

Contract No:

This document was prepared in conjunction with work accomplished under Contract No. 89303321CEM000080 with the U.S. Department of Energy (DOE) Office of Environmental Management (EM).

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SRNL-STI-2022-00534

THE ESSENTIAL ROLE OF RADIOCHEMISTRY IN NUCLEAR FORENSICS: OPPORTUNITIES TO SUPPORT ATTRIBUTION AND DETERRENCE

Sue B. Clark

Savannah River National Laboratory

Sue.Clark@srnl.doe.gov

Nuclear forensics includes the analysis of nuclear material to determine the origin and history of unknown contaminated materials, relying in part on analytical and environmental radiochemical techniques. It is a cornerstone of the nuclear security posture of many countries. Research and development opportunities abound for improving the nature and quality of the information generated in nuclear forensics operations. For example, gross isotopic information can be more informative with combined with detail on radionuclide speciation, and confidence in results can be increased when overall uncertainties are minimized. This presentation will focus on some of these opportunities for radiochemistry to enhance nuclear forensics capabilities, as explored in a recent National Academies study entitled “Restoring and Improving Nuclear Forensics to Support Attribution and Deterrence”, 2021 (ISBN-13: 978-0-309-27333-6).