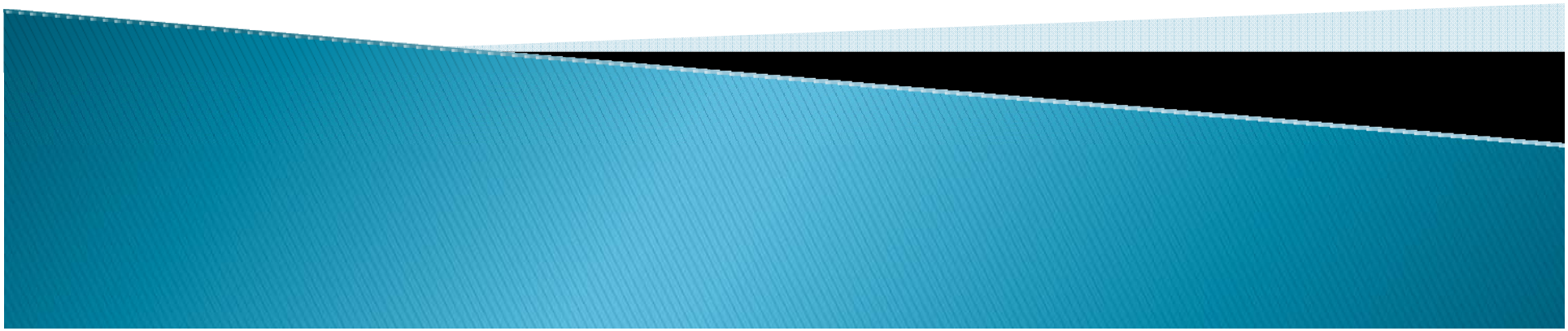
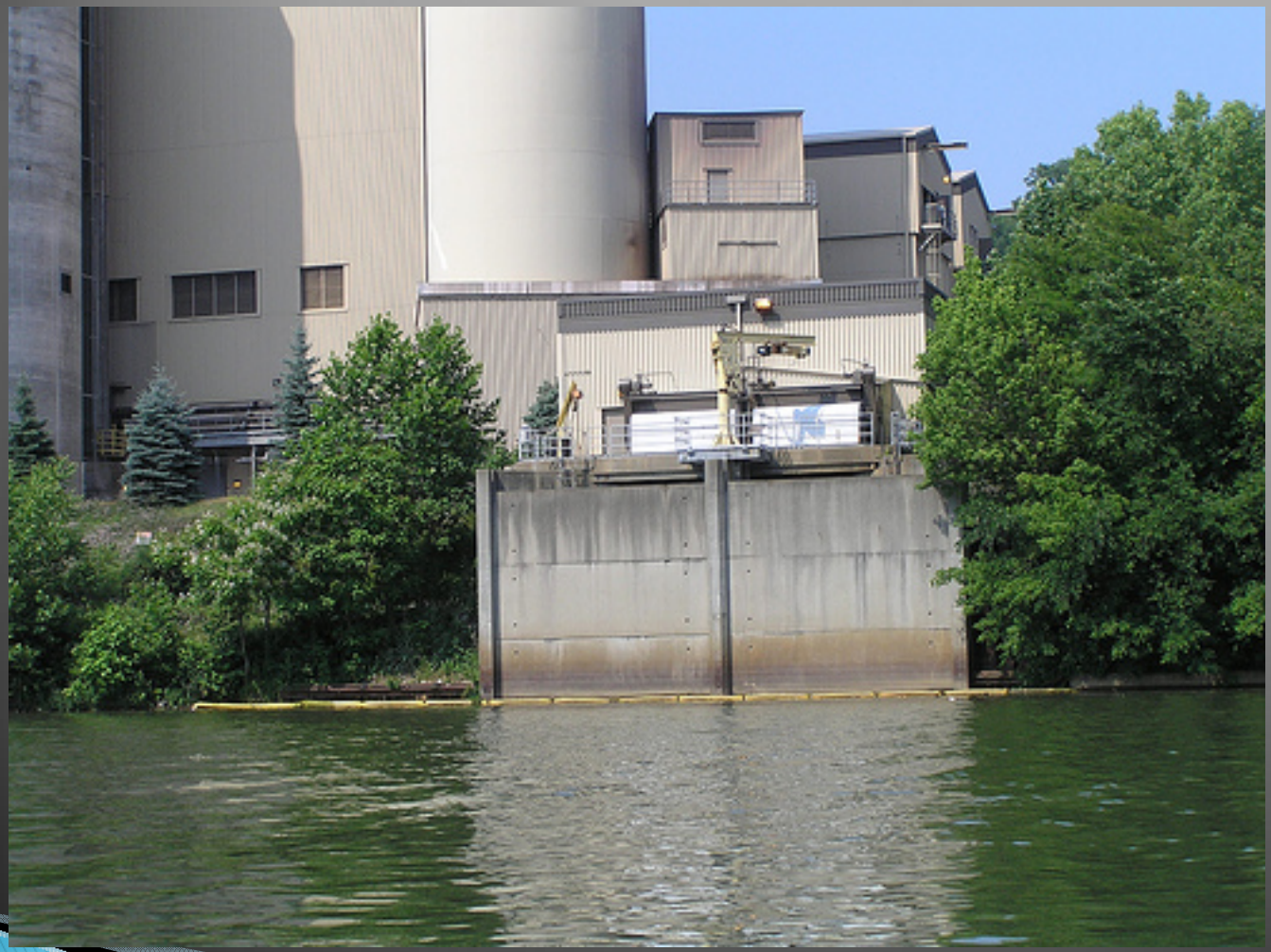
Update on Clean Water Act §316(b) Rulemaking

Cooling Water Intake Structure
Impingement & Entrainment





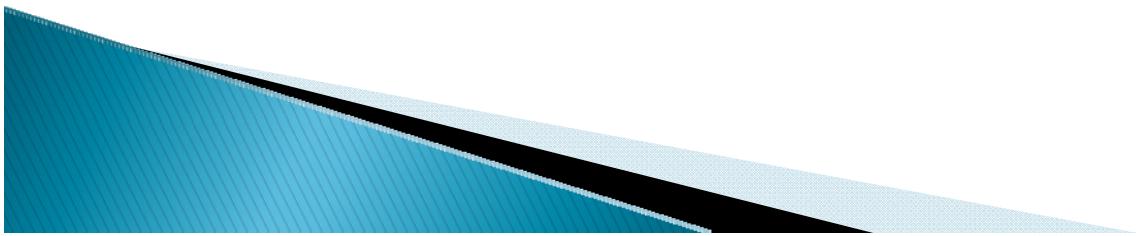
Requirements of §316(b)

- Ensure that the location, design, construction, and capacity of cooling water intake structures (CWIS) reflect the best technology available to protect aquatic organisms from being killed or injured by:
  - **impingement** (being pinned against screens or other parts of a cooling water intake structure) or
  - **entrainment** (being drawn into cooling water systems and subjected to thermal, physical or chemical stresses).

http://www.epa.gov/waterscience/316b/phase2/phase2final-fs.htm

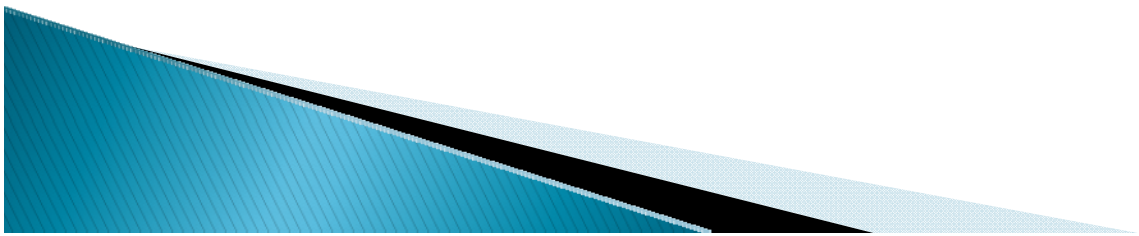
Phase I – New CWIS Structures

- December 2001: Final rules for *new* CWIS facilities (40 CFR 125, Subpart I)
  - Applies to electric utilities and manufacturers that withdraw > 2 million gallons/day (MGD) that use ≥25% of the intake volume for cooling water
- Compliance strategies:
  - Limited intake capacity and default screen velocity
  - Site specific demonstrations



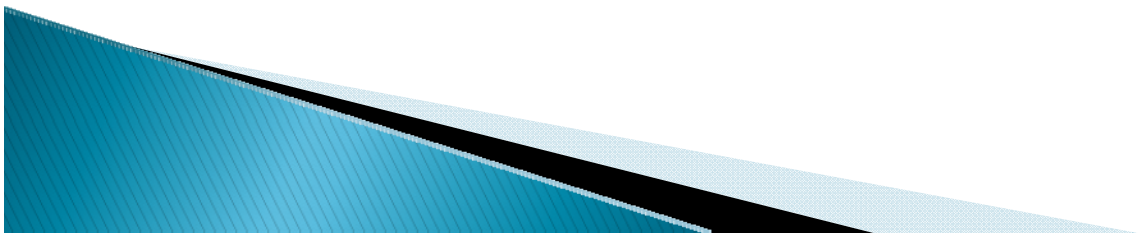
Phase II: Electric Utilities

- Final rule issued February 2004 (40 CFR 125, Subpart J)
- Large electric utility plants that withdraw >50 MGD and use ≥ 25% of the intake volume for cooling water:
  - Impingement: reduce by 80 to 95 percent from uncontrolled levels.
  - Entrainment: reduce by 60 to 90 percent from uncontrolled levels.
- The final rule provided several compliance alternatives:
  - Use of existing technologies
  - Selection of additional fish protection technologies (such as screens with fish return systems)
  - Restoration measures



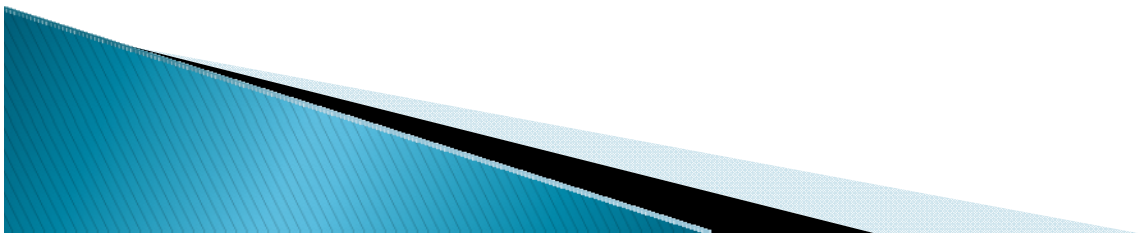
Phase III Proposed Rule (11/2004)

- Three options based on design intake flow and source waterbody:
  - The facility has a total design intake flow of 50 MGD or more, and withdraws from any waterbody type; or
  - The facility has a total design intake flow of 200 MGD or more, and withdraws from any waterbody type; or
  - The facility has a total design intake flow of 100 MGD or more and withdraws water from an ocean, estuary, tidal river, or one of the Great Lakes.
- Because the lowest proposed threshold is 50 MGD and EPA already established standards for power producers over 50 MGD in the Phase II rule, EPA only considered requirements for existing manufacturing facilities (not power producers) and new oil and gas extraction facilities under the proposed Phase III rule.



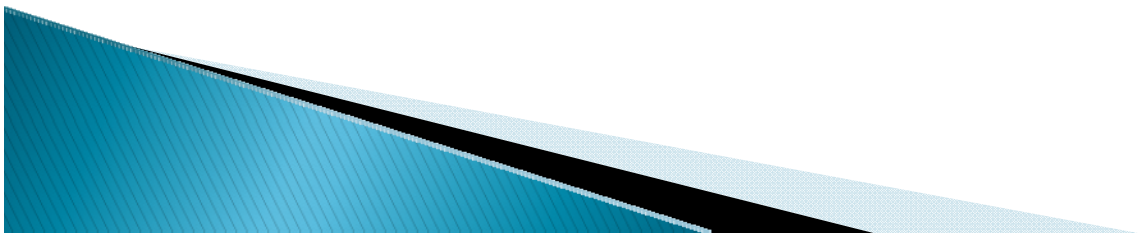
Phase III: New Offshore Oil & Gas

- Final rules issued June 2006 (40 CFR 125, Subpart N)
- Applies to new offshore oil and gas extraction facilities with a design intake flow >2 MGD and that withdraw $\geq$25 percent of the water exclusively for cooling purposes
- With the final Phase III rules, EPA affirmed their decision to implement §316(b) through NPDES permits for non-covered facilities on a case-by-case, best professional judgment basis



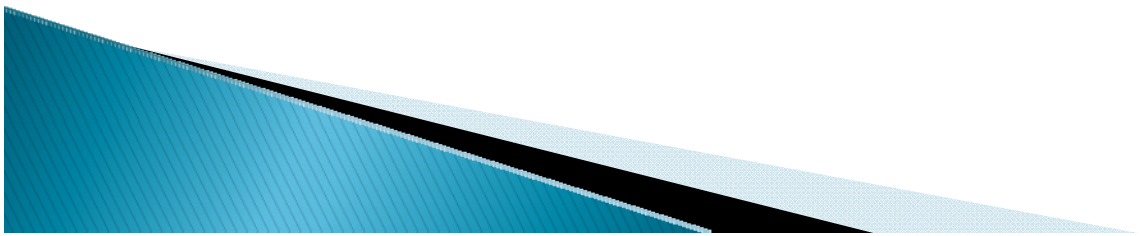
Riverkeeper, Inc. v EPA

- Second U.S. Circuit Court of Appeals issued decision January 2007 on **Phase II** final rule
- Among the provisions remanded:
  - EPA's determination of BTA
  - Performance standard ranges
  - Cost-cost and Cost-benefit compliance alternatives
  - Restoration provisions as an alternative compliance strategy
- EPA issued a memo in March 2007 suspending the final Phase II rule (published notice on July 9, 2007 at 72 FR 37107)



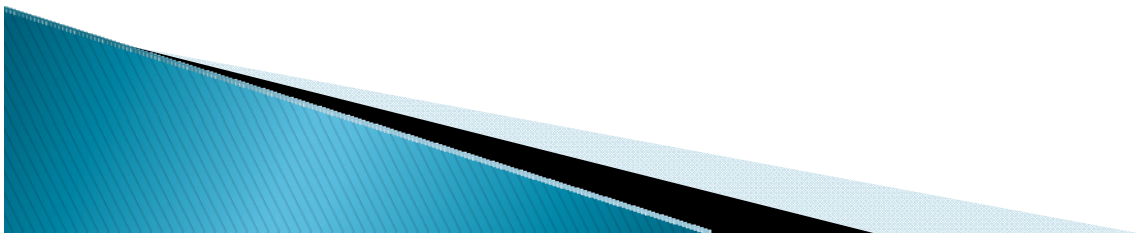
Phase III Litigation

- Jurisdiction issues settled with case assigned to the Fifth US Circuit Court of Appeals
- Case briefed, then EPA issued their statement of reconsideration, asking Court for Remand instead of arguments
- December 2009: Case argued
  - EPA didn't argue/defend rule because they want it remanded
  - Environmentalists argued cost-benefit was illegal
- No clear direction on what Court may do…



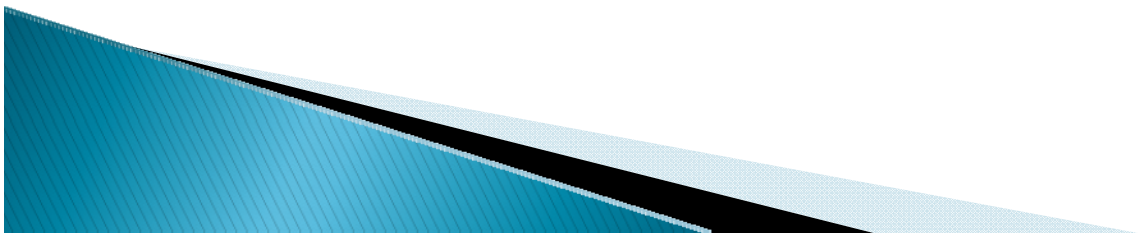
Where we are now…

- *Ad hoc* coalition formed to follow EPA's rulemaking (CWIS Coalition) – includes API, AF&PA, ACC, iron & steel, APPA, CIBO, FWQC
- EPA developing a new rule that will combine Phase II and Phase III requirements into a single program
  - Proposed rule ~mid 2010
  - Final rule ~mid to late 2012



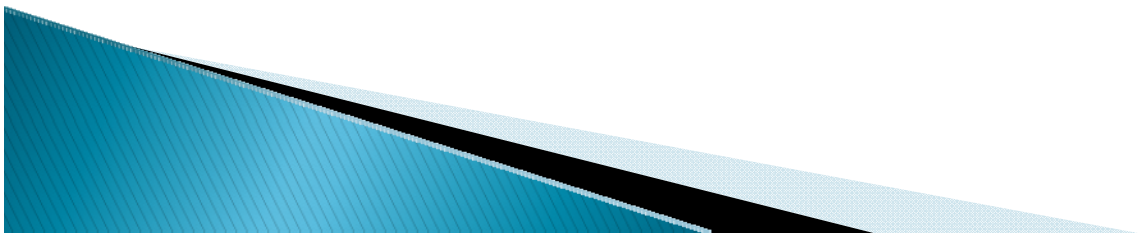
Data Collection efforts by EPA

- EPA doing site visits
  - Phase II
  - Refineries
  - Iron & Steel
  - Food processing
- Willing to consider “new” information since the 1999 information collection request
  - No additional formal ICR planned at this time
- EPA recommending sources review the Phase III technical support documents



CWIS Coalition Proposals

- Maintain definition of cooling water to encourage water reuse
- Applicability Screening:
  - Determinations should be made intake-by-intake
  - Exempt CWIS with low velocity (<0.5 ft/sec) screens
  - Use x% of 7Q10 to determine impacts of CWIS
  - 50/100 MGD as the individual CWIS threshold
  - Use of actual yearly average flow rather than design



CWIS Coalition Proposals

- Affected Facilities:
  - Give option of case by case BPJ or selection from a suite of potential technologies determined to reflect BPJ
  - Option to show reduction of I&E through either technology installation or water conservation and reuse
  - Uniform requirements for Phase III facilities must consider all of the variables (energy impacts, GHG emissions, chemical use, solid waste production, etc) *and* provide for site-specific variances to account for impracticabilities

Learning About I&E for Your CWIS: "§316(b) Study"

- The Study Plan
  - Comprehensive protocol for sampling
  - Outlines frequency of sampling events for impingement and entrainment
    - Accounts for seasonal variability
    - Outlines periods that will be excluded
      - Flooding conditions?
      - Drought conditions?
  - Consideration for stratification of species in water column
  - Taxonomic identification of species and evaluation of impacts
    - How will non-native or invasive species be counted?
    - Typically assumes 100% mortality of entrained species

Challenges with the §316(b) Study

- Cost: Not cheap
- Timing: the study should be conducted across a 12-month period in order to capture the seasonal variability
- Agency interface: the NPDES permitting authority will (ultimately) make the BPJ determination, so their buy-in on the study plan is needed

Possible §316(b) for CIBO Members

- What is your CWIS design capacity?
  - Redundant pumping?
  - Do you know how much of your intake water is directed to your circulating cooling water system?
- Use of average flow of a CWIS vs design capacity in categorization
- Impacts of urbanization on a watershed
- Impacts of invasive species
- Can EPA's "non-utility" or "miscellaneous" category really be framed so that one size fits all?