

Celebrating the Scientific Contributions of Florie Caporuscio to Understanding the Geochemistry of Subsurface Nuclear Waste Storage

EMILY STEIN¹ AND CARL I STEEFEL²

¹Sandia National Laboratories

²Lawrence Berkeley National Laboratory

Since 2012, Dr. Caporuscio's research group at Los Alamos National Laboratory has performed systematic, experimental studies of the mineralogy and geochemistry of bentonite clay over a range of temperatures and pressures, and in the presence of different nuclear waste canister materials and host rocks. These studies have generated highly unique and precious experimental data sets relevant to mined repositories and the deep borehole disposal of nuclear waste. While investigating various scientific questions, a particular focus of Dr. Caporuscio's work was on the characterization of mineral assemblages resulting from hydrothermal alterations of bentonite, including canister-bentonite interfaces, the impacts of thermal gradients on brine migration in salt, and the redox chemistry and sorption of uranium in deep geologic repositories.

In this presentation, we will provide an overview of Dr. Caporuscio's lifelong contributions to the understanding of geochemistry impacting the safety and performance of deep geological nuclear waste repositories. Please join us in celebrating Florie's research and accomplishments.