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OVERVIEW OF EPRI RESEARCH AND DEVELOPMENT PROJECTS IN DECOMMISSIONING TECHNOLOGY

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Abstract

Decommissioning of a nuclear plant encompasses the activities necessary to terminate the radioactive materials license and to release the site for other uses. In practice, this is a complex process involving careful planning and execution to satisfy requirements imposed by regulators and other stakeholders. Past experience has shown the decommissioning process takes a minimum of eight years to complete, with an average project cost greater than $US685 million. Since 1972, 142 commercial power reactors have been permanently shut down in EPRI-member countries, and of these only 13 have completed decommissioning activities. During the next 10 years, completion of decommissioning activities is anticipated for about 20 plants, while more than 120 plants are predicted to permanently shut down. By 2029 decommissioning activities may be pending at more than 200 plants, representing potential costs in the hundreds of billions of dollars. To effectively manage this demand, research and development efforts are needed in all phases of plant decommissioning to reduce schedule and costs through improvements in process efficiency. R&D efforts are specifically needed in the areas of project planning, plant decontamination and dismantlement (D&D), waste management, and performance of site radiological surveys for release.

This paper will focus on the research and development work being conducted by EPRI to develop new techniques that are expected to facilitate NPP decommissioning.