



# Advanced Cooling Designs for Aqueous Heat Rejection

*This is a proposal for the Advanced Cooling Technologies supplemental project. Final project tasks will be selected through prioritization by the project funders.*

## Issue

Current once-through cooling designs require large quantities of surface water to cool the plant. This process affects aquatic populations through impingement of larger organisms and entrainment of eggs and larvae.

## Description

Proposed new cooling system designs could provide efficiencies equivalent to once-through cooling without the associated impacts of extracting the cooling water. Concepts could include subsurface heat exchangers for steam condensing or indirect cooling, subsurface intake systems, and other advanced technologies.

## Value

- Decreased costs associated with once-through cooling compared to other options
- Water conservation compared to evaporative cooling
- Efficiency improvements over life of plant
- CO<sub>2</sub> reduction from efficiency gains

## Approach

EPRI will work with leading researchers to develop conceptual concepts for new cooling options with performance similar to current once-through systems. Each will be developed as a conceptual design with performance estimates.

## Project Deliverables

Deliverable Title	Planned Completion Date	Deliverable Type
Advanced Cooling Designs for Aqueous Heat Rejection	12/31/2010	Technical Report

## How to Apply the Results

This study will be the first step in development of the next generation of cooling options that will allow heat rejection to surface water systems.

## Cost Estimate

EPRI estimates that this project would require 24 months and \$200,000–\$300,000 to complete, depending on the number of concepts proposed.

## For More Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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