



# Application of Dry Cooling in Nuclear Power Plants

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

## Issue

The United States is planning new nuclear power plants and dry cooling will be considered in many cases. But a variety of challenges have to be overcome to develop the best design for a cooling plant.

## Description

Direct air-cooled steam condensers as found at many dry-cooled power plants in the United States are unacceptable from a safety and operations standpoint for use at nuclear plants. The cooling towers at the Kendal power plant in South Africa are examples of the type that might be considered. Hybrid dry/wet systems need to be considered for effective cooling under hot ambient conditions. At present there is one nuclear power plant in Russia that is dry-cooled, but questions have to be answered before these systems will become a reality in the United States.

## Value

Performance evaluation and design procedures for using dry cooling in nuclear plants.

## Approach

EPRI will assess the current dry cooling technologies being used in the US and abroad for potential application to nuclear units. In addition to cost and efficiency impacts, the technologies will be evaluated for safety and risk when used in nuclear units.

## Project Deliverables

| Deliverable Title                                  | Planned Completion Date | Deliverable Type |
|--|-------------------------|------------------|
| Application of Dry Cooling in Nuclear Power Plants | 12/31/2009              | Technical Report |

## How to Apply the Results

Utilities will be able to use these guidelines to assess the value and technical feasibility of adopting dry cooling technology for new nuclear generating capacity. Use of the information will reduce the risk associated with building and operating such installations.

## Cost Estimate

This project is anticipated to take 12 months and \$120,000 to complete.

## For More Information

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

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