



DIAL

Diagnostic Instrumentation & Analysis Laboratory
Mississippi State, MS 39762-5932

TVS Shakedown Test - WSRC & DIAL

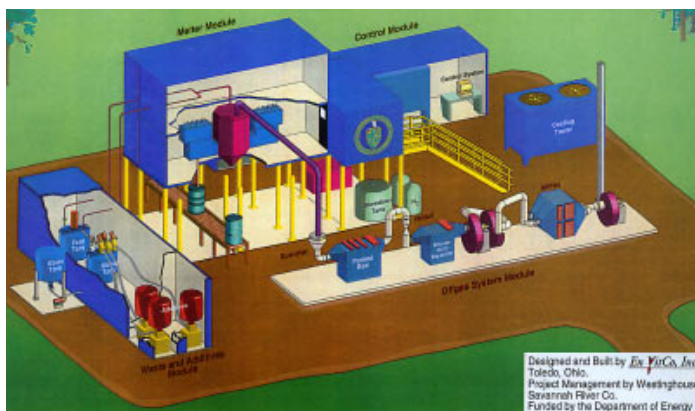
During the week of February 19, 1996, various DIAL diagnostic systems were employed, at the request of the Westinghouse Savannah River Company, to make measurements on the Transportable Vitrification System (TVS) currently located at Clemson University at a site adjacent to the Wildlife Environmental Toxicology (TIWET) facility in Pendleton, South Carolina. The Diagnostic Instrumentation and Analysis Laboratory (DIAL) at Mississippi State University (MSU) supported field demonstrations during the final checkout of the TVS at Clemson to establish operating parameters and identify potential problems.

The purpose of the TVS is to demonstrate a stabilization treatment process on an actual mixed hazardous and radioactive waste stream. The process encapsulates radioactive waste inside glass.

The TVS is a large scale, integrated and transportable vitrification system. The elements of the system are housed in modules, and the 150-ton system is transported on fifteen flatbed trucks. The melter is a refractory-lined, Joule-heated, cold top melter manufactured by EnVitco Inc. of Toledo, Ohio. A schematic of the TVS is shown in Figure 1.

The various instrumentation systems were transported to the TVS site in DIAL's mobile 18-wheel trailer (see Figure 2). This mobile laboratory also provided a base from which to operate the systems during the testing.

The primary objectives of these measurements were to: (a) characterize the gas stream at the measurement locations; (b) demonstrate the capability of the measurement techniques; (c) provide useful facility data; and (d) identify potential problems.



In addition, as part of DIAL's Field Operation task, a commercial chlorine analyzer was evaluated under the Field Applications, Coordination, Testing and Support (FACTS) program. One of the objectives of the FACTS program is to evaluate commercial technology for DOE applications.

Results of the measurements and testing are reported in a series of reports entitled *Transportable Vitrification System Shakedown Test, Westinghouse Savannah River Company, Diagnostic Instrumentation and Analysis Laboratory*. February 1996. DIAL 10575 Trip 96.1.

DIAL Trip 96-1.1. *Laser Doppler Velocimetry Measurements*. O. P. Norton.

DIAL Trip 96-1.2. *Multicolor Thermal Imaging Measurements*. C. B. Winstead.

DIAL Trip 96-1.3. *Laser-induced Breakdown Spectroscopy Measurements*. J. P. Singh, F. Y. Yueh.

DIAL Trip 96-1.4. *Optical Pyrometry Measurements*. D. L. Monts, P. R. Jang.

DIAL Trip 96-1.5. *FACTS Test of Commercial Chlorine Analyzer*. R. A. Green.

DIAL Trip 96-1.6. *Fourier Transform Infrared Spectroscopy Measurements*. J. S. Lindner.

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