

EPRI Updating and Expanding Open Cooling Water Chemistry Guidelines

The new document will provide guidance on chemistry control in open cooling water systems and will be applicable to both nuclear and fossil generating plants.

EPRI is updating and expanding a mid-1990s guidance document for improving chemistry control within open cooling water chemistry systems. The new document, which will include guidance for both nuclear and fossil plants, will be available by the end of 2012. The previous guideline, *Service Water System Chemical Addition Guideline* (EPRI report TR-106229), provided information related to selection and application of treatment chemicals in service water systems. The new guidance will encompass all aspects important to chemistry control within these systems, including design, materials, and chemical application. It will also include guidelines for other open cooling systems, including circulating water systems and cooling towers.

In planning for the new chemistry guideline document, preliminary scoping revealed that both nuclear and fossil stations shared similar materials, design, and operation of open cooling systems as they relate to chemistry control. It became clear that a single chemistry document could provide fossil and nuclear stations with guidance that takes advantage of this wide range of operating experience.



One challenge in developing such an encompassing document is the variation in materials of construction and raw water chemistry. Chemistry control for a titanium-tubed condenser on the ocean coast, for example, is very different than that for an admiralty brass condenser on the Great Lakes. The new document, therefore, will provide the plant chemist with the tools to develop an optimized chemistry plan specific to that plant's needs. The updated guidance will help the plant develop and implement a detailed chemistry plan that encompasses the design, materials, raw water chemistry, and biological fouling challenges unique to each plant and each system. For example, the guidance will aid the plant in finding a balance between corrosion control and fouling due to scale formation. These two issues are often competing and require an optimum chemistry balance based on the specific materials of construction and the raw water chemistry.

The *Open Cooling Water Chemistry Guideline* is scheduled to be published before the end of 2012. Subject matter experts from fossil and nuclear stations, water treatment companies, and consulting companies are contributing to the development of the guidelines.

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