Riverkeeper, Inc.*, 129 S. Ct. 1498 (U.S. 2009).

¹⁰ *Riverkeeper II*, 475 F.3d at 121-23.

permissibly rely on impingement and entrainment mortality as proxies for “adverse environmental impact”;¹¹ and EPA acted within its permissible discretion in assuming zero entrainment survival.¹²

However, the Second Circuit remanded the rule to EPA on several other grounds, which the Supreme Court did not reach on appeal. In particular, the Second Circuit held that restoration measures are an impermissible basis for compliance with Section 316(b).¹³ EPA plans to eliminate the restoration compliance option from the Phase I regulation via the proposed rulemaking.

On November 22, 2010, EPA amended its existing consent decree with a coalition of environmental groups (including Riverkeeper) that had sued to compel regulation under Section 316(b). At that time EPA agreed to issue a notice of proposed rulemaking by March 14, 2011, and a final rule by July 27, 2012.¹⁴ These comments are submitted in response to that notice, which was published in the Federal Register on April 20, 2011.¹⁵

II. Justification of the Proposed Rule on Cost-Benefit Grounds

Section 316(b) requires EPA to regulate cooling water intake structures. Consistent with Executive Orders 12,866 and 13,563, EPA guidelines, and persuasive policy arguments, EPA has issued this rulemaking on the basis of cost-benefit analysis. While this is the correct analytical framework, there are several opportunities for EPA to improve its use of cost-benefit analysis throughout the proposed rule. EPA should attempt to quantify more of the costs and benefits of the proposed rule, particularly ancillary benefits and countervailing risks. EPA should also conduct an explicit break-even analysis in light of the fact that its monetized costs exceed its monetized benefits.

Cost-Benefit Analysis Is the Appropriate Analytical Framework for this Rulemaking

Cost-benefit analysis seeks to maximize the net benefits that society will enjoy from regulations and policy choices.¹⁶ Net benefits are calculated by subtracting the costs of the policy from the resulting social benefits. The benefits of environmental policies may include prices lowered, lives saved, habitat restored, or diseases avoided. The costs of environmental policies may include direct compliance costs, administrative enforcement costs, and price increases. The goal of cost-benefit analysis is to identify the policy alternative for which the cumulative benefits exceed the cumulative costs by the largest margin. These are the projects that generate the largest net benefits for society.

Estimating costs and benefits forces decisionmakers to carefully consider a policy proposal and anticipate its market and non-market impacts. By monetizing these impacts, cost-benefit analysis simplifies comparisons between projects and generates results that are salient to policymakers, interested groups, and the public at large. While cost-benefit analysis has been controversial in some circles,¹⁷ it remains a useful tool for allocating resources across policy options.

¹¹ *Id.* at 123-25.

¹² *Id.* at 126-27.

¹³ *Id.* at 108-10.

¹⁴ See Settlement Agreement among the U.S. Environmental Protection Agency, Plaintiffs in *Cronin, et al. v. Reilly*, 93 Civ. 314 (LTS) (SDNY), and Plaintiffs in *Riverkeeper, et al. v. EPA*, 06 Civ. 12987 (PKC) (SDNY), available at <http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/phase2/upload/316bsettlement.pdf>.

¹⁵ National Pollutant Discharge Elimination System—Cooling Water Intake Structures at Existing Facilities and Phase I Facilities, 76 Fed. Reg. 22,174 (proposed Apr. 20, 2011) (to be codified at 40 C.F.R. pts. 122 and 125) [hereinafter Proposed Rule].

¹⁶ See generally RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH 12 (2008) (“This book makes the case for cost-benefit analysis not only because such analysis is inevitable, but also because it is desirable . . . [Cost-benefit analysis] allows us to spend money to the point at which the last dollar spent buys one dollar of risk reduction. If we spend beyond that point, we will pay more than we receive. But if we spend any less, we forego risk reductions that are socially desirable.”).

¹⁷ See, e.g., FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF

Executive Orders 12,866 and 13,563, along with guidelines from both EPA and the Office of Management and Budget (“OMB”), require the use of cost-benefit analysis unless otherwise prohibited by statute.¹⁸ Furthermore, the Supreme Court has specifically affirmed EPA’s authority to conduct cost-benefit analysis under Section 316(b).¹⁹

Both Executive Orders make clear that cost-benefit analysis should be used to identify and select policies that maximize net benefits.²⁰ Executive Order 13,563 underscores the importance of valuing benefits that are not easily quantified or monetized, affirming that, “[w]here appropriate and permitted by law, each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify.”²¹ EPA should take into account all major costs and benefits—direct and indirect, quantifiable and qualitative.²²

Further, EPA published its own cost-benefit analysis guidelines in December 2010, which clarify the directives contained in the two Executive Orders.²³ EPA’s guidelines provide detailed instructions on best practices for cost-benefit analysis in light of the obstacles frequently faced by agencies.²⁴ Expanding on the Executive Orders, EPA gives extensive direction on how to value benefits that are often difficult, and sometimes impossible, to quantify or monetize to ensure that those benefits are not ignored in the analysis.²⁵ OMB has published similar guidance.²⁶

The National Cost-Benefit Analysis Improves on the 2004 Rule, but Should Quantify More

EPA has improved its assessment of non-use benefits from the 2004 iteration of the Phase II rule. The 2004 Phase II rule monetized only direct use market and non-market values—commercial

NOTHING 277 (2004).

¹⁸ Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993); Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011); ENVTL. PROT. AGENCY, GUIDELINES FOR PREPARING ECONOMIC ANALYSES (2010); OFFICE OF MGMT. & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, CIRCULAR A-4 (2003) *available at* http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf.

¹⁹ *Entergy Corp. v. Riverkeeper, Inc.*, 129 S. Ct. 1498 (2009).

²⁰ *See* Exec. Order No. 13,563 § 1(b) (“[T]o the extent permitted by law, each agency must, among other things: (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify).”); *see also* Exec. Order No. 12,866 § 1 (“In choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.”).

²¹ Exec. Order No. 13,563 § 1(c).

²² *See, e.g.*, Exec. Order No. 13,563 § 1 (Costs and benefits “include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.”); Exec. Order No. 12,866 § 1 (“Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.”).

²³ ENVTL. PROT. AGENCY, *supra* note 18, at 1-2 (2010) (“[A] thorough and careful economic analysis is an important component in informing sound environmental policies. Preparing high quality economic analysis can greatly enhance the effectiveness of environmental policy decisions by providing policy makers with the ability to systematically assess the consequences of various actions. An economic analysis can describe the implications of policy alternatives not just for economic efficiency, but also for the magnitude and distribution of an array of impacts. Economic analysis also serves as a mechanism for organizing information carefully. Thus, even when data are insufficient to support particular types of economic analysis, the conceptual scoping exercise may provide useful insights.”).

²⁴ *Id.*

²⁵ *Id.* at 11-3 (“It is important, however, not to exclude an important benefit or cost category from benefit-cost analysis even if it cannot be placed in dollar terms. Instead, such benefits and costs should be expressed quantitatively if possible (e.g. avoided adverse health impacts). If important benefit or cost categories cannot be expressed quantitatively, they should be discussed qualitatively (e.g. a regulation’s effect on technological innovation).”).

²⁶ OFFICE OF MGMT. & BUDGET, *supra* note 18.

fishing and recreational fishing, respectively.²⁷ Non-use values and indirect-use values were not monetized at all. EPA addressed this with a break-even analysis, which found significant regional variation between the willingness-to-pay needed to justify the 2004 rule on cost-benefit grounds.²⁸

The cost-benefit analysis for the proposed rule is already an improvement over the one performed in support of the 2004 Phase II rule, and EPA plans to further utilize a stated preference study to monetize non-use values in support of this regulation.²⁹ The quantification of non-use benefits, whenever possible, allows for a more precise cost-benefit analysis. Although EPA has not yet had sufficient time to complete the stated preference study, its inclusion in the rulemaking process is a laudable effort to execute a rigorous and thorough cost-benefit analysis. The proposed rule also takes a more thorough look at ancillary benefits and countervailing risks than the 2004 Phase II rule did.³⁰ In particular, the proposed rule includes a narrative discussion of potential reductions in thermal discharge, which was lacking from the previous rule.³¹

However, there are additional effects that should be addressed in the context of a cost-benefit analysis. These include, at a minimum, the possibility of fuel switching,³² likely effects on water consumption,³³ and any additional air pollution resulting from plants compensating for the “energy penalty.”³⁴ The proposed rule requires the states to evaluate many of these factors on a local basis in Section 125.98(e).³⁵ While EPA suggests that some of these effects cannot be effectively quantified at the national level because of local variation between plants,³⁶ site-specific variation is an insufficient reason to avoid quantifying impacts at the national level. This variation is a form of uncertainty, the proper treatment of which is discussed at length in existing guidance from EPA and OMB.³⁷ Using facility-level data already collected in preparation for this rulemaking, EPA can estimate national or regional averages for many of these variables, which can be used in a statistical projection of likely costs and benefits.

Conduct an Explicit Break-Even Analysis When Monetized Costs Exceed Monetized Benefits

When the monetization of all costs and benefits is not possible, agencies should conduct break-even analyses assessing potential regulations.³⁸ In such cases, OMB directs regulatory agencies to:

[E]xercise professional judgment in determining how important the non-quantified benefits or costs may be in the context of the overall analysis. If the non-quantified benefits and costs are likely to be important, you should carry out a “threshold” analysis to evaluate their significance. Threshold or “break-even” analysis answers the question, “How small could

²⁷ 2004 Phase II Rule, *supra* note 5, at 41,657-58.

²⁸ *Id.* at 41663-64.

²⁹ Proposed Rule, *supra* note 15, at 22,243.

³⁰ *See generally* OFFICE OF MGMT. & BUDGET, *supra* note 18, at 26.

³¹ Proposed Rule, *supra* note 15, at 22,246.

³² *See, e.g.*, ENERGY INFO. ADMIN., MANUFACTURING FUEL-SWITCHING CAPABILITY (2006), http://www.eia.doe.gov/emeu/mecs/special_topics/energy_use_manufacturing/energyuse98_02/fuel_switch.html (describing fuel switching at manufacturing facilities in response to changing economic conditions).

³³ *See, e.g.*, SCOTTMADDEN MGMT. CONSULTANTS, ELECTRIC UTILITIES: NAVIGATING THE WATER CRISIS 5 (2008), *available at* www.scottmadden.com/?a=strm&aid=13 (describing the relationship between power plant cooling water intake structures and recent droughts).

³⁴ Proposed Rule, *supra* note 15, at 22,209.

³⁵ *Id.* at 22,288 (to be codified at 40 C.F.R. pts. 125.98(e)(1)-(9)).

³⁶ *Id.* at 22,209 (“EPA is not able to quantify the frequency with which facilities may experience these local impacts, and therefore EPA believes a site-specific assessment must be conducted to fully address such local impacts.”).

³⁷ OFFICE OF MGMT. & BUDGET, *supra* note 18, at 38-42; ENVTL. PROT. AGENCY, *supra* note 18, at 11-12.

³⁸ OFFICE OF MGMT. & BUDGET, *supra* note 18, at 2.

the value of the non-quantified benefits be (or how large would the value of the non-quantified costs need to be) before the rule would yield zero net benefits?”³⁹

EPA guidelines also identify break-even analyses as a proper alternative when “either risk data or valuation data are lacking.”⁴⁰ It is clear from OMB’s A-4 Circular and EPA’s Guidelines for Preparing Economic Analyses that break-even analysis should be used to ensure that agencies maximize social welfare when data is limited. EPA conducted such an analysis when it promulgated the 2004 Phase II rule.⁴¹ EPA should endeavor to promulgate a rule that, in its expert judgment, maximizes the aggregate of non-monetized and monetized net benefits.

It appears that EPA is already, in essence, conducting a break-even analysis—the proposed rule’s monetized costs exceed the monetized benefits, and the agency has identified significant non-monetized benefits that make the rule cost-benefit justified.⁴² To further strengthen the rule’s administrative record, EPA should explicitly state that it is conducting a “threshold” or “break-even” analysis and explain what that entails.

III. The Rule Should Encourage Timely Upgrades and Avoid Excessive Grandfathering

The proposed rule contains some elements of undesirable grandfathering.⁴³ Grandfathering is a form of transition assistance for older facilities. It may be desirable in situations where the costs of imposing tough new regulatory standards on existing sources exceed the benefits of those standards. For example, if a firm intends to retire a facility in the near future, it may be preferable to allow it to operate for the rest of its intended design-life rather than require the installation of expensive retrofits. While some of the grandfathering under the proposed rule is cost-benefit justified, certain aspects of the rule would result in excessive grandfathering and generate a net loss to society. EPA can eliminate the distortive effects of the proposed rule by requiring the states to set their site-specific standards within a definite time frame, and by setting a fixed national deadline for all existing sources to comply with the new source standards under Phase I.

Ensure that Site-Specific Standards Are Implemented Within a Specific Time Frame

The proposed rule does not set a deadline for state development or facility compliance with the entrainment standard. The proposed rule merely directs state agencies to set site-specific entrainment standards “as soon as possible.”⁴⁴ In contrast, EPA has set an 8-year deadline for compliance with the impingement standards.⁴⁵ Site-specific regulatory standards have the potential to delay regulatory compliance because of the additional administrative burden involved. Without a fixed time frame, some firms may attempt to delay compliance for as long as they can.⁴⁶

³⁹ *Id.*

⁴⁰ ENVTL. PROT. AGENCY, *supra* note 18, at 7-58.

⁴¹ See 2004 Phase II Rule, *supra* note 5, at 41,662-64.

⁴² See Proposed Rule, *supra* note 15, at 22,267.

⁴³ ENVTL. PROT. AGENCY, *supra* note 18, at 4-6 (“It is also common to ‘grandfather’ or exempt older polluters from new prescriptive regulations. This means that they are effectively subject to a less stringent standard than newer polluters. Grandfathering creates a bias against constructing new facilities and investing in new pollution control technology or production processes. As a result, grandfathered older facilities with higher emission rates tend to remain active longer than they would if the emissions standard applied to all polluters.”).

⁴⁴ Proposed Rule, *supra* note 15, at 22,282.

⁴⁵ *Id.*

⁴⁶ Numerous environmental groups have expressed concerns that the site-specific entrainment determinations will delay the regulatory process by bogging down the state agencies that are charged with conducting them. See, e.g., Press Release, Riverkeeper, Dead Fish, Fouled Water, EPA Misses Opportunity to Fix Power Plant Damage (Mar. 29, 2011), available at <http://www.riverkeeper.org/news-events/news/preserve-river-ecology/dead-fish-fouled-water-epa-misses-opportunity-to-fix-power-plant-damage/>.

A federally mandated deadline would mitigate this risk. Furthermore, the proposed rule has the advantage of delegating and dividing the labor among state agencies, rather than burdening any single agency with the task of making case-by-case determinations. This delegation should be viewed as an opportunity to minimize delay throughout the regulatory process.

Set a Deadline by Which All Existing Facilities Must Comply with the New Source Standards

Under the proposed rule, existing sources are only required to install closed-cycle cooling systems to accommodate additional “new units.”⁴⁷ The proposed rule defines “new unit” at Section 125.92 as “newly built units added to increase capacity at the facility and does not include any rebuilt, repowered or replacement unit, including any units where the generation capacity of the new unit is equal to or greater than the unit it replaces.”⁴⁸ Under a plausible reading of the proposed rule, a plant could, over time, replace all its existing generators with newer, higher capacity generators without ever triggering the closed-cycle cooling requirements under proposed Section 125.94(a)(3).⁴⁹ Furthermore, plants could continue to do so indefinitely. This is a potentially significant loophole in the regulation of existing facilities.

Indeed, proposed Section 125.92 actually creates an incentive for older, more destructive facilities to remain active with outdated technology long past their originally intended service lives and socially optimal retirement dates. The problem arises from creating a stringent standard for new sources and a more lenient one for existing sources. In some cases it may be cheaper for firms to prolong the operational lives of their existing facilities rather than build new facilities requiring costly control technologies.⁵⁰ As plants grow older, operation and maintenance costs tend to increase. Meanwhile, as technology improves, new and more efficient plants can be constructed more cheaply. Absent any regulation, rational firms will naturally retire an older plant when the costs of its operation exceed the costs of building a new plant. However, a tough new source standard increases the costs of constructing a new plant and thereby delays the point at which a rational firm will decide to replace older plants. The result may be that environmentally destructive plants remain open longer than they otherwise would have absent the regulation. This is often referred to as the “old plant” effect.⁵¹

This is not a theoretical phenomenon. Firms acted this way in response to the New Source Review provisions of the Clean Air Act, which require existing facilities to install expensive pollution control technologies only if they modify their plants.⁵² One result, predictably, has been years of

⁴⁷ Proposed Rule, *supra* note 15, at 22,282 (to be codified at 40 C.F.R. pt. 125.94(a)(3)).

⁴⁸ *Id.* (to be codified at 40 C.F.R. pt. 125.92).

⁴⁹ *Id.* at 22,282 (to be codified at 40 C.F.R. pt. 125.94(a)(3)). Some plants, responding to a similar regulatory structure under the Clean Air Act, pursued exactly this strategy. In one noteworthy case, the Seventh Circuit Court of Appeals rejected a utility’s argument that major renovations at its plant, including “repair and replacement of the turbine-generators, boilers, mechanical and electrical auxiliaries and the common plant support facilities,” failed to trigger the Act’s new source standards. *Wis. Elec. Power Co. v. Reilly*, 893 F.2d 901, 906 (7th Cir. 1990). In its decision, the court expressed its concern that permitting such extensive plant renovations under a grandfathered standard “would open vistas of indefinite immunity from [the new source performance standards].” *Id.* at 909.

⁵⁰ See Jonathan Remy Nash & Richard L. Revesz, *Grandfathering and Environmental Regulation: The Law and Economics of New Source Review*, 101 NW. U. L. REV. 1677, 1708-12 (describing how “differential environmental regulations delay plant retirement.”); see also Richard L. Revesz & Allison L. Westfahl Kong, *Regulatory Change and Optimal Transition Relief* 48-49 (N.Y. Univ. Sch. of Law Pub. Law & Legal Theory Research Paper Series, Working Paper No. 10-62, 2010), available at <http://ssrn.com/abstract=1674469> (“The existence of pollution regulations applying to new sources, however, may give the plant an incentive to bear these inefficiencies for longer than would otherwise be the case because they are less costly than complying with the standards applicable to new sources.”).

⁵¹ See RICHARD L. REVESZ, *ENVIRONMENTAL LAW AND POLICY* 405-22 (Robert C. Clark et al. eds., 2008) (discussing the “old plant” effect in more depth).

⁵² 42 U.S.C. § 7411(a)(2) (2006) (requiring performance standards only for stationary sources, “the construction or modification of which is commenced after the publication of regulations.”).

regulation and litigation over the exact meaning of “modification.”⁵³ Another result is that some power facilities have remained in service since the 1950s with little or no improvement to their environmental performance.⁵⁴ In this respect, the Clean Water Act has been much more successful than the Clean Air Act because, in addition to setting new source standards, it also established tough standards for existing sources, which gradually increased over time.⁵⁵ The result has been a steady phase-out of the oldest, most inefficient plants. But by shielding existing sources with such a narrow definition of “new unit,” the proposed rule imports one of the Clean Air Act’s shortcomings.

The best solution to this problem is to set a deadline by which all existing facilities must come into compliance with the tougher new source standards. In setting such a deadline, EPA should not seek to compel all existing facilities to immediately install closed-cycle cooling facilities; because of the variability between facilities, this would result in overregulation in instances where the marginal costs of immediate installation exceed the marginal benefits of additional protection.⁵⁶ Rather, the deadline should be set to eliminate the perverse incentives created by the bifurcated new source and existing source standards.

IV. National versus Site-Specific Standards

The proposed rule creates separate standards for entrainment and impingement mortality. EPA justifies the use of a site-specific standard for entrainment on the grounds that there is high variability between facilities, particularly regarding local energy reliability, air emissions, land availability, and remaining useful plant life.⁵⁷ EPA justifies the use of a national standard for impingement because a cost-benefit justified technology is uniformly available.⁵⁸ While these are valid considerations, they fall short of the necessary analysis of whether site-specific or national controls best maximize net benefits.

National standards are usually justified for a rule that applies to a large number of similarly situated entities. Though a uniform standard risks creating inefficiencies if there is too much site-to-site variability, if most regulated parties face similar costs and benefits, then a national standard can largely avoid that potential for costly over- and under-regulation. When the costs of such errors is less than the administrative cost of site-specific analyses and regulation, a single, national standard is most likely to maximize net benefits.

⁵³ For example, in 1999 and 2000, the Department of Justice brought suit against nine utility companies that made major plant modifications without complying with the new source standards. Press Release, U.S. Dept. of Justice, U.S. Sues Electric Utilities in Unprecedented Action to Enforce the Clean Air Act (Nov. 3, 1999), *available at* <http://www.usdoj.gov/opa/pr/1999/November/524enr.htm>. See also Nash & Revesz, *supra* note 50, at 1681 (“Commentators regularly note that Congress expected most existing sources to gradually phase out over the course of their ordinary lives or to upgrade and trigger the new source performance standards, leaving most major stationary sources subject to federal control.”).

⁵⁴ See, e.g., Dina Fine Maron, *TVA Agrees to Shut Down 18 Coal-Fired Boilers and Curb Emissions*, N.Y. TIMES, Apr. 15, 2011, <http://www.nytimes.com/cwire/2011/04/15/15climatewire-tva-agrees-to-shut-down-18-coal-fired-boiler-72955.html> (describing a settlement between EPA and the Tennessee Valley Authority in which the utility has agreed to close 18 generating units, “[a]lmost all of [which] date back to the 1950s and had no modern pollution controls installed.”).

⁵⁵ See REVESZ, *supra* note 51, at 507 (“[R]ather than “grandfathering” existing sources like the CAA, the CWA adopted a phased approach to the setting of federal standards for existing sources, such that EPA was directed to set increasingly stringent effluent limitations for point sources over time.”).

⁵⁶ See Revesz & Kong, *supra* note 50, at 57 (“Grandfathering existing actors will not always be optimal, but it is appropriate when their compliance with the new rule would cost more ‘than the reduction in the expected harm’ that would result from complying with the new rule.”) (quoting Steven Shavell, *On Optimal Legal Change, Past Behavior, and Grandfathering*, 37 J. LEGAL STUD. 37, 44-45 (2008)).

⁵⁷ Proposed Rule, *supra* note 15, at 22,208-10.

⁵⁸ *Id.* at 22,197 (“EPA’s record shows modified traveling screens are available for all facilities, whereas reduced intake velocity may not be available at all locations.”).

When these conditions do not hold, either because sites are highly variable or because there are relatively few regulated entities, the most effective and efficient method to address case-by-case differences within the regulated community is the use of a market-based regulatory solution such as a cap-and-trade system. Market-based regulatory mechanisms allow firms the flexibility to account for variability without a large commitment of administrative resources from the government. Before settling on a program that requires site-specific standards, EPA should consider the feasibility of such market-based regulatory mechanisms.

If market-based solutions are unavailable, a site-specific standard is justified when the benefits of individualized standards exceed the administrative costs of setting them. The benefits of a case-by-case standard result from avoiding the potential over- and under-regulation of a hypothetical national standard; given variable compliance costs and benefits, a national standard may be excessively stringent at some sites and excessively lenient at others. Where variability between sites is high, this error rate will also be high, and the benefits of a flexible program increase. The administrative costs of setting site-specific standards are borne by the permitting authority and the facilities themselves, which must invest in additional monitoring and reporting. These administrative costs will be higher when there are many facilities to regulate.

On the other hand, site-specific standards have the disadvantage of reducing regulatory certainty, which reduces industry's ability to anticipate and plan for impending regulatory requirements. There may also be practical advantages and disadvantages to making final regulatory requirements site-specific. Local agencies may have increased familiarity with local ecosystems, for example, but they may also be less familiar with the best practices of cost-benefit analysis.⁵⁹ Ultimately, EPA should weigh all these factors to determine whether a national standard or site-specific standards is most appropriate for any given regulation.

Justify a Site-Specific Entrainment Standard on Cost-Benefit Grounds

If EPA wants to retain its site-specific entrainment standard in the final Phase II rule, the agency should clarify the cost-benefit analysis used to support its conclusion. As discussed above, a program of site-specific review is only desirable if the benefits of the reviews exceed the administrative costs of conducting them. EPA should explain that, of the available regulatory tools, site-specific review would maximize net social benefits by accounting for variability and keeping compliance costs relatively low. EPA has already determined that there is a high rate of variability between plants: benefits vary with local ecological conditions;⁶⁰ compliance costs vary because some sites are not suited to particular retrofits;⁶¹ and much of the impingement and entrainment data is inaccurate, unreliable, or inadequately representative.⁶² The administrative costs of the

⁵⁹ See JASON A. SCHWARTZ, 52 EXPERIMENTS WITH REGULATORY REVIEW: THE POLITICAL AND ECONOMIC INPUTS INTO STATE RULEMAKING 81 (2010), available at <http://policyintegrity.org/publications/detail/52-experiments-with-regulatory-review/> (reviewing regulatory review practices in all 50 states, as well as in the District of Columbia and Puerto Rico, and concluding in part: "Sparse and inconsistent impact statements (especially on quantifying and describing benefits), combined with the failure in most states to emphasize the goal of maximizing net benefits, inevitably means that most state reviews operate more as gatekeepers than as calibrators: rules are rejected for being too burdensome or illegal or beyond statutory authority, but are far less often refined and improved to enhance social welfare.").

⁶⁰ Proposed Rule, *supra* note 15, at 22,248 ("The record demonstrates that biological organisms subject to impingement and entrainment from cooling water intake structures may vary considerably from site to site.").

⁶¹ For example, some facilities are subject to land use constraints that would prevent them from installing closed-cycle cooling systems. *Id.* at 22,209 ("EPA found that some facilities with large acreage still could not feasibly install cooling towers due to local zoning or other local concerns.").

⁶² Because impingement and entrainment data are based on extrapolation from a relatively small number of facilities, there may be considerable variation between the programmatic assumptions and the actual conditions at any particular plant. *See id.* at 22,207 (certain coastal waterbodies, for example, contain "some fish species . . . [that] have biological spawning attributes that differ from those at other locations.").

reviews are a function of their complexity, the skill of those conducting them, and the number of facilities reviewed.

Justify a National Impingement Standard on Cost-Benefit Grounds

The justifications for a nationally uniform standard are discussed above generally. If EPA ultimately opts for a national impingement standard without a site-specific option, it should justify this decision on cost-benefit grounds. A proper cost-benefit analysis that leads to selecting a national standard must demonstrate that it maximizes net benefits over alternative approaches.

With regard to entrainment, EPA has concluded that a site-specific review is appropriate. There may be key differences between impingement and entrainment that justify a site-specific option for one and not the other. If EPA makes that determination, however, it should clearly explain the engineering and economic distinctions between the two processes that justify divergent regulatory standards. In the event that EPA offers a site-specific impingement standard, all of the recommendations discussed in this comment regarding best practices for the site-specific entrainment analysis should be considered instructive for impingement as well.

Of course, a prerequisite for the success of a site-specific compliance option is that the forums for the determination provide fair reviews and utilize high quality, evidence-based decisionmaking. EPA should provide sufficient guidance to state agencies in this regard to ensure that they are using EPA's preferred methodologies and are pursuing the same goal of maximizing net benefits. Some factors EPA should consider in developing such guidance are discussed in the next section.

V. EPA Can Improve the Quality of Site-Specific Reviews

The structured site-specific review outlined in the proposed rule has a strong theoretical basis. However, EPA should take further steps to clarify the standard of review for states to apply and to ensure that the system operates as intended. The proposed rule delegates much of EPA's authority to state agencies to set and enforce the site-specific standards.⁶³ EPA can ensure that these standards are consistently set at the optimal level by

- unambiguously requiring the site-specific reviews to maximize net benefits;
- incorporating a preference for independently collected data;
- taking steps to ensure high-quality peer review of data collection and reporting, including creating a database of reliable peer reviewers and making peer review comments transparent and publicly available;
- stressing the ways in which structured site-specific review differs from best professional judgment;
- setting the threshold for additional reporting at a cost-benefit justified threshold;
- and ensuring review of site-specific determinations *ex post* through retrospective reviews and, potentially, an administrative appeals process.

⁶³ This delegation to state-level authorities has upset some commentators, who fear that for public choice reasons state agencies may be less effective than federal regulators at setting sufficiently protective standards. *See, e.g.,* Riverkeeper *supra* note 46 ("EPA has chosen the path of least resistance by caving into industry pressure and punting this issue to state agencies that too often lack the resources and the will to stand up to industry on this issue."). The relative susceptibility of federal and state regulators to public choice pressures is a complex and hotly debated topic. *See* Richard L. Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 HARV. L. REV. 553 (2001) (arguing against the proposition that public choice pressures push states to systematically under-regulate environmental performance). *But see* Charles Duhigg, *Clean Water Laws Are Neglected, at a Cost in Suffering*, N.Y. TIMES, Sept. 13, 2009, at A1 (describing lax state enforcement of the Clean Water Act). This is an unresolved empirical question, and it is one on which Policy Integrity does not take a position.

Require Structured Site-Specific Reviews to Maximize Net Social Benefits

EPA most clearly articulates the standard to be applied by state agencies in making their site-specific determinations of best technology available (“BTA”) in proposed Section 125.98(e).⁶⁴ The crucial part of this section establishes that the “entrainment mortality controls must reflect the [state agency’s] determination of the maximum reduction in entrainment mortality warranted after consideration of factors relevant for determining the best technology available at each facility.”⁶⁵ The section goes on to list nine factors that must be considered “at a minimum.” These factors include “numbers and types of organisms entrained,” “remaining useful plant life,” and “quantified and qualitative social benefits and social costs of available entrainment technologies, including ecological benefits and benefits to any threatened or endangered species.”⁶⁶

This section lists important factors to consider during a site-specific review of best technology available—including certain important ancillary benefits and countervailing risks, such as “thermal discharge impacts,”⁶⁷ which had been largely overlooked during the 2004 Phase II rulemaking. However, it does not expressly require states to set BTA at the level that maximizes net social benefits. Instead, it merely tells state agencies what factors to consider without explaining how those factors should be weighed against one and another. Thus, absent evidence that a state agency failed to “consider” one of the variables expressly listed in Section 125.98(e), a state agency would be free to set any standard, regardless of the outcome of a cost-benefit analysis.⁶⁸

The policy justification for performing a site-specific review is to maximize net social benefits by minimizing the error costs inherent in applying a nationally uniform standard to variable facilities. EPA should thus require, absent extraordinary circumstances, that state agencies select the standard for BTA that will maximize net social benefits on a case-by-case basis. While Section 125.98(e), as proposed, requires that state agencies review and consider a cost-benefit analysis, it does not expressly require that states adopt a net benefit maximizing standard.⁶⁹ Moreover, the description of cost-benefit analysis in Section 125.98(e) contains some troubling language that could be interpreted by state agencies as unwarrantedly favoring deregulation.⁷⁰ EPA should remedy this problem by adding additional express language that, barring a compelling reason to the contrary, requires state agencies to adopt any additional control technology for which the additional social benefits exceed the additional social costs.

The national impingement standard is set at the level maximizing net social benefits using standard cost-benefit analysis principles. Therefore, by permitting state agencies to set site-specific standards on the basis of something other than the maximization of net social benefits, the proposed rule treats entrainment mortality differently than impingement mortality. EPA should offer a well-reasoned explanation for why it has chosen to set a net benefit-maximizing standard for impingement, but not for entrainment.

⁶⁴ Proposed Rule, *supra* note 15, at 22,288 (to be codified at 40 C.F.R. pt. 125.98(e)).

⁶⁵ *Id.*

⁶⁶ *Id.* (to be codified at 40 C.F.R. pt. 125.98(e)(1)-(9)).

⁶⁷ *Id.* (to be codified at 40 C.F.R. pt. 125.98(e)(4)).

⁶⁸ *Id.* (to be codified at 40 C.F.R. pt. 125.98(e)).

⁶⁹ *Id.* (to be codified at 40 C.F.R. pt. 125.98(e)(3)) (“At a minimum, the proposed determination . . . must be based on consideration of the following factors Quantified and qualitative social benefits and social costs of available entrainment technologies.”).

⁷⁰ For example, the proposed rule explains, “The [state agency] may reject an otherwise available technology as [best technology available] standards for entrainment mortality if the social costs of compliance are not justified by the social benefits.” *Id.* (to be codified at 40 C.F.R. pt. 125.98(e)).

There are other virtues to requiring that a site-specific standard maximize net social benefits. Most importantly, setting the BTA standard according to a cost-benefit analysis will help to ensure that social welfare is consistently maximized, an outcome that accords with the principles set forth in Executive Order 13,563.⁷¹ It will reduce the uncertainty inherent in case-by-case determinations for both regulated firms and regulatory beneficiaries. Since the determinations of BTA would be established on the basis of cost-benefit analyses—which themselves should be performed according to clear, publicly available guidelines—interested parties could more often predict the outcome of state regulation.⁷² Setting these standards according to a consistent and widely applied methodology will also improve their credibility among the regulated community and the public at large.

State-level cost-benefit analyses should be no less rigorous than similar analyses at the federal level. EPA should ensure that states are applying a uniform methodology to arrive at the optimal site-specific determinations, allowing for reasonable local variation costs and benefits.⁷³ State regulators have widely varying familiarity with cost-benefit analysis.⁷⁴ Due to this variability, EPA should provide reasonable assistance to state agencies applying this methodology. EPA should require that the state agencies adhere to the principles embodied in Executive Order 13,563 and the best practices established in OMB Circular A-4⁷⁵ and the 2010 EPA Guidelines for Preparing Economic Analyses.⁷⁶ Each of the factors listed in proposed Sections 125.98(e)(1)-(9) are reducible to variables in a cost-benefit analysis consistent with these guidelines—if not as quantified values, than as qualitative narrative values. EPA can support the performance of state-level cost-benefit analyses through subsequent guidance including recommended valuation techniques (and/or recommended values) for entrainment mortality, thermal discharge, impacts on water consumption, and any other relevant factors. Two possible sources of these values are EPA’s upcoming stated preference study and the regional benefits analysis, both conducted in support of this rule.

Avoid Relying on Self-Reported Industry Data Whenever Possible

Relying on industry-reported data can be problematic because industry has incentives to provide information that is skewed to its advantage.⁷⁷ In preparing this rule, EPA has relied on industry-reported data to estimate impingement and entrainment, as well as industry costs more generally. The proposed rule solicits additional information from regulated entities, including the

⁷¹ Exec. Order No. 13,563 § 1(b)(3) (“[E]ach agency must, among other things: . . . select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits.”).

⁷² Executive Order 13,563 also sets predictability as a goal: “Our regulatory system must . . . promote predictability and reduce uncertainty.” *Id.* § 1(a).

⁷³ For example, the proposed rule recognizes regional differences in the non-use benefits derived from averting fish mortality. See Proposed Rule, *supra* note 15, at 22,242-43 (“EPA applied estimated values from a study occurring in Rhode Island; these estimates are likely to be representative of nonuse values held by individuals residing in the Northeast US, and less accurate in other regions.”).

⁷⁴ SCHWARZ, *supra* note 59.

⁷⁵ OMB, *supra* note 18.

⁷⁶ EPA, *supra* note 18.

⁷⁷ See Thomas O. McGarity & Ruth Ruttenberg, *Symposium: What We Know and Do Not Know About the Impact of Civil Justice on the American Economy and Policy: Counting the Cost of Health, Safety and Environmental Regulation*, 80 TEX. L. REV. 1997, 2055 (2002) (“One obvious implication . . . for policymakers who rely on industry- and agency-prepared cost assessments is that they must take such assessments with a considerable grain of salt. . . . [P]olicymakers should understand that such cost assessments should not determine the outcome of close decisions.”); see also ENVTL. PROT. AGENCY, *supra* note 17, at 11-13 (2010) (“In any economic analysis, there should be a clear presentation of how data are used and a concise explanation of why the data are suitable for the selected purpose. The data’s accuracy, precision, representativeness, completeness, and comparability should be discussed when applicable. In addition, when data are available from more than one source, a rationale for choosing the source of the data should be provided.”).

“Entrainment Characterization Studies” and “Benefits Valuation Studies,” which will be used by state agencies to formulate their site-specific standards.⁷⁸ EPA should permit the use of independently provided data for costs and benefits to increase both the transparency and the legitimacy of the regulatory process.⁷⁹ Furthermore, EPA should direct states to rely on independent data unless there is some reason to believe that the industry-reported data will be more reliable.

Strengthen the Peer Review Process Under Proposed Sections 122.21(r)(9)-(12)

The proposed rule requires that facilities withdrawing more than 125 MGD actual intake flow submit an array of reporting documents, including an extensive entrainment characterization study.⁸⁰ Each of these documents must be subjected to peer review.⁸¹ Under the proposed rule, the regulated firm “must select peer reviewers in consultation with the [state agency], including that the [state agency] may require additional peer reviewers.”⁸² In overseeing this peer review, the state agency “may consult with EPA and Federal, State and Tribal fish and wildlife management agencies with responsibility for fish and wildlife potentially affected by the cooling water intake structure(s) to determine which peer review comments must be addressed by the final study.”⁸³

In most cases, these studies will form the basis for the state agency’s determination of best technology available.⁸⁴ It is therefore essential to the success of the rule that these studies be reliable, accurate, and comprehensive. EPA should ensure that the peer review process is sufficiently robust to accomplish this goal, particularly given the inherent risks of relying on self-reported industry data.⁸⁵ It can do so by requiring consultation with other interested federal, state, and tribal agencies during the peer review process, instead of merely allowing it.

Furthermore, EPA should assist the selection of reliable peer reviewers by maintaining a database of qualified individuals and organizations that are willing to participate in the peer review process for state agencies. EPA should also ensure that the peer review process is transparent by making peer reviewer comments and industry responses publicly available.

Set the Threshold for Additional Reporting at the Point that Maximizes Net Benefits

Under the proposed rule, EPA would establish a tiered system of monitoring and data reporting. Firms that have installed closed-cycle cooling systems are required to submit less documentation

⁷⁸ Proposed Rule, *supra* note 15, at 22,275-79 (to be codified at 40 C.F.R. pt. 122.21(r)) (detailing the assorted monitoring and reporting requirements of regulated facilities).

⁷⁹ See Michael Greenstone, *Toward a Culture of Persistent Regulatory Experimentation and Evaluation*, in *NEW PERSPECTIVES ON REGULATION* 111, 119 (David Moss & John Cisternino eds., 2009) (explaining the benefits of “evaluations by independent research groups (for example, academics or private companies)”).

⁸⁰ Proposed Rule, *supra* note 15, at 22,275-79 (to be codified at 40 C.F.R. pt. 122.2(r)) (detailing the assorted monitoring and reporting requirements of regulated facilities).

⁸¹ See, e.g., Proposed Rule, *supra* note 15, at 22,278 (to be codified at 40 C.F.R. pt. 122.21(r)(9)(ii)) (“Obtain peer review of the entrainment mortality data collection plan. You must select peer reviewers in consultation with the Director, including that the Director may require additional peer reviewers. The Director may consult with EPA and Federal, State and Tribal fish and wildlife management agencies with responsibility for fish and wildlife potentially affected by the cooling water intake structure(s) to determine which peer review comments must be addressed by the final plan. You must provide an explanation for any significant reviewer comments not accepted. Peer reviewers must have appropriate qualifications in biology, engineering, hydrology, or other fields and their names and credentials must be included in the peer review report.”).

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.* at 22,261 (“EPA . . . does not generally expect that the [state agency] would develop additional information on which to base the evaluation of social benefits and costs, though the [state agency] may opt to do so.”).

⁸⁵ See *supra* note 77.

than existing facilities without closed-cycle cooling.⁸⁶ Existing firms with an actual intake flow over 125 MGD are subject to the highest reporting requirements, including entrainment characterization studies, technical feasibility and cost evaluation studies, benefits valuation studies, and non-water quality and other environmental impacts studies.⁸⁷ As EPA correctly argues, there are good reasons to bifurcate the monitoring and data reporting requirements in this way. A tiered structure incentivizes firms to voluntarily reduce the amount of water extracted in order to avoid administrative costs. It also reduces the compliance costs for smaller and less destructive facilities for which the costs of detailed analyses may not be worth the benefits of perfectly calibrated regulation.

However, EPA must further articulate its justification for setting the threshold at 125 MGD actual intake flow. The proposed rule explains that this threshold “would significantly reduce facility burden by more than two-thirds of the potentially in-scope facilities, and would focus permit authorities on the majority of cooling water withdrawals.”⁸⁸ This statement may be true, but it should not end the analysis. It may also be true that a lower threshold would cover a much larger volume of cooling water withdrawals without burdening a disproportionately high number of facilities. EPA should better explain how it has determined the optimal monitoring and reporting threshold. Raising the threshold reduces administrative costs, but it may also reduce the accuracy of the site-specific standard and thus reduce the social benefits produced. Conversely, lowering the threshold increases the administrative costs, but potentially increases the social benefits. EPA should set this threshold at the point where the burdens of additional reporting (marginal costs) are equal to the social benefits of the additional information (marginal benefits). EPA should be able to estimate these values from its existing facility surveys, sample entrainment characterization studies, and regional benefits analyses.

Clarify How Structured Site-Specific Review Differs from Best Professional Judgment

In the absence of a federal rule for existing facilities under Section 316(b), states have been applying a best professional judgment standard. “Best professional judgment” is a term of art and describes a particular methodology of review. EPA most notably defined “best professional judgment” in its 1996 NPDES Permit Writers’ Manual (“Manual”).⁸⁹ The Manual defines it as “the highest quality technical opinion developed by a permit writer after consideration of all reasonably available and pertinent data or information that forms the basis for the terms and conditions of a NPDES permit.”⁹⁰ According to the Manual, the authority to regulate using a state agency’s best professional judgment derives from Section 402(a)(1) of the Clean Water Act,⁹¹ and it is employed when specific national regulations are not otherwise available.⁹² According to EPA, the best professional judgment standard “allows the permit writer considerable flexibility in establishing permit terms and conditions. Inherent in this flexibility, however, is the burden on the permit writer to show that [this standard] is reasonable and based on sound engineering analysis.”⁹³ On

⁸⁶ See Proposed Rule, *supra* note 15, at 22,275-76 (to be codified at 40 C.F.R. pt. 122.21(r)(ii)(A)).

⁸⁷ See *id.* at 22,275-76; see also *id.* at 22,277-79 (to be codified at 40 C.F.R. pt. 122.21(r)(9)-(12)).

⁸⁸ Proposed Rule, *supra* note 15, at 22,195.

⁸⁹ ENVTL. PROT. AGENCY, U.S. EPA NPDES PERMIT WRITERS’ MANUAL 68-75 (2006), available at http://cfpub.epa.gov/npdes/writermanual.cfm?program_id=45 [hereinafter NPDES MANUAL].

⁹⁰ *Id.* at 68.

⁹¹ 33 U.S.C. § 1342(a)(1) (2006).

⁹² NPDES MANUAL, *supra* note 89, at 68. After revoking the original Phase II rule, EPA reinstated best professional judgment as the standard for regulating cooling water intake structures. *Supra* note 8, at 37,108.

⁹³ NPDES MANUAL, *supra* note 89, at 69.

the basis of these federal guidelines, each state defines “best professional judgment” for its own purposes.⁹⁴

Best professional judgment is similar to structured site-specific analysis insofar as they are both case-by-case determinations by state environmental agencies. However, structured site-specific review under the proposed rule is clearly meant to be distinct from a best professional judgment determination. For example, the proposed rule requires state agencies to factor particular considerations into their site-specific reviews on the basis of specific submissions by plant owners and operators.

In the proposed rule, EPA should directly contrast the two standards and articulate the ways in which structured site-specific review differs from best professional judgment.⁹⁵ Early reactions to the proposed rule suggest that the differences between the two are insufficiently clear, and some commentators seem to be conflating them.⁹⁶ Given that environmental groups may be conflating the two standards, it is possible that state agencies may do something similar. The states have been applying the best professional judgment standard to cooling water intake structures since Section 316(b) became law in the 1970s. They have compiled detailed guidance and institutional memory regarding its use. There exists a real risk that state agencies may improperly import these practices into their case-by-case determinations under the proposed rule. In a recent survey of regulatory review procedures of all fifty states, very few states had experience with applying cost-benefit analysis at the same level of sophistication as the federal government.⁹⁷ In conjunction with the wide discretion that states have to “consider” the relative importance of factors under the proposed rule,⁹⁸ states may underemphasize the role of cost-benefit analysis in their final site-specific determinations. EPA can combat this risk, in part, by emphasizing the ways in which the two standards differ.

Utilize Retrospective Review

Executive Order 13,563 requires federal agencies to develop and implement a program of retrospective review to evaluate the performance of existing regulations.⁹⁹ In developing this proposed rule, EPA should consider the role of retrospective review. Under such review, EPA should seek to evaluate the rule’s ongoing costs and benefits at the national level and also to evaluate the performance of state agencies in developing and enforcing site-specific standards for entrainment mortality. This should include periodic audits of regulated facilities. To minimize the administrative burden on state and federal agencies, these audits should focus on simple, easy-to-

⁹⁴ See, e.g., BUREAU OF WATERSHED MANAGEMENT, GUIDANCE FOR EVALUATING INTAKE STRUCTURES USING BEST PROFESSIONAL JUDGMENT (BPJ), available at <http://www.dnr.state.wi.us/org/water/wm/wqs/316b/316bGuidanceBPJ.pdf>.

⁹⁵ The proposed rule would continue to use best professional judgment for a limited number of facilities. For example, state agencies would apply best professional judgment when permitting the cooling water intake structures at offshore liquefied natural gas terminals. Proposed Rule, *supra* note 15, at 22,281 (to be codified at 40 C.F.R. pt. 125.91(d)).

⁹⁶ See, e.g., Josh Galperin, *New Rule Suggests EPA Is Caving Under Pressure (And So Are the Fish)*, CLEANENERGY.ORG (Mar. 30, 2011), <http://blog.cleanenergy.org/2011/03/30/epa-caving-under-pressure/> (“Equally disappointing, EPA has not set any standards for entrainment. Rather, EPA has told state agencies to use their ‘best professional judgment’ when deciding how plants should address the problem of entrainment.”).

⁹⁷ SCHWARTZ, *supra* note 59.

⁹⁸ Proposed Rule, *supra* note 15, at 22,288 (to be codified at 40 C.F.R. pt. 125.98(e)).

⁹⁹ Exec. Order No. 13,653 § 6, 76 Fed. Reg. 3821, 3822 (Jan. 18, 2011); see also OFFICE OF INFO. AND REGULATORY AFFAIRS, OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, M-11-10, EXECUTIVE ORDER 13563, “IMPROVING REGULATION AND REGULATORY REVIEW” 4-6 (2011) (elaborating upon the retrospective review requirements of Executive Order 13,653.).

read metrics, including fish age-one equivalent mortality, energy output, electricity rates, and fuel switching.¹⁰⁰

EPA should use the results of these audits to improve the effectiveness of the rule in achieving the objectives of the Clean Water Act and of Executive Order 13,563.¹⁰¹ What this means in practice will depend on the results obtained. It may entail issuing new guidance on how states should perform their structured site-specific reviews. Or, if the rule is dramatically failing to achieve its goals, it may entail an entirely new rulemaking.

However the agency decides to use these results, EPA should not use them as a basis to penalize facilities, provided that they are compliant with existing state requirements. This ensures the cooperation of plant owners and operators and preserves certainty for the regulated community. In other words, an unsatisfactory reduction in fish mortality in the context of a retrospective review should not, by itself, invalidate existing permits. Rather, retrospective review should be an opportunity to evaluate the rule's successes and failures on a programmatic level.

Consider Implementing an Administrative Appeals Process

EPA should also consider whether the rule would benefit from an administrative appeals process to allow timely challenges to state determinations of “best technology available.” An appeals process should provide an opportunity both for regulated firms to challenge what they perceive as an overly stringent regulatory determination and for regulatory beneficiaries to challenge state inaction or under-regulation.¹⁰²

There are potential drawbacks to an administrative appeals process. It creates opportunities for delay by regulated firms and it imposes additional administrative costs. Therefore, EPA should only implement an appeals process if it concludes that these additional costs are outweighed by the benefits of such a program. The benefits would include the opportunity for regulatory beneficiaries to meaningfully challenge regulatory inaction in the face of potentially severe environmental damage; opportunities for settlement before a legal challenge reaches the courts, which may reduce regulatory delay; and—most importantly—the facilitation of an ongoing dialogue among the various state agencies and with EPA, which should result in site-specific regulatory determinations that more consistently maximize net benefits.

EPA Properly Selected Closed-Cycle Cooling as a Regulatory Safe Harbor

EPA's narrative description of the proposed rule stresses structured site-specific review as the primary method of compliance with the entrainment standard. It is true that this is likely the regulation's most important feature and the majority of covered facilities will opt to receive such a review from their respective state agencies. However, the proposed rule quietly contains another compliance option. Under proposed Section 125.94(a)(2), the owner or operator of an existing

¹⁰⁰ See European Commission, *Impact Assessment Guidelines*, SEC(2009) 48-49 (Jan. 15, 2009) (explaining best practices in the European Union for regulatory review), available at http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf; see also European Commission, *Part III: Annexes to Impact Assessment Guidelines* 76-78 (Jan. 15, 2009) (elaborating upon best practices in the European Union for retrospective regulatory review), available at http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_annex_en.pdf.

¹⁰¹ See OFFICE OF INFO. AND REGULATORY AFFAIRS, *supra* note 99, at 4 (“While systematic review should focus on the elimination of rules that are no longer justified or necessary, such review should also consider strengthening, complementing, or modernizing rules where necessary or appropriate—including, if relevant, undertaking new rulemaking.”).

¹⁰² With the notable exception of *Massachusetts v. EPA*, 549 U.S. 497 (2007), Article III courts have generally shied away from challenging agency inaction even in situations where potential regulations could increase social welfare. Any administrative appeals process established under this rule should seek to combat that bias by entertaining challenges that state agencies have under-regulated or failed to regulate cooling water intake structures. See generally REVESZ & LIVERMORE, *supra* note 16, at 159 (discussing the existing structural biases against challenges to agency inaction).

facility may choose to comply with the entrainment mortality standard by installing a cooling water intake structure that reduces either actual intake flow or entrainment mortality to a level roughly equivalent to closed-cycle cooling.¹⁰³ This is a viable and important option for compliance. A closed-cycle cooling standard is consistent with the new source requirements established under Phase I of the Section 316(b) regulations. Moreover, it complements the proposed rule's tiered monitoring and reporting structure by further reducing the administrative burden for plants that adopt closed-cycle cooling.

A safe harbor has important benefits for state environmental agencies. First, it sends a clear signal to state regulators that they should take their responsibilities seriously to set sufficiently protective standards. Creating a clear, but rebuttable, presumption in favor of a stringent compliance option is one way to do so. Second, as EPA notes in the proposed rule, structured site-specific reviews are likely to be a resource-intensive process for the state agencies.¹⁰⁴ The existence of an automatic compliance option allows state agencies to better manage their administrative burdens. While the decision to adopt closed-cycle cooling lies with a facility's owner and operator, if the automatic compliance option is more desirable for state agencies, they may negotiate with the regulated community to persuade them to adopt the more stringent standard.

There may be reasons for owners and operators to prefer the safe harbor as well, even one as potentially expensive as closed-cycle cooling. A safe harbor has the virtue of certainty. Particular plants might be able to obtain a less stringent determination of best technology available from the state agency; however, such a determination would follow years of monitoring, analysis, and potential litigation. Even after expending considerable resources towards conducting or cooperating with the analysis, a weaker standard is by no means guaranteed. Owners and operators may prefer the long-term certainty of a known standard to the near-term goal of avoiding upgrades to their cooling water intake structures. This is most true for facilities that suspect they may ultimately be subject to closed-cycle cooling requirements anyway. Further, the costs of the various extra reporting requirements under Section 122.21 may simply exceed the marginal costs of installing a closed-cycle cooling system. In such cases even a firm with perfect information about the future would rationally prefer to adopt the more stringent standard. A closed-cycle cooling system will also typically make it easier for facilities to comply with the proposed rule's impingement requirements.¹⁰⁵ Finally, if EPA decides to adopt a deadline by which all existing facilities must install closed-cycle cooling systems—as this Comment argues that it should—firms may prefer to adopt closed-cycle cooling in the near-term rather than delay it. This would avoid the prospect of incurring costs to install interim compliance measures today only to face the requirement for further upgrades in the future. No single one of these factors is likely to persuade a firm to voluntarily install closed-cycle cooling; however, some combination of them may be persuasive.

VI. Federalism and the Rule's Scope

EPA should consider altering the division of regulatory authority between federal and state agencies and should bolster its explanation regarding the determination of which facilities will be regulated under the rule.

¹⁰³ Proposed Rule, *supra* note 15, at 22,282 (to be codified at 40 C.F.R. pts. 125.94(a)(2) and 125.94(d)).

¹⁰⁴ *Id.* at 22, 261 (“EPA recognizes the resource limitations faced by [state] permitting authorities.”).

¹⁰⁵ *Id.* at 22,205 (“As a practical matter, make-up water withdrawals are made at such low velocities that facilities with closed-cycle [sic] can demonstrate compliance with the alternative reduced intake velocity to meet the impingement mortality limits.”).

Retain Federal Authority for Facilities that Risk Significant Interstate Externalities

EPA delegates a large amount of authority to the states under the site-specific entrainment provision of the proposed rule. There are certain situations, however, where the federal government is better positioned to determine this standard than are the individual states. In particular, this includes situations where a facility's choice of cooling water intake structure may impose significant externalities on downstream states. Such a situation is more likely to arise when a facility is located near the border between two states, though it may occur whenever a facility is in a position to affect downstream resources such as fish migration across state boundaries.¹⁰⁶ State agencies are unlikely to fully consider social benefits that accrue to other states from the regulation of cooling water intake structures. Therefore, the upstream states are likely to adopt sub-optimally lax standards and under-invest in protective technology.

"The presence of interstate externalities constitutes a market failure . . . [C]orrecting the externality leads to the maximization of social welfare."¹⁰⁷ Given the structure of the proposed rule, the simplest solution is to retain federal authority over the regulation of sources that risk significant interstate externalities. The federal government is in a better position to evaluate these facilities without bias and thus adopt a standard that maximizes net benefits, regardless of state lines.

Expanding the Rule's Scope to Cover Facilities above 2 MGD Will Help Maximize Net Benefits

In 2004 Phase II rulemaking, EPA elected to create national standards for existing facilities that withdrew at least 50 MGD from U.S. waterbodies.¹⁰⁸ EPA has expanded the national Phase II regulation considerably—the proposed regulation now covers existing facilities that withdraw in excess of 2 MGD.¹⁰⁹

Under the proposed rule, EPA has created a blanket rule with a de minimus exception. Establishing de minimus exceptions is often an appropriate regulatory approach, because there is generally a size threshold for firms below which the administrative costs of regulation outweigh the benefits. In 2004, it was unclear why EPA chose to regulate impingement and entrainment only of firms that withdrew greater than 50 MGD; the costs of regulating firms falling beneath the 50 MGD threshold did not obviously outweigh the benefits.

EPA should expand its justification for setting the exception where it has. In practice, any bright line threshold between regulated firms and the de minimus exception will involve some level of arbitrariness and impose some wasteful costs. That being said, such a threshold is justified, so long as EPA clearly articulates the reasons for its choice, clarifying the analytical framework it used and the inquiry conducted. If EPA can demonstrate that facilities withdrawing less than 2 MGD would generally cost more to regulate than the benefits warrant, this exception maximizes net benefits.

VII. Conclusion

The proposed rule has the potential to significantly enhance the nation's water quality by revoking an implicit and unjustified subsidy to industrial facilities. It requires power plants and manufacturing facilities to internalize the costs of their cooling water operations on environmental health and ecosystem services.

¹⁰⁶ For one notable case addressing analogous issues in the context of the Clean Air Act, see *Air Pollution Control District of Jefferson County v. Env'tl. Prot. Agency*, 739 F.2d 1071 (6th Cir. 1984).

¹⁰⁷ Richard Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341, 2374-75 (1996).

¹⁰⁸ 2004 Phase II Rule, *supra* note 5.

¹⁰⁹ Proposed Rule, *supra* note 15, at 22,174.

EPA should ensure that it is using consistent, substantive criteria and cost-benefit methodology throughout this rulemaking. EPA should also ensure that any site-specific analyses comply with the mandate of Executive Order 13,563 and the stated goal of the agency to maximize net benefits. Further, EPA should articulate a long-term goal of upgrading all regulated facilities over time and ensure that the rule will achieve that goal.

The proposed rule represents a dramatic improvement in the methodology, the policy ambitions, and the administrative record over the 2004 Phase II rule. These recommended improvements to the final Phase II rule will help maximize net social benefits making it a stronger, more efficient, and more useful regulation.

Sincerely,

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