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# Models for Estimation of Service Life of Concrete Barriers in Low-Level Radioactive Waste Disposal

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Manuscript Completed: July 1990  
Date Published: September 1990

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Prepared for  
Division of Engineering  
Office of Nuclear Regulatory Research  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555  
NRC FIN A6858

## Abstract

Concrete barriers will be used as intimate parts of systems for isolation of low-level radioactive wastes subsequent to disposal. This work reviews mathematical models for estimating the degradation rate of concrete in typical service environments. The models considered cover sulfate attack, reinforcement corrosion, calcium hydroxide leaching, carbonation, freeze/thaw, and cracking. Additionally, fluid flow, mass transport, and geochemical properties of concrete are briefly reviewed. Example calculations included illustrate the types of predictions expected of the models.

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FIN No. A6858 - Performance of Concrete Barriers in  
Low-Level Waste Disposal