DEPLOYMENT OF POROUS CRYSTALLINE MATRIX (GUBKA) FOR STABILIZING RADIOACTIVE STANDARD SOLUTIONS AT FERNALD

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ABSTRACT

Radioactive solutions requiring stabilization exist in various compositions throughout the DOE complex. Future cleanup could generate additional actinide residue solutions requiring stabilization at facilities where processing capabilities have been dismantled. Radiological laboratory standard solutions (liquid technical standards) have recently been identified at the Fernald site, which require stabilization and disposal before the laboratory facilities at Fernald can be decommissioned. The Fernald solutions consist of approximately 25 liters of acidic solutions containing isotopes of Cs, Ba, Ra, Eu, U, Am, Po, Ru, Sr, Th, Pb, Pu, and Np and in some cases small quantities of added salts. After stabilization and waste acceptance approval, the resulting waste forms will be disposed at the Nevada Test Site. This paper describes the technology and progress in using the Russian "Gubka" technology to stabilize the Fernald liquid technical standards for disposal by September 2002 to meet the facility D&D schedule.

INTRODUCTION

Fernald Radioactive Standard Solutions Description

Radioactive solutions requiring stabilization exist in various compositions throughout the DOE complex. Future cleanup could generate additional actinide residue solutions requiring stabilization at facilities where processing capabilities have been dismantled. Radiological laboratory standard solutions (liquid technical standards) have recently been identified at the Fernald site, which require stabilization and