US Army Corps
of Engineers
Waterways Experiment
Station

Zebra Mussel Research Technical Notes

July 1992

Components of Hydropower Projects Sensitive to Zebra Mussel Infestations

Background

A working group of experts knowledgeable on the subjects of hydropower facilities and zebra mussel biology and control met in January 1992 to identify facility components most at risk of failure or disruption due to zebra mussel infestations. An outline of possible control measures was also developed for each component as the initial step toward developing control strategies.

Additional information

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Components at risk and control strategies

The following categories of sensitive components and control strategies were identified:

Facility Component	Control Strategy
Raw water cooling system	Convert to closed systems Use water from municipal supply Modify equipment to air-cooled type (use air compressors, for example) Clean with hot water or steam Inject chlorine at or near intake Clean manually or use “pigs”
Head and tailwater gauges and other raw water contact instruments	Hot water injection Chlorine injection Apply heat tape to exposed pipes Replace with noncontact instruments Clean manually or use “pigs”
Station drainage sumps and pumps	Clean manually Chlorine treatment Disposable liners Antifoulant coatings

Prepared and published by the Zebra Mussel Research Program, U.S. Army Engineer Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.

Facility Component	Control Strategy
Turbine headcover	Hot water wash Antifoulant coatings Chlorine wash Manual cleaning
Stormwater and other drains with discharge below water level	Antifoulant coatings Hot water wash Clean manually or use “pigs” Desiccation (expose to the atmosphere) Consider the effect of added weight on the gate
Bulkheads, intakes, and tailgates	Hot water wash Manual cleaning Antifoulant coatings Desiccation
Gate slots and sills	Hot water wash Manual cleaning Antifoulant coatings Desiccation Disposable liners
Fish ladders	Change design to tolerate infestations Hot water wash Manual cleaning Antifoulant coatings Desiccation (expose to atmosphere)
Penstock and tunnel, scroll case, draft tube, scurge tanks, butterfly valves, turbine vacuum breakers	Hot water wash Manual cleaning Antifoulant coatings Desiccation Chlorine injection
Fish hatchery and water supplies	Parallel lines Desiccation Chlorination Clean manually or use “pigs”
Cathodic protection	Convert to zinc Manual cleaning Hot water wash Tolerate — no action