

NPDES 316(b): The Final Rule

Summary

On May 19, 2014, the United States Environmental Protection Agency (EPA) issued a Final Rule under Section 316(b) of the Clean Water Act. The 316(b) Rule establishes requirements for regulating cooling water intake structures (CWIS) at existing power generating facilities and large manufacturing and industrial facilities.

The Rule will be implemented through the NPDES or SPDES permit process and will require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impacts to fish and other aquatic organisms.

What's Changing?

The final Rule requires facilities withdrawing 2 million gallons per day (MGD), and utilizing 25% of the withdrawn amount exclusively for cooling purposes, to meet certain requirements to minimize impingement and entrainment.

There are 3 Components to the Rule

- 1 Existing facilities that withdraw at least 25% of their cooling water from an adjacent waterbody and have a design intake flow of greater than 2 MGD must reduce fish impingement. The facility will be able to choose one of seven options for meeting best technology available requirements.
- 2 Facilities that withdraw at least 125 MGD are required to conduct studies to determine what, if any, site-specific entrainment mortality controls are required. This process will include public input.
- 3 New units installed at existing facilities to increase generating capacity have two options for compliance: 1) reduce the intake flow to the equivalent level of a closed-cycle, recirculation system or 2) demonstrate to the permitting authority that it has installed and will operate technological or other control measures that achieve a prescribed reduction in entrainment mortality.

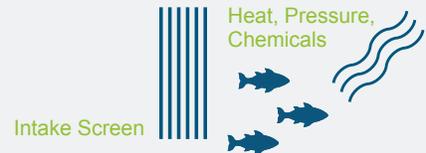
It's important to note that facilities not covered by the Final 316(b) Rule may still be subject to regulations set by the EPA, state, or local NPDES Permitting Director on a case-by-case basis.

Terms to Know



Impingement

Impingement occurs when fish and other organisms are trapped against screens when water is drawn into the cooling water intake system.



Entrainment

Entrainment occurs when early life-stage fish and shellfish are drawn into the cooling water system and exposed to heat, pressure, chemicals, or mechanical stresses associated with the cooling system.

How Soon Do I Need to Make Changes?

The Final Section 316(b) Rule does not establish a statutory deadline for meeting the best technology available standard for impingement or entrainment. The permitting authority is responsible for establishing a compliance schedule in the next NPDES permit period. The permitting authority is required first to establish entrainment requirements in the final permit; the facility will then be required to comply with the impingement mortality standard “as soon as practicable”.

New Peer Review Requirements

The owner or operator of the facility **must provide for peer review of required permit application studies** identified in the new Rule: Comprehensive Technical Feasibility and Cost Evaluation, Benefits Valuation, and Non-Water Quality and Other Impacts Assessment. Peer review of the Entrainment Characterization Study is not required. Applicants must select and obtain approval of their peer reviewer(s) from their EPA, state, or local NPDES Permitting Director in advance. More than one peer reviewer may be necessary.

Environmental Consulting Support

Having a consultant who is knowledgeable in the elements of entrainment/impingement characterization and technology effectiveness can be a valuable asset and help expedite the compliance process. In addition to fulfilling the peer review requirement, a specialist can assist facility operators in the planning, analysis, budgeting, and decision-making involved in the 316(b) compliance process. These experts can assist in summarizing existing operating conditions, identify any deficiencies under the requirements of the new Rule, and make recommendations for improvement.



Industries Most Likely Affected

- Power generation (i.e. steam electric)
- Chemical and allied products
- Primary metals (i.e. manufacturing, smelting, and refining processes)
- Paper and allied products (i.e. paper and pulp manufacturing)
- Petroleum and coal products



Photo Credit: U.S. Fish and Wildlife, Bob Burdick via Wikimedia Commons



Possible Control Technologies

- Modified traveling screen
- Barrier nets
- Closed-cycle wet cooling towers



Questions?

Stephanie Wilson is a Senior Environmental Scientist with over 16 years of experience in preparing and reviewing impact assessment documents for both public and private sector clients, particularly involving environmental issues concerning compliance with Clean Water Act (Section 316) and NPDES regulations. Ms. Wilson has designed and implemented multiple monitoring programs to evaluate impingement and entrainment of organisms in both freshwater and marine systems. She is experienced in fisheries population modeling and has developed models to evaluate cost benefits and impacts to fisheries associated with water intake systems. She can be reached at swilson@essgroup.com and 781-419-7710.

About ESS

ESS Group, Inc. is a multi-disciplinary environmental consulting and engineering firm comprised of scientists, engineers, and environmental specialists who provide full life cycle engineering and consulting services. ESS staff have conducted fisheries and benthic impingement, entrainment, and mortality studies for cooling water intake structures, water discharge structures, hydroelectric facilities, dams, and fishways. We are familiar with the regulatory requirements of the Clean Water Act Section 316(b) rules and the various technology and operational measures that facilities can implement as cost-effective solutions for protecting fish at cooling water intakes.

