

Proposed Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities

Summary

EPA has proposed standards under the Clean Water Act to follow through on a recent settlement agreement with environmental groups whereby EPA agreed to issue regulations to reduce injury and death of fish and other aquatic life caused by cooling water intake structures existing at power plants and factories. These facilities pull in large volumes of cooling water from lakes, rivers, estuaries or oceans to cool their machinery. By setting flexible technology standards, EPA's common sense proposal would greatly reduce damage to ecosystems while accommodating site-specific circumstances and providing cost effective options.

This rule covers roughly 1,260 existing facilities that each withdraw at least 2 million gallons per day of cooling water. EPA estimates that approximately 590 of these facilities are manufacturers, and the other 670 are power plants. The technologies required under the rule have been in use for several decades and have been implemented at a large number of facilities.

Background

Section 316(b) of the Clean Water Act requires that National Pollutant Discharge Elimination System (NPDES) permits for facilities with cooling water intake structures ensure that the location, design, construction, and capacity of the structures reflect the best technology available to minimize harmful impacts on the environment. The withdrawal of cooling water by facilities removes billions of aquatic organisms from waters of the United States each year, including fish, fish larvae and eggs, crustaceans, shellfish, sea turtles, marine mammals and other aquatic life. Most impacts are to early life stages of fish and shellfish through impingement and entrainment.

Rulemaking History

Under a consent decree with environmental organizations, EPA divided the section 316(b) rulemaking into three phases. All new facilities except offshore oil and gas exploration facilities were addressed in Phase I in December 2001; all new offshore oil and gas exploration facilities were later addressed in June 2006 as part of Phase III. This proposed rule removes a portion of the Phase I rule in response to judicial findings.

Existing large electric-generating facilities were addressed in Phase II in February 2004. Existing small electric-generating and all manufacturing facilities were addressed in Phase III (June 2006). However, Phase II and the existing facility portion of Phase III were remanded to EPA for reconsideration as a result of legal proceedings. This proposal combines Phases II and III into one rule, and provides a holistic approach to protecting aquatic life impacted by cooling water intakes.

Any facility not covered by these national rules will continue to be subject to section 316(b) requirements set by the EPA, state or territorial NPDES Permitting Director on a case-by-case, best professional judgment basis.

Summary of the Proposal

Provisions of the Rule

There are three components to the proposed regulation.

First, existing facilities that withdraw at least 25 percent of their water from an adjacent waterbody exclusively for cooling purposes and have a design intake flow of greater than 2 million gallons per day (MGD) would be subject to an upper limit on how many fish can be killed by being pinned against intake screens or other parts at the facility (impingement). The

facility would determine which technology would be best suited to meeting this limit. Alternately, the facility could reduce their intake velocity to 0.5 feet per second. At this rate, most of the fish can swim away from the cooling water intake of the facility.

Second, existing facilities that withdraw very large amounts of water--at least 125 million gallons per day--would be required to conduct studies to help their permitting authority determine whether and what site-specific controls, if any, would be required to reduce the number of aquatic organisms sucked into cooling water systems (entrainment). This decision process would include public input.

Third, new units that add electrical generation capacity at an existing facility would be required to add technology that is equivalent to closed-cycle cooling (continually recycles and cools the water so that minimal water needs to be withdrawn from an adjacent waterbody). This can be done by incorporating a closed-cycle system into the design of the new unit, or by making other design changes equivalent to the reductions associated with closed-cycle cooling. Closed-cycle cooling systems—often referred to as cooling towers or wet cooling-- are the most effective at reducing entrainment.

For More Information

Please contact Paul Shriner (shriner.paul@epa.gov) at 202-566-1076. You can also learn more about this rule by visiting EPA's website at: <http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/>.
