

Downgrade of the Effluent Treatment Facility (ETF) at the Savannah River Site from a Hazard Category Three to a Radiological Facility

James A. Guerry
DOE-SR
Engineering Division, Assistant Manager for High Level Waste

Department of Energy
Savannah River Site
PO Box A
Aiken, SC 29802
803-208-7406
jimmy.guerry@srs.gov

The Effluent Treatment Facility (ETF) at the Savannah River Site near Aiken, SC processes low-level radioactive and chemically contaminated wastewater from nuclear material processing and Tank Farm operations. During fiscal year 1999, ETF treated 18 million gallons of wastewater through a series of process steps involving filtration, organic removal, reverse osmosis, and ion exchange. Recently, efforts were undertaken to downgrade the ETF from a Hazard Category three to a Radiological facility.

Since operations began in 1988, ETF had operated under the High Level Waste Tank Farm Authorization Basis as a Low Hazard/Category three facility. When the ETF operating contractor changed in 1997 the facility was analyzed, as a stand-alone facility, for hazard classification purposes. Detailed studies concluded that ETF was more appropriately classified as a Radiological Facility requiring an Auditable Safety Analysis (ASA). The facility began implementation of the ASA in December 1999. This paper reviews the process that was taken to determine the hazard classification and DOE's role in the development of the downgrade effort. Specific areas addressed include facility segmentation, analysis of expected waste streams, assumptions used to simplify inventory control, and radionuclide retention. It is hoped that this paper will assist others who are evaluating or in the process of downgrading facility hazard categorization.