

Personal Ice Cooling System (PICS)

(OST/TMS ID: 1898/ TMS Application ID: 1543)

The Personal Ice Cooling System (PICS) is a self-contained core body temperature control system that uses tap water ice as a coolant. The coolant is circulated through the suit by a rate adjustable, battery-powered pump. The suits are available as shirts as vests, in a variety of sizes. Water is frozen in bottles that are worn outside of Anti-Cs in a sealed, insulated bag. These frozen coolant bottles and the circulating pump are incorporated into the suits with a comfortable support harness system. The coolant is circulated through the suit via an umbilical cord with an Anti-Cs pass through connector that is connected to the tubing in the garment. This design allows for ease of changing the coolant when it has expired as well as allowing for the adjustment of cooling, while providing a barrier to the passing of contaminants to the worker. The rate adjustment, 'OFF-LO-HI,' allows the worker to adjust cooling based on work load or personal preference.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, Process Experimental Pilot Plant (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: June 1999

Technology User: INEEL

Deployment Value/Impact: A crew of six people used the Personal Ice Cooling System (PICS) in hot conditions to perform heavy work that included taking piping off walls, removing insulation, cutting tanks, etc. The area was contaminated with hazardous heavy metals such as lead, arsenic, and mercury. Workers remained in the work area twice as long as with the baseline suits. Fewer cool down breaks resulted in fewer PPE changes. Longer stay times resulted in approximately 75K in cost savings.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel.
208-526-6877

Vendor Company POC(s):

Kirk Dobbs (DELTA TEMAX, Inc.) - Pembroke, ON.
Tel. 613-735-3996

Major Developers:

DELTA TEMAX, Inc.

Vendor Company:

DELTA TEMAX, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Advanced Test Reactor) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (Test Cell C, Area 25) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (U-2bu crater, Area 2) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site (Building 779) in Golden, CO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Building 3019) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Fernald in Cincinnati, OH

Personal Ice Cooling System (PICS)

(OST/TMS ID: 1898/ TMS Application ID: 1563)

The Personal Ice Cooling System (PICS) is a self-contained core body temperature control system that uses tap water ice as a coolant. The coolant is circulated through the suit by a rate adjustable, battery-powered pump. The suits are available as shirts as vests, in a variety of sizes. Water is frozen in bottles that are worn outside of Anti-Cs in a sealed, insulated bag. These frozen coolant bottles and the circulating pump are incorporated into the suits with a comfortable support harness system. The coolant is circulated through the suit via an umbilical cord with an Anti-Cs pass through connector that is connected to the tubing in the garment. This design allows for ease of changing the coolant when it has expired as well as allowing for the adjustment of cooling, while providing a barrier to the passing of contaminants to the worker. The rate adjustment, 'OFF-LO-HI,' allows the worker to adjust cooling based on work load or personal preference.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, Advanced Test Reactor (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: September 1999 **Technology User:** INEEL

Deployment Value/Impact: Three Personal Ice Cooling Suits were used at the Advanced Test Reactor during routine maintenance during outage of the reactor. The suits allowed workers to remain in the area at least twice as long as with the baseline suits. The longer stay times and fewer changes into and out of the PICS resulted in reduced costs and accelerated schedules.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel.
208-526-6877

Vendor Company POC(s):

Kirk Dobbs (DELTA TEMAX, Inc.) - Pembroke, ON.
Tel. 613-735-3996

Major Developers:

DELTA TEMAX, Inc.

Vendor Company:

DELTA Temax, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Process Experimental Pilot Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (Test Cell C, Area 25) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (U-2bu crater, Area 2) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site (Building 779) in Golden, CO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Building 3019) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Fernald in Cincinnati, OH

Personal Ice Cooling System (PICS)

(OST/TMS ID: 1898/ TMS Application ID: 1689)

The Personal Ice Cooling System (PICS) is a self-contained core body temperature control system that uses tap water ice as a coolant. The coolant is circulated through the suit by a rate adjustable, battery-powered pump. The suits are available as shirts as vests, in a variety of sizes. Water is frozen in bottles that are worn outside of Anti-Cs in a sealed, insulated bag. These frozen coolant bottles and the circulating pump are incorporated into the suits with a comfortable support harness system. The coolant is circulated through the suit via an umbilical cord with an Anti-Cs pass through connector that is connected to the tubing in the garment. This design allows for ease of changing the coolant when it has expired as well as allowing for the adjustment of cooling, while providing a barrier to the passing of contaminants to the worker. The rate adjustment, 'OFF-LO-HI,' allows the worker to adjust cooling based on work load or personal preference.

DESCRIPTION OF THE DEPLOYMENT

Location:	Nevada Test Site, Test Cell C, Area 25 (Mercury, NV, United States)		
PBS Name:	Industrial Sites [NV214, 0226]		
Date of Deployment:	July 1999	Technology User:	IT Corporation & Bechtel Nevada
Deployment Value/Impact: The application consisted of performing sewage lagoon investigation tasks such as soil sampling, surveying, and equipment decontamination activities in field temperatures between 85 and 107 degrees F. The 2-liter ice bottles provided 30 and 45 minutes of operation if worn externally and internally, respectively. The overall results indicate improved worker comfort and productivity.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): David L. Hippensteel (DOE/Nevada) - North Las Vegas, NV. Tel. 702-295-1467		OST Program POC(s): Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715	
Technology User POC(s): Betty Chang (Bechtel Nevada) - North Las Vegas, NV. Tel. 702-295-2143		Vendor Company POC(s): Kirk Dobbs (DELTA TEMAX, Inc.) - Pembroke, ON. Tel. 613-735-3996	

Major Developers:
DELTA TEMAX, Inc.

Vendor Company:
DELTA TEMAX, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Process Experimental Pilot Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Advanced Test Reactor) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (U-2bu crater, Area 2) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site (Building 779) in Golden, CO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Building 3019) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Fernald in Cincinnati, OH

Personal Ice Cooling System (PICS)

(OST/TMS ID: 1898/ TMS Application ID: 1690)

The Personal Ice Cooling System (PICS) is a self-contained core body temperature control system that uses tap water ice as a coolant. The coolant is circulated through the suit by a rate adjustable, battery-powered pump. The suits are available as shirts as vests, in a variety of sizes. Water is frozen in bottles that are worn outside of Anti-Cs in a sealed, insulated bag. These frozen coolant bottles and the circulating pump are incorporated into the suits with a comfortable support harness system. The coolant is circulated through the suit via an umbilical cord with an Anti-Cs pass through connector that is connected to the tubing in the garment. This design allows for ease of changing the coolant when it has expired as well as allowing for the adjustment of cooling, while providing a barrier to the passing of contaminants to the worker. The rate adjustment, 'OFF-LO-HI,' allows the worker to adjust cooling based on work load or personal preference.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Nevada Test Site, U-2bu crater, Area 2 (Mercury, NV, United States)		
PBS Name:	Industrial Sites [NV214, 0226]		
Date of Deployment:	July 1999	Technology User:	Bechtel Nevada & IT Corporation
Deployment Value/Impact: The application consisted of performing closure activities such as excavation of mixed waste soils and construction of a water diversion berm in field temperatures between 83 and 97 degrees F. the 2-liter ice bottles provided 1 hour and 1 hour and 10 minutes of operation if worn externally and internally, respectively. The overall results indicate improved worker comfort and productivity.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): David L. Hippensteel (DOE/Nevada) - North Las Vegas, NV. Tel. 702-295-1467		OST Program POC(s): Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715	
Technology User POC(s): Betty Chang (Bechtel Nevada) - North Las Vegas, NV. Tel. 702-295-2143		Vendor Company POC(s): Kirk Dobbs (DELTA TEMAX, Inc.) - Pembroke, ON. Tel. 613-735-3996	

Major Developers:

DELTA TEMAX, Inc.

Vendor Company:

DELTA TEMAX, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Process Experimental Pilot Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Advanced Test Reactor) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (Test Cell C, Area 25) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site (Building 779) in Golden, CO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Building 3019) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Fernald in Cincinnati, OH

Personal Ice Cooling System (PICS)

(OST/TMS ID: 1898/ TMS Application ID: 1741)

The Personal Ice Cooling System (PICS) is a self-contained core body temperature control system that uses tap water ice as a coolant. The coolant is circulated through the suit by a rate adjustable, battery-powered pump. The suits are available as shirts as vests, in a variety of sizes. Water is frozen in bottles that are worn outside of Anti-Cs in a sealed, insulated bag. These frozen coolant bottles and the circulating pump are incorporated into the suits with a comfortable support harness system. The coolant is circulated through the suit via an umbilical cord with an Anti-Cs pass through connector that is connected to the tubing in the garment. This design allows for ease of changing the coolant when it has expired as well as allowing for the adjustment of cooling, while providing a barrier to the passing of contaminants to the worker. The rate adjustment, 'OFF-LO-HI,' allows the worker to adjust cooling based on work load or personal preference.

DESCRIPTION OF THE DEPLOYMENT

Location: Rocky Flats Environmental Technology Site, Building 779 (Golden, CO, United States)

PBS Name: Building 779 Cluster Closure Project [RF022, 0586]

Date of Deployment: September 1999

Technology User: Tenera

Deployment Value/Impact: Ten PICS units were deployed in September 1999 in building 779 on a hydrolasing project. The hydrolasing project was completed and the PICS provided improved worker productivity by reducing fatigue and stress due to heat. The PICS units were received from the Fernald ASTD project and are currently being evaluated for other uses at Rocky Flats.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Gary A. Huffman (DOE-RF) - Golden, CO. Tel. 303-966-7490

OST Program POC(s):

Steven J. Bossart (US Department of Energy, National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4643

Technology User POC(s):

Peggy Schreckengast (Tenera) - Golden, CO. Tel. 303-966-6790

Vendor Company POC(s):

Kirk Dobbs (DELTA TEMAX, Inc.) - Pembroke, ON. Tel. 613-735-3996

Major Developers:

DELTA TEMAX, Inc.

Vendor Company:

DELTA TEMAX, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Process Experimental Pilot Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Advanced Test Reactor) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (Test Cell C, Area 25) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (U-2bu crater, Area 2) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Building 3019) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Fernald in Cincinnati, OH

Personal Ice Cooling System (PICS)

(OST/TMS ID: 1898/ TMS Application ID: 1813)

The Personal Ice Cooling System (PICS) is a self-contained core body temperature control system that uses tap water ice as a coolant. The coolant is circulated through the suit by a rate adjustable, battery-powered pump. The suits are available as shirts as vests, in a variety of sizes. Water is frozen in bottles that are worn outside of Anti-Cs in a sealed, insulated bag. These frozen coolant bottles and the circulating pump are incorporated into the suits with a comfortable support harness system. The coolant is circulated through the suit via an umbilical cord with an Anti-Cs pass through connector that is connected to the tubing in the garment. This design allows for ease of changing the coolant when it has expired as well as allowing for the adjustment of cooling, while providing a barrier to the passing of contaminants to the worker. The rate adjustment, 'OFF-LO-HI,' allows the worker to adjust cooling based on work load or personal preference.]

DESCRIPTION OF THE DEPLOYMENT

Location: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), Building 3019 (Oak Ridge, TN, United States)

PBS Name: ORNL Decontamination & Decommissioning - Def [OR-331, 0097]

Date of Deployment: June 1999

Technology User: Lockheed Martin Energy Research

Deployment Value/Impact: The U233 Safe Storage Program and specifically the Inspection and Repackaging Project (IRP) at ORNL utilized the Cool Suits in the Penthouse area of Building 3019. The IRP is tasked with accessing, inspecting, and repackaging (as necessary) the canisters of U233 stored in the Building 3019 tube vaults. The Penthouse area, where the tube vaults are located is not air-conditioned due to the need for contamination control. Thus, during the late spring, summer, and early fall, the combination of temperature and humidity can severely limit the work period. Ice vests have been used in the past but since the Penthouse is a contamination zone, their use is not convenient, often to the point where the workers refused to use them. The PICS allowed for easy change out of the cooling media and thus enhanced safety and extend work periods in a convenient manner.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Harold Clark (DOE/OR) - Oak Ridge, TN. Tel. 865-576-0823

OST Program POC(s):

Steven J. Bossart (US Department of Energy, National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4643

Technology User POC(s):

Thomas B. Conley (Lockheed Martin Energy Research - Oak Ridge National Laboratory) - Oak Ridge, TN. Tel. 865-241-1825

Vendor Company POC(s):

Kirk Dobbs (DELTA TEMAX, Inc.) - Pembroke, ON. Tel. 613-735-3996

Major Developers:

DELTA TEMAX, Inc.

Vendor Company:

DELTA TEMAX, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Process Experimental Pilot Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Advanced Test Reactor) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (Test Cell C, Area 25) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Nevada Test Site (U-2bu crater, Area 2) in Mercury, NV
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site (Building 779) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Fernald in Cincinnati, OH

Position Sensitive Radiation Monitoring (Surface Contamination Monitor)

(OST/TMS ID: 1942/ TMS Application ID: 1811)

The SCM/SIMS is a motorized characterization and data analysis system for surveying contaminated floor and wall surfaces. Utilizing a position-sensitive, gas-proportional counter (PSPC), 400 radiation measurements are taken in an area of 1 sq. meter. Survey data and sample location are logged electronically as well as displayed on an LCD screen for the operator. The data from each survey is analyzed by the SIMS to obtain visual representations of the surfaces surveyed, to generate a data report detailing the actual numerical results, and to overlay the data into a CAD drawing.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Rocky Flats Environmental Technology Site, Building 779 (Golden, CO, United States)
PBS Name:	Building 779 Cluster Closure Project [RF022, 0586]
Date of Deployment:	February 1999
Technology User:	RMRS and the vendor/service company Millennium Services, Inc.
Deployment Value/Impact: The SCM/SIMS was used to conduct final release surveys in Building 779 and associated area. Over 60,000 square feet of surface was characterized for low-level TRU alpha including floors, walls, and ceilings. SCM/SIMS provided real-time characterization and reporting capabilities not available with baseline methods.	
Vendor Name for this Technology:	Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)
Point of Contact:	
User Program POC(s): Gary A. Huffman (DOE-RF) - Golden, CO. Tel. 303-966-7490	OST Program POC(s): John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217
Technology User POC(s): Mike Gruby (GTS Duratek/ Rocky Mt. Remediation Services) - Golden, CO. Tel. 303-966-2863	Vendor Company POC(s): Robert Leddy (Millennium Services, Inc.) - Woodstock, GA. Tel. 770-516-7669

Major Developers:

Shonka Research Associates

Vendor Company:

Millennium Services, Inc. (www.millenniumservicesinc.com)

Other Deployments:

- Deployed (type: DOE) in FY 1997 at Hanford (105 C-reactor) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Argonne National Lab (301 Hot Cell facility) in Argonne, IL
- Deployed (type: Non-DOE) in FY 1997 at BONUS Research Reactor in Rincon, PR
- Deployed (type: DOE) in FY 1997 at Idaho National Engineering and Environmental Laboratory (Air Support Building) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1997 at Oak Ridge Institute of Science and Education (N/A) in Oak Ridge, TN
- Deployed (type: Non-DOE) in FY 1998 at Connecticut Yankee Nuclear Power Station (Turbine building and exterior paved surfaces) in East Hampton, CT
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 123) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Hanford (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Hanford (108-F Facility) in Richland, WA
- Deployed (type: DOE) in FY 2000 at Nevada Test Site (Test Pad C) in Mercury, NV

ROTO PEEN Scaler and VAC PAC System

(OST/TMS ID: 1943/ TMS Application ID: 1801)

Pentek, Inc. milling technology is a method for removing contaminated coatings on concrete and steel located on floors, walls, ceilings, and structural components. The system uses a hand-held ROTO-PEEN scaler with localized exhaust. The scaler is equipped with 3M Heavy Duty Roto Peen Flaps, each studded with rows of tough tungsten carbide cutters and mounted on a rotating hub. The debris removed by the ROTO-PEEN scaler is simultaneously collected in a VAC-PACR, High Performance HEPA Vacuum/Drumming System.

DESCRIPTION OF THE DEPLOYMENT

Location:	Savannah River Site, RBOF Pad (Aiken, SC, United States)		
PBS Name:	RBOF Deactivation Project [SR-FA13, 0510]		
Date of Deployment:	March 1999	Technology User:	WSRC; Facility Decommissioning Division
Deployment Value/Impact:	The Rotopeen Scaler with VACPAC system was used to decontaminate contaminated areas on a metal trailer at the RBOF Pad. The areas were decontaminated to free release levels. Benefits included not having to use respiratory protection.		
Vendor Name for this Technology:	Same as primary Technology Title		
Point of Contact:			
User Program POC(s):	Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617	OST Program POC(s):	John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217
Technology User POC(s):	Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771	Vendor Company POC(s):	Linda Lukart-Ewansik (Pentek, Inc.) - Coraopolis, PA. Tel. 412-262-0725

Major Developers:

Pentek, Inc.

Vendor Company:

Pentek, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Savannah River (SRTC [773-A]) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River (Tanks 15, 17, 20 & 40) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Heavy Water Test Cooling Reactor) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (SRTC) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105-C) in Aiken, SC

ROTO PEEN Scaler and VAC PAC System

(OST/TMS ID: 1943/ TMS Application ID: 1802)

Pentek, Inc. milling technology is a method for removing contaminated coatings on concrete and steel located on floors, walls, ceilings, and structural components. The system uses a hand-held ROTO-PEEN scaler with localized exhaust. The scaler is equipped with 3M Heavy Duty Roto Peen Flaps, each studded with rows of tough tungsten carbide cutters and mounted on a rotating hub. The debris removed by the ROTO-PEEN scaler is simultaneously collected in a VAC-PACR, High Performance HEPA Vacuum/Drumming System.

DESCRIPTION OF THE DEPLOYMENT

Location: Savannah River Site, SRTC (Aiken, SC, United States)

PBS Name: Pollution Prevention [SR-SW07, 0050]

Date of Deployment: August 1999

Technology User: WSRC; Facility
Decommissioning Division

Deployment Value/Impact: The Rotopeen Scaler with VACPAC system was used to decontaminate large concrete areas at SRTC, rolling back the contaminated areas to clean areas. Benefits included engineering control and no respiratory protection required during operation. It also eliminated the generation of waste and protective clothing to enter the areas, as well as decreasing the man-hours necessary to maintain the posted areas, helping to decrease costs.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Martin Salazar (DOE Savannah River) - Aiken, SC.
Tel. 803-557-3617

OST Program POC(s):

John Duda (DOE/NETL) - Morgantown, WV. Tel.
304-285-4217

Technology User POC(s):

Heatherly Dukes (Westinghouse Savannah River
Company) - Aiken, SC. Tel. 803-725-3771

Vendor Company POC(s):

Linda Lukart-Ewansik (Pentek, Inc.) - Coraopolis,
PA. Tel. 412-262-0725

Major Developers:

Pentek, Inc.

Vendor Company:

Pentek, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Savannah River (SRTC [773-A]) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River (Tanks 15, 17, 20 & 40) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Heavy Water Test Cooling Reactor) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (RBOF Pad) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105-C) in Aiken, SC

ROTO PEEN Scaler and VAC PAC System

(OST/TMS ID: 1943/ TMS Application ID: 1804)

Pentek, Inc. milling technology is a method for removing contaminated coatings on concrete and steel located on floors, walls, ceilings, and structural components. The system uses a hand-held ROTO-PEEN scaler with localized exhaust. The scaler is equipped with 3M Heavy Duty Roto Peen Flaps, each studded with rows of tough tungsten carbide cutters and mounted on a rotating hub. The debris removed by the ROTO-PEEN scaler is simultaneously collected in a VAC-PACR, High Performance HEPA Vacuum/Drumming System.

DESCRIPTION OF THE DEPLOYMENT

Location:	Savannah River Site, 105-C (Aiken, SC, United States)		
PBS Name:	C Reactor Deactivation Project [SR-FA09, 0506] Pollution Prevention [SR-SW07, 0050]		
Date of Deployment:	May 1999	Technology User:	WSRC; Facility Decommissioning Division
Deployment Value/Impact:	The Rotopeen Scaler with VACPAC System was used to decontaminate a contaminated concrete floor in the 105-C Building. The Rotopeen removed only the contaminated top coating without removing the concrete, deconning the floor to a clean area. Benefits included Engineering Control and no respiratory protection required during use.		
Vendor Name for this Technology:	Same as primary Technology Title		
Point of Contact:			
User Program POC(s):	Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617	OST Program POC(s):	John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217
Technology User POC(s):	Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771	Vendor Company POC(s):	Linda Lukart-Ewansik (Pentek, Inc.) - Coraopolis, PA. Tel. 412-262-0725

Major Developers:

Pentek, Inc.

Vendor Company:

Pentek, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Savannah River (SRTC [773-A]) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River (Tanks 15, 17, 20 & 40) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Heavy Water Test Cooling Reactor) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (RBOF Pad) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (SRTC) in Aiken, SC

Sealed-Seam Sack Suit

(OST/TMS ID: 1954/ TMS Application ID: 1633)

Following demonstration (FY1997) of six innovative and disposable personal protective garments, the Kappler Pro/Shield Suit and Comfort Guard 150 Suits were selected for subsequent use at Hanford's reactor interim safe storage projects. The Kappler Pro/Shield Suit is constructed of white, nonwoven laminated point-bonded material, and the Comfort Guard 150 Suit is constructed of a yellow, nonwoven material. Each suit provides improved durability for physical and temperature effects, flexibility, and compatibility with other equipment.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Hanford Site, F Reactor (Richland, WA, United States)		
PBS Name:	Decontamination and Decommissioning [RL-ER06, 0420]		
Date of Deployment:	October 1998	Technology User:	Bechtel Hanford, Inc.
Deployment Value/Impact: The benefit of using the disposable suits is that the chance of skin contamination is reduced due to garment reuse (laundering is not 100% successful at removing all radiation), the cost of disposable suits is less, and less handling is required of disposable suits which also reduces the risk of worker exposure.			
Vendor Name for this Technology:	Kappler Pro/Shield Suit and Comfort Guard 150 Suits		
Point of Contact:			
User Program POC(s): Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029		OST Program POC(s): John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217	
Technology User POC(s): Kim Kogler (Bechtel Hanford Inc.) - Richland, WA. Tel. 509-372-9294		Vendor Company POC(s): Rick Rehn (L. L. Safety West) - Ritzville, WA. Tel. 509-659-1811 Jack Welliver (G/O Corp.) - Slidell, LA. Tel. 504-847-0564	

Major Developers:
Kappler Corporation, USA

Vendor Company:
Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Hanford Site (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1997 at Hanford (Site-wide) in Richland, WA

Sealed-Seam Sack Suit

(OST/TMS ID: 1954/ TMS Application ID: 1838)

Following demonstration (FY1997) of six innovative and disposable personal protective garments, the Kappler Pro/Shield Suit and Comfort Guard 150 Suits were selected for subsequent use at Hanford's reactor interim safe storage projects. The Kappler Pro/Shield Suit is constructed of white, nonwoven laminated point-bonded material, and the Comfort Guard 150 Suit is constructed of a yellow, nonwoven material. Each suit provides improved durability for physical and temperature effects, flexibility, and compatibility with other equipment.

DESCRIPTION OF THE DEPLOYMENT

Location: Hanford Site, DR Reactor (Richland, WA, United States)

PBS Name: Decontamination and Decommissioning [RL-ER06, 0420]

Date of Deployment: October 1998 **Technology User:** Bechtel Hanford, Inc.

Deployment Value/Impact: The benefit of using the disposable suits is that the chance of skin contamination is reduced due to garment reuse (laundering is not 100% successful at removing all radiation), the cost of disposable suits is less, and less handling is required of disposable suits which also reduces the risk of worker exposure.

Vendor Name for this Technology: Kappler Pro/Shield Suit and Comfort Guard 150 Suits

Point of Contact:

User Program POC(s):

Dennis A. Brown (DOE-Richland) - Richland, WA.
Tel. 509-372-4030

Technology User POC(s):

Kim Koegler (Bechtel Hanford Inc.) - Richland, WA.
Tel. 509-372-9294

OST Program POC(s):

John Duda (DOE/NETL) - Morgantown, WV. Tel.
304-285-4217

Vendor Company POC(s):

Rick Rehn (L. L. Safety West) - Ritzville, WA. Tel.
509-659-1811
Jack Welliver (G/O Corp.) - Slidell, LA. Tel. 504-847-
0564

Major Developers:

Kappler Corporation, USA

Vendor Company:

Supplied by G/O Company and L.L. Safety West

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Hanford Site (F Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1997 at Hanford (Site-wide) in Richland, WA

NDA Support of the CAO's Performance Demonstration Program

(OST/TMS ID: 2017/ TMS Application ID: 1521)

The purpose of this task is to fabricate Nondestructive Assay (NDA) radioactive standards for the Carlsbad Area Office's Transuranic Waste Characterization Nondestructive Assay Performance Demonstration Program. This program allows evaluation of the NDA measurement systems for capability to determine the TRU content of TRU waste containers. The fabrication task includes obtaining and characterizing plutonium, americium, and uranium materials; blending these materials with an inert matrix material; supplying stainless steel containers; adding the blended matrix material to stainless steel cylinders; welding endcaps on the containers; checking the containers for leaks; and packaging and shipping the containers to eight DOE receiving sites. The certification of these standards Working Reference Materials (WRM) includes rigorous quality assurance documentation, traceability to National Certified or Reference Materials, and detailed records and reports.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Los Alamos National Laboratory (Los Alamos, NM, United States)		
PBS Name:	LANL Waste Management - Newly Generated Waste [AL012, 0471]		
Date of Deployment:	October 1998	Technology User:	LANL
Deployment Value/Impact: LANL received the 2A, 2B, and 2C standard surrogates in 1999. These standards are used to test the sensitivity of their measurement systems to variations in particle size and isotopes.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101		OST Program POC(s): Sandra L. Mecklenburg (LANL) - Los Alamos, NM. Tel. 505-665-7182 Bill Owca (Department of Energy - Idaho) - Idaho Falls, ID. Tel. 208-526-1983 Whitney St. Michel (INEEL-MWFA) - Idaho Falls, ID. Tel. 208-526-3206	
Technology User POC(s): Saundra Wander (LANL) - Los Alamos, NM. Tel. 505-667-8532		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:

Los Alamos National Laboratory

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site in Richland, WA
- Deployed (type: DOE) in FY 1999 at Hanford Site in Richland, WA
- Deployed (type: DOE) in FY 1999 at Lawrence Livermore National Laboratory - Main Site in Livermore, CA
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site in Golden, CO
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site in Golden, CO
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site in Golden, CO

NDA Support of the CAO's Performance Demonstration Program

(OST/TMS ID: 2017/ TMS Application ID: 1522)

The purpose of this task is to fabricate Nondestructive Assay (NDA) radioactive standards for the Carlsbad Area Office's Transuranic Waste Characterization Nondestructive Assay Performance Demonstration Program. This program allows evaluation of the NDA measurement systems for capability to determine the TRU content of TRU waste containers. The fabrication task includes obtaining and characterizing plutonium, americium, and uranium materials; blending these materials with an inert matrix material; supplying stainless steel containers; adding the blended matrix material to stainless steel cylinders; welding endcaps on the containers; checking the containers for leaks; and packaging and shipping the containers to eight DOE receiving sites. The certification of these standards Working Reference Materials (WRM) includes rigorous quality assurance documentation, traceability to National Certified or Reference Materials, and detailed records and reports.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Lawrence Livermore National Laboratory - Main Site (Livermore, CA, United States)		
PBS Name:	LLNL Base Program [OK-021, 0462]		
Date of Deployment:	June 1999	Technology User:	LLNL
Deployment Value/Impact: LLNL received the 2A and 2B standards in 1999. These standards are used to test the sensitivity of their measurement systems to variations in particle size and isotopes.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Kim V. Abbott (DOE-Oakland) - Oakland, CA. Tel. 510-637-1501 Kem Hainebach (LLNL) - Livermore, CA. Tel. 510-422-4572		OST Program POC(s): Sandra L. Mecklenburg (LANL) - Los Alamos, NM. Tel. 505-665-7182 Bill Owca (Department of Energy - Idaho) - Idaho Falls, ID. Tel. 208-526-1983 Whitney St. Michel (INEEL-MWFA) - Idaho Falls, ID. Tel. 208-526-3206	
Technology User POC(s): No Points of Contact are listed.		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:
Los Alamos National Laboratory

Vendor Company:
Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site in Richland, WA
- Deployed (type: DOE) in FY 1999 at Hanford Site in Richland, WA
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site in Golden, CO
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site in Golden, CO
- Deployed (type: DOE) in FY 1999 at Rocky Flats Environmental Technology Site in Golden, CO

Houdini-II Remotely Operated Vehicle System

(OST/TMS ID: 2085/ TMS Application ID: 1231)

The Houdini-II vehicle system is the second generation of the Houdini remotely operated vehicle system. The containment structure and the vehicle have undergone extensive redesigns to eliminate many of the reliability and maintenance issues associated with the original unit. Houdini-II is an approximately 4 foot by 5 foot tethered, tracked vehicle weighing approximately 1000 pounds. The unit is equipped with a plow blade and can be operated like a mini bulldozer. It also has on board a remotely controlled arm that allows the vehicle to reach up to about 5 feet. The arm can lift up to 250 pounds. Houdini-II has the capability to fold the chassis like a collapsing parallelogram and lay the arm down on the chassis so that the vehicle can be lowered through a hole as small as 24 inches in diameter. The vehicle is a multi-purpose remote work platform that can be used for many decontamination and decommissioning tasks and for operations in large underground storage tanks.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), Tank W-7 in the South Tank Farm of the Gunite & Associated Tanks (GAAT) (Oak Ridge, TN, United States)
PBS Name:	ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]
Date of Deployment:	January 1999
Technology User:	Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company LLC and The Providence Group
Deployment Value/Impact: Under the GAAT Remediation Project, Oak Ridge is demonstrating the ability to remove sufficient waste from tanks to allow the tanks to be closed and enable progress on the restoration of the Bethel Valley Watershed. The Houdini-I and Houdini-II vehicles provide remote retrieval capability. The original Houdini vehicle and associated technologies removed sludge and debris from two 85,000 gallon tanks and one 170,000 gallon tank. The Houdini-II vehicle replaced the original system in January 1999, and is scheduled to complete the remaining waste retrieval operations on Tank W-7, W-8, W-9, and W-10.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184	OST Program POC(s): Barry L. Burks (The Providence Group) - Knoxville, TN. Tel. 423-927-5519 John DeGregory (DOE) - Germantown, MD. Tel. 301- 903-7949 Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509 372-4546 Linton W. Yarbrough (Department of Energy, Albuquerque) - Albuquerque, NM. Tel. 505-845-6569
Technology User POC(s): S. Dirk Van Hoesen (Lockheed Martin Energy Research, Inc.) - Oak Ridge, TN. Tel. 423-574-7264	Vendor Company POC(s): Tim Denmeade (RedZone Robotics, Inc.) - Pittsburgh, PA. Tel. 412-765-3064

Major Developers:

- Oak Ridge National Laboratory, Robotics & Process Systems Division
- RedZone Robotics, Inc.
- The Providence Group

Vendor Company:

RedZone Robotics, Inc. (<http://www.redzone.com>)

Other Deployments:

This is the first deployment of this technology.

Remotely Operated Vehicle (ROV) System for Horizontal Tanks

(OST/TMS ID: 2086/ TMS Application ID: 924)

Many waste characterization and retrieval tasks can be performed remotely using a mobile vehicle system with on-board manipulator, cameras, and lights. Robotics Crosscutting Program developed a general purpose remotely-operated work platform capable of deployment through 18-inch risers for operation in horizontal waste storage tanks. The system also included a tank riser interface and containment system and an optional waste dislodging and conveyance system. The base vehicle is an adaptation of the Scarab-IIA vehicle built by ROV Technologies, Inc. for reactor maintenance. The resulting system has been referred to as the Scarab-III.

DESCRIPTION OF THE DEPLOYMENT

Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), Federal Facility Agreement (FFA) Tanks (Oak Ridge, TN, United States)		
PBS Name:	ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]		
Date of Deployment:	May 1999	Technology User:	The Providence Group and Solutions to Environment Problems, Inc., under contract to M&I Bechtel Jacobs Company LLC
Deployment Value/Impact: The Scarab-III Remotely Operated Vehicle System was deployed in Tank T-14 both to inspect the tank interior and to collect solid samples from areas of the tank that were previously inaccessible using conventional sampling methods. The FFA Tanks Program will use the information collected during this deployment to define the most appropriate methods for removing waste from the tank.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184		OST Program POC(s): John DeGregory (DOE) - Germantown, MD. Tel. 301-903-7949 Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546 Linton W. Yarbrough (Department of Energy, Albuquerque) - Albuquerque, NM. Tel. 505-845-6569	
Technology User POC(s): Barry L. Burks (The Providence Group) - Knoxville, TN. Tel. 423-927-5519		Vendor Company POC(s): Jack Judge (Rov Technologies, Inc.) - Vernon, VT. Tel. 802-254-9353	

Major Developers:

- Oak Ridge National Laboratory, Robotics & Process Systems Division
- ROV Technologies Inc.
- The Providence Group

Vendor Company:

ROV Technologies, Inc. (<http://rovtech.com>)

Other Deployments:

This is the first deployment of this technology.

Pipe Cutting and Isolation System

(OST/TMS ID: 2093/ TMS Application ID: 1450)

The Pipe Cutting and Isolation System is comprised of three individual tools, the Pipe Cutting Tool, the Pipe Cleaning Tool, and the Pipe Capping Tool. The Pipe Cutting Tool consists of a standard industrial band saw. It attaches to the MLDUA (TMS 85) via the Gripper End Effector. The robotic arm moves the blade through the pipe. The Pipe Cleaning Tool is a standard industrial drill body equipped with a wire brush wheel. Again, this tool has been modified to attach to the MLDUA's Gripper End Effector. The Pipe Capping Tool is a sealant filled cup also adapted for application using the MLDUA. These tools were developed to sequentially cut, clean, and cap pipes in the Gunite and Associated Tanks (GAAT) at the Oak Ridge Reservation to isolate the tanks from the environment.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT W-10: Pipe Cutting (Oak Ridge, TN, United States)		
PBS Name:	ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]		
Date of Deployment:	May 1999	Technology User:	Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company
Deployment Value/Impact: During the week of May 15, 1999, the pipe-cutting tool was operated in GAAT W-10. Two separate vertical pipe-cutting actions were completed, one on a 3-inch diameter pipe containing a concentric 1-inch diameter pipe and a second cut on a 2-inch diameter pipe.			
Vendor Name for this Technology:	Pipe Cutting Tool		
Point of Contact:			
User Program POC(s): Benjamin E. Lewis (Lockheed Martin Energy Research Corporation) - Oak Ridge, TN. Tel. 423-574-4091 Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184		OST Program POC(s): Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546	
Technology User POC(s): Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:
Lockheed Martin Energy Systems, Inc.

Vendor Company:
Vendor Not Applicable)

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT W-7: Pipe Capping) in Oak Ridge, TN
- Deployed in FY 1998 at Oak Ridge (GAAT W-6) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT W-7: Pipe Cutting) in Oak Ridge, TN

Pipe Cutting and Isolation System

(OST/TMS ID: 2093/ TMS Application ID: 1729)

The Pipe Cutting and Isolation System is comprised of three individual tools, the Pipe Cutting Tool, the Pipe Cleaning Tool, and the Pipe Capping Tool. The Pipe Cutting Tool consists of a standard industrial band saw. It attaches to the MLDUA (TMS 85) via the Gripper End Effector. The robotic arm moves the blade through the pipe. The Pipe Cleaning Tool is a standard industrial drill body equipped with a wire brush wheel. Again, this tool has been modified to attach to the MLDUA's Gripper End Effector. The Pipe Capping Tool is a sealant filled cup also adapted for application using the MLDUA. These tools were developed to sequentially cut, clean, and cap pipes in the Gunite and Associated Tanks (GAAT) at the Oak Ridge Reservation to isolate the tanks from the environment.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT W-7: Pipe Cutting (Oak Ridge, TN, United States)		
PBS Name:	ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]		
Date of Deployment:	October 1998	Technology User:	Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company
Deployment Value/Impact: The pipe cutting tool was successfully deployed and cut five pipes.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184		OST Program POC(s): Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546	
Technology User POC(s): Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:
Lockheed Martin Energy Systems, Inc.

Vendor Company:
Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT W-7: Pipe Capping) in Oak Ridge, TN
- Deployed in FY 1998 at Oak Ridge (GAAT W-6) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT W-10: Pipe Cutting) in Oak Ridge, TN

Remote Control Concrete Demolition System

(OST/TMS ID: 2100/ TMS Application ID: 1534)

BROKK BM 150, manufactured by Holmhed Systems AB of Sweden and supplied by Duane Equipment Corp., uses a remote operated articulated hydraulic boom with various tool head attachments to perform the work. The machine is designed primarily to drive a hammer and has a reach of fifteen feet. The BROKK can be operated by someone 400 feet away or in a different room with a TV monitor. The machine can be operated up to a 30 degree gradient. The unit requires a 480 volt, 50 amp circuit for its power source. The BROKK supports a variety of demolition end effectors including; a hydraulic hammer that operates at 600 foot pounds and has an output of 1,000 to 1,500 beats per minute, an excavating bucket with a capacity of ¼ cubic yards, a concrete crusher and a La Bounty shear.

DESCRIPTION OF THE DEPLOYMENT

Location: Argonne National Laboratory - East, Chicago Pile 5 (Argonne, IL, United States)

PBS Name: ANL-E Decontamination and Decommissioning Actions [CH-ANLEDD, 0003]

Date of Deployment: April 1999

Technology User: Argonne National Laboratory

Deployment Value/Impact: The BROKK Remote Control Concrete Demolition System was used with two attachments - a hydraulic hammer and a bucket - to break apart the high density concrete bioshield around the CP-5 reactor and load the concrete into bins for eventual transport to Hanford for disposal. The walls of the bio-shield were constructed of high-density concrete with metal stampings as the main aggregate component. The bioshield was 15-ft-high, 18-ft-in-diameter, and 4-ft-thick. Remote application of the BROKK reduced worker exposure and PPE requirements during D&D. The BROKK was successful in accelerating schedule and reducing the cost of the D&D work.

Vendor Name for this Technology: BROKK BM 150

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ed Wiese (Argonne National Laboratory) -
Argonne, IL. Tel. 630-252-7983

Vendor Company POC(s):

Toby Duane (Duane Equipment Corporation) -
Braintree, MA. Tel. 888-273-2511

Major Developers:

Manufactured by Holmhed Systems AB of Sweden

Vendor Company:

Duane Equipment

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - East (Chicago Pile 5 Reactor Facility Hot Cells) in Argonne, IL
- Deployed (type: DOE) in FY 1998 at Argonne National Lab-East (CP-5 Reactor Facility) in Argonne, IL

Remote Control Concrete Demolition System

(OST/TMS ID: 2100/ TMS Application ID: 1546)

BROKK BM 150, manufactured by Holmhed Systems AB of Sweden and supplied by Duane Equipment Corp., uses a remote operated articulated hydraulic boom with various tool head attachments to perform the work. The machine is designed primarily to drive a hammer and has a reach of fifteen feet. The BROKK can be operated by someone 400 feet away or in a different room with a TV monitor. The machine can be operated up to a 30 degree gradient. The unit requires a 480 volt, 50 amp circuit for its power source. The BROKK supports a variety of demolition end effectors including; a hydraulic hammer that operates at 600 foot pounds and has an output of 1,000 to 1,500 beats per minute, an excavating bucket with a capacity of ¼ cubic yards, a concrete crusher and a La Bounty shear.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, Security Training Facility (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: June 1999

Technology User: INEEL

Deployment Value/Impact: The BROKK Remote Control Concrete Demolition System was used with a shear attachment to cut piping covering an entire wall in the building. The BROKK also made two holes through cast iron and concrete plates in the facilities basement. The BROKK was operated by remote control, allowing the operator to be at a safe distance from falling debris. Work time is less than half that of most manual tools, reducing cost, schedule, and worker radiation exposure. The BROKK saved thousands of dollars compared to baseline technologies already being used at STF.

Vendor Name for this Technology: BROKK BM 250

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel.
208-526-6877

Vendor Company POC(s):

No Points of Contact are listed.

Major Developers:

Manufactured by Holmhed Systems AB of Sweden

Vendor Company:

North American Sales, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - East (Chicago Pile 5) in Argonne, IL
- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - East (Chicago Pile 5 Reactor Facility Hot Cells) in Argonne, IL
- Deployed (type: DOE) in FY 1998 at Argonne National Lab-East (CP-5 Reactor Facility) in Argonne, IL

Remote Control Concrete Demolition System

(OST/TMS ID: 2100/ TMS Application ID: 1806)

BROKK BM 150, manufactured by Holmhed Systems AB of Sweden and supplied by Duane Equipment Corp., uses a remote operated articulated hydraulic boom with various tool head attachments to perform the work. The machine is designed primarily to drive a hammer and has a reach of fifteen feet. The BROKK can be operated by someone 400 feet away or in a different room with a TV monitor. The machine can be operated up to a 30 degree gradient. The unit requires a 480 volt, 50 amp circuit for its power source. The BROKK supports a variety of demolition end effectors including; a hydraulic hammer that operates at 600 foot pounds and has an output of 1,000 to 1,500 beats per minute, an excavating bucket with a capacity of ¼ cubic yards, a concrete crusher and a La Bounty shear.

DESCRIPTION OF THE DEPLOYMENT

Location: Argonne National Laboratory - East, Chicago Pile 5 Reactor Facility Hot Cells (Argonne, IL, United States)

PBS Name: ANL-E Decontamination and Decommissioning Actions [CH-ANLEDD, 0003]

Date of Deployment: August 1999 **Technology User:** National Surface Cleaning

Deployment Value/Impact: Following dismantlement activities of the CP-5 bioshield and reactor components in April 1999, the BROKK was deployed in a separate wing of the CP-5 facility to demolish the Hot Cell facility. The remote capabilities of the BROKK reduced worker exposure and PPE requirements during D&D. In addition, the BROKK accelerated schedules and reduced the cost of the D&D work.

Vendor Name for this Technology: BROKK BM 250

Point of Contact:

User Program POC(s):

John Loomis (DOE/CH) - Argonne, IL. Tel. 630-252-1562

Technology User POC(s):

Doug Weber (National Surface Cleaning) - Chicago, IL. Tel. 630-972-1375
Ed Wiese (Argonne National Laboratory) - Argonne, IL. Tel. 630-252-7983

OST Program POC(s):

Steven J. Bossart (US Department of Energy, National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4643

Vendor Company POC(s):

Toby Duane (Duane Equipment Corporation) - Braintree, MA. Tel. 888-273-2511

Major Developers:

Manufactured by Holmhed Systems AB of Sweden

Vendor Company:

North American Sales, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - East (Chicago Pile 5) in Argonne, IL
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Argonne National Lab-East (CP-5 Reactor Facility) in Argonne, IL

Advanced Tensiometer - Integrated Geophysical Characterization

(OST/TMS ID: 2122/ TMS Application ID: 1356)

The Advanced Tensiometer is an instrument that measures how tightly water is held to soil in the unsaturated zone, a region that extends from the earth's surface to the aquifer. The Advanced Tensiometer's breakthrough design helps investigators determine the direction and rate of water movement at depths and with accuracies not possible before, ushering in a new era for monitoring waste disposal sites, safeguarding drinking water supplies, and controlling agricultural irrigation systems.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Savannah River Site, E-Area Low-level Radioactive Waste Trenches (Aiken, SC, United States)
PBS Name:	Low Level Waste Project [SR-SW04, 0482]
Date of Deployment:	April 1999
Technology User:	BNFL, Savannah River, Inc.
Deployment Value/Impact: The characterization data being acquired from three types of instruments involved in this deployment (the Advanced Tensiometers, lysimeters, and time domain reflectometry monitors) are being used to calibrate and validate the Performance Assessment for the site and show that the SRS operations satisfy groundwater quality standards. The data may provide justification for a 'No Further Action' decision concerning potential leakage of tritium from the waste trenches. That would be a huge cost avoidance. In addition, the monitoring devices (Advanced Tensiometers included) transmit the collected data to the analysts in Idaho on command (via special telephone arrangements). Over the long duration of the planned monitoring this should also provide a significant cost avoidance related to the fact that field mobilizations are not required for the data taking.	
Vendor Name for this Technology:	Same as primary Technology Title
Point of Contact:	
User Program POC(s): William L. Noll (Solid Waste Division, DOE-SR) - Aiken, SC. Tel. 803-725-2219 Virgil W. Sauls (Solid Waste Division, DOE-SR) - Aiken, SC. Tel. 803-725-4505	OST Program POC(s): Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209
Technology User POC(s): Heather H. Burns (BNFL Savannah River, Inc.) - Aiken, SC. Tel. 803-952-3725 Byron T. Butcher (Westinghouse Savannah River Corporation) - Aiken, SC. Tel. 803-725-5810	Vendor Company POC(s): Christopher J. McKee (In-Situ, Inc.) - Laramie, WY. Tel. 800-446-7488

Major Developers:

- Idaho National Engineering and Environmental Laboratory (INEEL), Remote, Robotic, and Automated Systems
- Lawrence Berkeley National Laboratory
- Lockheed Martin Idaho Technologies (LITCO)

Vendor Company:

In-Situ, Inc.

Other Deployments:

- Deployed (type: DOE) and Demonstrated (type: Full-Scale) in FY 1999 at Idaho National Engineering and Environmental Laboratory (RWMC) in Idaho Falls, ID

Advanced Tensiometer - Integrated Geophysical Characterization

(OST/TMS ID: 2122/ TMS Application ID: 1508)

The Advanced Tensiometer is an instrument that measures how tightly water is held to soil in the unsaturated zone, a region that extends from the earth's surface to the aquifer. The Advanced Tensiometer's breakthrough design helps investigators determine the direction and rate of water movement at depths and with accuracies not possible before, ushering in a new era for monitoring waste disposal sites, safeguarding drinking water supplies, and controlling agricultural irrigation systems.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Idaho National Engineering and Environmental Laboratory, RWMC (Idaho Falls, ID, United States)
PBS Name:	Radioactive Waste Management Complex Remediation [ID-ER-106, 0563]
Date of Deployment:	April 1999
Technology User:	Environmental Restoration, Idaho National Engineering and Environmental Laboratory
Deployment Value/Impact: The Advanced Tensiometer developed at INEEL has overcome the depth limitation of conventional tensiometers and is unaffected by changes in ambient temperatures. Advantages over conventional tensiometers are (1) low cost for downhole installation, (2) no moving parts on the portion that is permanently installed, (3) the pressure transducer is replaceable and can be calibrated from land surface, (4) field maintenance is significantly reduced over standard tensiometers, (5) able to collect continuous data to monitor for episodic water movement, (6) able to install at any depth, and (7) improved precision and stability of measurement images.	
Vendor Name for this Technology:	Advanced Tensiometer
Point of Contact:	
User Program POC(s): Joel Hubbel (Environmental Restoration, Idaho National Engineering and Environmental Laboratory) - Idaho Falls, ID. Tel. 208-526-1747 Douglas Jorgenson (Environmental Restoration, Idaho National Engineering and Environmental Laboratory) - Idaho Falls, ID. Tel. 208-526-7022	OST Program POC(s): Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209
Technology User POC(s): James Sisson (Idaho National Engineering Laboratory) - Idaho Falls, ID. Tel. 208-526-1118	Vendor Company POC(s): No Points of Contact are listed.

Major Developers:

- Idaho National Engineering and Environmental Laboratory (INEEL), Remote, Robotic, and Automated Systems
- Lawrence Berkeley National Laboratory
- Lockheed Martin Idaho Technologies (LITCO)

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (E-Area Low-level Radioactive Waste Trenches) in Aiken, SC

Remote Underwater Characterization System (RUCS)

(OST/TMS ID: 2151/ TMS Application ID: 1478)

The Remote Underwater Characterization System (RUCS) is an underwater characterization system designed to perform tasks such as characterization and small parts retrieval. It is based on a small, commercially available, submersible vehicle. The small size of the vehicle allows it to operate in areas where access is tight or where maneuvering room is limited. The system is very inexpensive when compared to others of similar capability. The vehicle has underwater lights and a front color camera. It is capable of operating at depths up to 100 feet. The Robotics Crosscutting Program added an on-board compass, depth sensor, and gamma radiation detector. An 'auto-depth' control feature was also implemented to allow the vehicle to 'hover' at a user-selected depth. A second version includes a small manipulator and an ultrasonic probe.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, TRA-660 Facility (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: May 1999

Technology User: Lockheed Martin Idaho Technology Company

Deployment Value/Impact: This was the second deployment of the RUCS at Idaho National Engineering Laboratory's TRA-660 facility. The facility got a new D&D manager who wanted to use the RUCS to perform additional visual and radiological characterization prior to performing D&D activities. The RUCS provided the information he needed to make informed dismantlement decisions and to practice as low as reasonably achievable (ALARA) during the dismantlement.

Vendor Name for this Technology:

ROV Scallop

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Steven J. Bossart (US Department of Energy, National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4643
John DeGregory (DOE) - Germantown, MD. Tel. 301-903-7949
Dennis C. Haley (ORNL) - Oak Ridge, TN. Tel. 865-576-4388
Linton W. Yarbrough (Department of Energy, Albuquerque) - Albuquerque, NM. Tel. 505-845-6569

Technology User POC(s):

Walter D. Willis (Idaho National Engineering and Environmental Laboratory) - Idaho Falls, ID. Tel. 208-526-8613

Vendor Company POC(s):

Terry Knight (Inuktun Services, Ltd.) - Cedar, BC. Tel. 360-650-0460

Major Developers:

- Idaho National Engineering and Environmental Laboratory (INEEL), Remote, Robotic, and Automated Systems
- Inuktun Services, Ltd.

Vendor Company:

Inuktun Services, Ltd. (<http://www.inuktun.com>)

Other Deployments:

Deployed (type: DOE) and Demonstrated (type: Full-Scale) in FY 1998 at Idaho National Engineering and Environmental Laboratory (TRA-660 Facility) in Idaho Falls, ID

Compact Subsurface Investigation System

(OST/TMS ID: 2153/ TMS Application ID: 1630)

The Geoprobe Model 540 is a compact subsurface soil investigation system capable of retrieving soil samples. The Geoprobe Model 540 is a 31-in. wide unit capable of sampling in congested areas that standard soil sampling equipment would not be able to fit into to conduct sample retrieval. The unit hydraulically hammers and/or pushes a metal sampling tube into soil and hydraulically withdraws the sample to the surface. The diameters of the typical sampling tubes are such that inner plastic sample holders are used that are 1.25-in. or 2-in. inside diameter. The length of sample that can be taken with each sample withdrawal is up to 2 ft. The Geoprobe Model 540 is equipped with two wheels and can be moved around similar to a cart. The unit is also connected with flexible hydraulic hoses to a remote hydraulic power unit.

DESCRIPTION OF THE DEPLOYMENT

Location: Hanford Site, DR Reactor (Richland, WA, United States)

PBS Name: Decontamination and Decommissioning [RL-ER06, 0420]

Date of Deployment: August 1999

Technology User: Bechtel Hanford, Inc.

Deployment Value/Impact: The compactness of the Geoprobe Model 540 permitted sampling on the basin floor between concrete curbs that have 86.3cm (34 inch) clearance between pairs of curbs. Baseline truck-mounted units would not have been able to effectively sample in such congested areas and the time/cost to install support decking for the heavy unit were prohibitive.

Vendor Name for this Technology: Geoprobe, Model 540

Point of Contact:

User Program POC(s):

Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029

OST Program POC(s):

John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

Technology User POC(s):

Kim Koegler (Bechtel Hanford Inc.) - Richland, WA. Tel. 509-372-9294

Vendor Company POC(s):

Kevin Pope (Geoprobe Systems) - Reedley, CA. Tel. 209-637-1696

Major Developers:

GeoProbe Systems

Vendor Company:

Geoprobe Systems

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Hanford C Reactor (Fuel Storage Basin) in Richland, WA

Permeable Reactive Treatment (PeRT) Wall for Rads and Metals

(OST/TMS ID: 2155/ TMS Application ID: 887)

A PeRT wall is a zone of reactive material emplaced in the subsurface to treat and remediate contaminated groundwater that passes horizontally through it. The technology typically is deployed using a set of impermeable walls to funnel the groundwater into the permeable zone, or 'gate', containing the reactive material. Iron particles are commonly used as the reactive material, depending on the type of contaminant and subsurface conditions. Impermeable walls are usually formed using a soil/bentonite clay slurry which extend down to bedrock. The reactive zone typically is formed with sheet piling, excavated, backfilled with reactive material, and the sheet piling is removed prior to operation.

DESCRIPTION OF THE DEPLOYMENT

Location: Grand Junction Office, Monticello Remedial Action Project (Grand Junction, CO, United States)

PBS Name: GJO All Other Projects [AL024, 0478]

Date of Deployment: May 1999

Technology User: DOE-GJO EM-40

Deployment Value/Impact: The deployment of the PeRT wall will help DOE meet established cleanup goals for groundwater at the site, expedite cleanup of contaminated groundwater in the alluvial aquifer over the current baseline technology, pump and treat; create significant cost savings for the DOE and promote deployment of the technology to other UMTRA and DOE sites.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Donald Metzler (DOE-GJO EM-40) - Tel. 970-248-7612

OST Program POC(s):

Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

James A. Wright (SCFA) - Aiken, SC. Tel. 803-725-5608

Technology User POC(s):

Vernon Cromwell (DOE-GJPO) - Grand Junction, CO. Tel. 970-248-7735

Brian Dwyer (Sandia National Laboratory) - Albuquerque, NM. Tel. 505-845-9894

Vendor Company POC(s):

Clay Carpenter (MACTEC-ERS) - Grand Junction, CO. Tel. 970-248-6588

Major Developers:

- DOE - Grand Junction Project Office
- MSE-Technology Applications, Inc.
- Sandia National Laboratories
- University of New Mexico

Vendor Company:

MACTEC

Other Deployments:

This is the first deployment of this technology.

Portable Hi-Purity Germanium Detectors for Delineating Contamination in Soils

(OST/TMS ID: 2157/ TMS Application ID: 1437)

This project implements and deploys a suite of proven EM-50 sponsored technologies that, taken together: provide a turn-key solution to the problem of discerning between contaminated and uncontaminated soils in support of a soil remedial action involving radionuclides; and allow this discernment to take place 'on the fly' as part of an overall Adaptive Sampling and Analysis Program (ASAP) strategy.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Fernald Environmental Management Project, Area 8 Phase III (Fernald, OH, United States)		
PBS Name:	Soils [OH-FN-06, 0530]		
Date of Deployment:	January 1999	Technology User:	Fernald Environmental Management Project
Deployment Value/Impact: This suite of technologies, when used together, are projected to reduce remediation costs between FY98 and FY00 by about \$30 million.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Robert F. Danner (DOE-FN) - Cincinnati, OH. Tel. 513-648-3167		OST Program POC(s): Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596	
Technology User POC(s): J.D. Chiou (Fluor Daniel Fernald) - Cincinnati, OH. Tel. 513-648-3726 Robert Janke (DOE-FEMP) - Cincinnati, OH. Tel. 513-648-3124		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:

- Argonne National Laboratory - East
- Fernald Environmental Management Project (FEMP)
- Idaho National Engineering and Environmental Laboratory (INEEL), Remote, Robotic, and Automated Systems

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Fernald Environmental Management Project (Area 2, Phase III) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at FEMP (Area 2, Phase I FEMP #s 1, 2, &3) in Fernald, OH

Portable Hi-Purity Germanium Detectors for Delineating Contamination in Soils

(OST/TMS ID: 2157/ TMS Application ID: 1453)

This project implements and deploys a suite of proven EM-50 sponsored technologies that, taken together: provide a turn-key solution to the problem of discerning between contaminated and uncontaminated soils in support of a soil remedial action involving radionuclides; and allow this discernment to take place 'on the fly' as part of an overall Adaptive Sampling and Analysis Program (ASAP) strategy.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Fernald Environmental Management Project, Area 2, Phase III (Fernald, OH, United States)		
PBS Name:	Soils [OH-FN-06, 0530]		
Date of Deployment:	March 1999	Technology User:	Fernald Environmental Management Project
Deployment Value/Impact: This suite of technologies, when used together, are projected to reduce remediation costs between FY98 and FY00 by about \$30 million.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Robert Janke (DOE-FEMP) - Cincinnati, OH. Tel. 513-648-3124		OST Program POC(s): John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532 James A. Wright (SCFA) - Aiken, SC. Tel. 803-725-5608	
Technology User POC(s): J.D. Chiou (Fluor Daniel Fernald) - Cincinnati, OH. Tel. 513-648-3726 John Danner (DOE-FN) - Cincinnati, OH. Tel. 513-648-3167		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:

- Argonne National Laboratory - East
- Fernald Environmental Management Project (FEMP)
- Idaho National Engineering and Environmental Laboratory (INEEL), Remote, Robotic, and Automated Systems

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Fernald Environmental Management Project (Area 8 Phase III) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at FEMP (Area 2, Phase I FEMP #s 1, 2, &3) in Fernald, OH

Segmented Gate System

(OST/TMS ID: 2158/ TMS Application ID: 1300)

The Segmented Gate System (SGS) uses a computer controlled mechanical sorter to separate suspected radioactive contaminated soil into clean and contaminated waste streams. This is accomplished by passing soil, via a conveyor belt, under two banks of sensors that will detect radionuclide concentrations above the desired limits based on the specific contaminant and regulatory requirements. This soil is then diverted into a separate waste stream for removal. The SGS is capable of using a variety of sensors required for specific contaminant detection (i.e., sodium iodide, calcium fluoride, or high purity germanium). The flexibility, sensitivity, and speed of the SGS has proven to be cost effective and significant volume reduction has been experienced.

DESCRIPTION OF THE DEPLOYMENT

Location:	Sandia National Laboratories - NM, OU 228 (Albuquerque, NM, United States)		
PBS Name:	Not Specified		
Date of Deployment:	November 1998	Technology User:	Sandia National Laboratory
Deployment Value/Impact: This ASTD deployment realized an estimated \$320,000 transportation of waste cost savings. There was a 95% volume reduction in this implementation thus far. This deployment is ongoing.			
Vendor Name for this Technology:	Same as primary Technology Title		
Point of Contact:			
User Program POC(s):	OST Program POC(s):		
Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101	Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596		
Technology User POC(s):	Vendor Company POC(s):		
Thomas D. Burford (Sandia National Laboratory) - Albuquerque, NM. Tel. 505-845-9893	Jeffrey Brown (ThermoNutech) - Knoxville, TN. Tel. 423-481-0683		

Major Developers:

ThermoNuTech

Vendor Company:

ThermoNutech

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (TA 303) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (OU C-33-010) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (C-33-007B) in Los Alamos, NM
- Deployed (type: DOE) in FY 1998 at Pantex (Pantex) in Amarillo, TX
- Deployed (type: DOE) in FY 1998 at Ashtabula (Ashtabula Soil Pile) in Ashtabula, OH

Segmented Gate System

(OST/TMS ID: 2158/ TMS Application ID: 1348)

The Segmented Gate System (SGS) uses a computer controlled mechanical sorter to separate suspected radioactive contaminated soil into clean and contaminated waste streams. This is accomplished by passing soil, via a conveyor belt, under two banks of sensors that will detect radionuclide concentrations above the desired limits based on the specific contaminant and regulatory requirements. This soil is then diverted into a separate waste stream for removal. The SGS is capable of using a variety of sensors required for specific contaminant detection (i.e., sodium iodide, calcium fluoride, or high purity germanium). The flexibility, sensitivity, and speed of the SGS has proven to be cost effective and significant volume reduction has been experienced.

DESCRIPTION OF THE DEPLOYMENT

Location: Los Alamos National Laboratory, TA 303 (Los Alamos, NM, United States)

PBS Name: LANL Waste Management - Legacy Waste [AL013, 0472]

Date of Deployment: April 1999

Technology User: Los Alamos National Laboratory

Deployment Value/Impact: This ASTD deployment is expected to be completed by the end of May, 1999, and has seen 99% volume reduction of approximately 2300 cu yd and hopes to yield an estimated cost savings near \$400,000.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Thomas D. Burford (Sandia National Laboratory) - Albuquerque, NM. Tel. 505-845-9893

Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101

Technology User POC(s):

John McCann (LANL) - Albuquerque, NM. Tel. 505-845-9893

OST Program POC(s):

Skip Chamberlain (EM-53) - Germantown, MD. Tel. 301-903-7248

Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

Vendor Company POC(s):

Joe Kimbrell (ThermoNuTech) - Albuquerque, NM. Tel. 505-845-9893

Major Developers:

ThermoNuTech

Vendor Company:

ThermoNuTech

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Sandia National Laboratories - NM (OU 228) in Albuquerque, NM
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (OU C-33-010) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (C-33-007B) in Los Alamos, NM
- Deployed (type: DOE) in FY 1998 at Pantex (Pantex) in Amarillo, TX
- Deployed (type: DOE) in FY 1998 at Ashtabula (Ashtabula Soil Pile) in Ashtabula, OH

Segmented Gate System

(OST/TMS ID: 2158/ TMS Application ID: 1389)

The Segmented Gate System (SGS) uses a computer controlled mechanical sorter to separate suspected radioactive contaminated soil into clean and contaminated waste streams. This is accomplished by passing soil, via a conveyor belt, under two banks of sensors that will detect radionuclide concentrations above the desired limits based on the specific contaminant and regulatory requirements. This soil is then diverted into a separate waste stream for removal. The SGS is capable of using a variety of sensors required for specific contaminant detection (i.e., sodium iodide, calcium fluoride, or high purity germanium). The flexibility, sensitivity, and speed of the SGS has proven to be cost effective and significant volume reduction has been experienced.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory (Idaho Falls, ID, United States)

PBS Name: Test Area North Remediation [ID-ER-101, 0164]

Date of Deployment: June 1999

Technology User: INEEL

Deployment Value/Impact: At the INEEL's Auxiliary Reactor Area (ARA), no benefit was realized by the deployment of the SGS. The 90% soil volume reduction needed in order for the SGS to be cost competitive was not realized. Cs-137 concentrations were too high, the particles were too similar and the required clean-up limit was too low for the proper separation to occur.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Patrick Trudel (DOE - Idaho) - Idaho Falls, ID. Tel. 208-526-0169

OST Program POC(s):

Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

Technology User POC(s):

Frank Webber (INEEL) - Scoville, ID. Tel. 208-526-8507

Vendor Company POC(s):

Scott Rogers (ThermoNuTech) - Santa Fe, NM. Tel. 505-424-3072

Major Developers:

ThermoNuTech

Vendor Company:

ThermoNuTech

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Sandia National Laboratories - NM (OU 228) in Albuquerque, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (TA 303) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (OU C-33-010) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (C-33-007B) in Los Alamos, NM
- Deployed (type: DOE) in FY 1998 at Pantex (Pantex) in Amarillo, TX
- Deployed (type: DOE) in FY 1998 at Ashtabula (Ashtabula Soil Pile) in Ashtabula, OH

Segmented Gate System

(OST/TMS ID: 2158/ TMS Application ID: 1740)

The Segmented Gate System (SGS) uses a computer controlled mechanical sorter to separate suspected radioactive contaminated soil into clean and contaminated waste streams. This is accomplished by passing soil, via a conveyor belt, under two banks of sensors that will detect radionuclide concentrations above the desired limits based on the specific contaminant and regulatory requirements. This soil is then diverted into a separate waste stream for removal. The SGS is capable of using a variety of sensors required for specific contaminant detection (i.e., sodium iodide, calcium fluoride, or high purity germanium). The flexibility, sensitivity, and speed of the SGS has proven to be cost effective and significant volume reduction has been experienced.

DESCRIPTION OF THE DEPLOYMENT

Location: Los Alamos National Laboratory, OU C-33-010 (Los Alamos, NM, United States)

PBS Name: LANL Environmental Restoration [AL009, 0562]

Date of Deployment: April 1999

Technology User: LANL

Deployment Value/Impact: This deployment, in conjunction with the other two deployment sites at LANL, is expected to yield cost savings over \$400,000. It is potentially applicable at all DOE sites that have unconsolidated soils contaminated with radionuclides (above regulatory limits) in shallow soil that can be excavated.

Vendor Name for this Technology: Same as primary Technology Title

Point of Contact:

User Program POC(s):

Thomas D. Burford (Sandia National Laboratory) - Albuquerque, NM. Tel. 505-845-9893

Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101

OST Program POC(s):

Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

Technology User POC(s):

John McCann (LANL) - Albuquerque, NM. Tel. 505-845-9893

Vendor Company POC(s):

Joe Kimbrell (ThermoNuTech) - Albuquerque, NM. Tel. 505-845-9893

Major Developers:

ThermoNuTech

Vendor Company:

ThermoNuTech

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Sandia National Laboratories - NM (OU 228) in Albuquerque, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (TA 303) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (C-33-007B) in Los Alamos, NM
- Deployed (type: DOE) in FY 1998 at Pantex (Pantex) in Amarillo, TX
- Deployed (type: DOE) in FY 1998 at Ashtabula (Ashtabula Soil Pile) in Ashtabula, OH

Segmented Gate System

(OST/TMS ID: 2158/ TMS Application ID: 1742)

The Segmented Gate System (SGS) uses a computer controlled mechanical sorter to separate suspected radioactive contaminated soil into clean and contaminated waste streams. This is accomplished by passing soil, via a conveyor belt, under two banks of sensors that will detect radionuclide concentrations above the desired limits based on the specific contaminant and regulatory requirements. This soil is then diverted into a separate waste stream for removal. The SGS is capable of using a variety of sensors required for specific contaminant detection (i.e., sodium iodide, calcium fluoride, or high purity germanium). The flexibility, sensitivity, and speed of the SGS has proven to be cost effective and significant volume reduction has been experienced.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Los Alamos National Laboratory, C-33-007B (Los Alamos, NM, United States)		
PBS Name:	LANL Environmental Restoration [AL009, 0562]		
Date of Deployment:	April 1999	Technology User:	LANL
Deployment Value/Impact: This deployment, in conjunction with the other two deployment sites at LANL, is expected to yield cost savings over \$400,000. It is potentially applicable at all DOE sites that have unconsolidated soils contaminated with radionuclides (above regulatory limits) in shallow soil that can be excavated.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Thomas D. Burford (Sandia National Laboratory) - Albuquerque, NM. Tel. 505-845-9893 Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101		OST Program POC(s): Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596	
Technology User POC(s): John McCann (LANL) - Albuquerque, NM. Tel. 505-845-9893		Vendor Company POC(s): Joe Kimbrell (ThermoNuTech) - Albuquerque, NM. Tel. 505-845-9893	

Major Developers:
ThermoNuTech

Vendor Company:
ThermoNuTech

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Sandia National Laboratories - NM (OU 228) in Albuquerque, NM
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (TA 303) in Los Alamos, NM
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Los Alamos National Laboratory (OU C-33-010) in Los Alamos, NM
- Deployed (type: DOE) in FY 1998 at Pantex (Pantex) in Amarillo, TX
- Deployed (type: DOE) in FY 1998 at Ashtabula (Ashtabula Soil Pile) in Ashtabula, OH

CDI Remote Characterization System

(OST/TMS ID: 2178/ TMS Application ID: 1510)

This is a fully remote platform (vehicle) designed for deployment in areas where personnel are prohibited access such as high radiation areas. It carries characterization sensors such as gamma detectors and video cameras, and has the capability to take smear samples.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Hanford Site, 221-U Facility, Ventilation Tunnel (Richland, WA, United States)
PBS Name:	Facility Surveillance & Maintenance - ADS 3500 [RL-ER05, 0419]
Date of Deployment:	September 1999
Technology User:	Bechtel Hanford Inc.
Deployment Value/Impact: This deployment collected critical characterization data in the 800-foot ventilation tunnel in the U-Plant that could not be collected by personnel. This data is part of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Record of Decision (ROD) process that the Hanford Site is going through to determine the final disposition of the five chemical processing facilities on site.	
Vendor Name for this Technology:	ANDROS
Point of Contact:	
User Program POC(s): Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029	OST Program POC(s): John DeGregory (DOE) - Germantown, MD. Tel. 301-903-7949 John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217 Dennis C. Haley (ORNL) - Oak Ridge, TN. Tel. 865-576-4388 Linton W. Yarbrough (Department of Energy, Albuquerque) - Albuquerque, NM. Tel. 505-845-6569
Technology User POC(s): Robert Henckel (Bechtel Hanford, Inc.) - Richland, WA. Tel. 509-373-6876	Vendor Company POC(s): Jim Rambo (REMOTEC, Inc.) - Oak Ridge, TN. Tel. 423-483-0228

Major Developers:

Pacific Northwest National Laboratory, Energy Technology Division

Vendor Company:

REMOTEC, Inc. (www.remotec-andros.com)

Other Deployments:

Deployed (type: DOE) and Demonstrated (type: Full-Scale) in FY 1998 at Hanford (221-U Railroad Tunnel) in Richland, WA

Phytoremediation of Radiologically Contaminated Soils

(OST/TMS ID: 2188/ TMS Application ID: 1656)

Phytoextraction is the application of certain plant species (planting/growing/harvesting) that are known to uptake certain heavy metals and radionuclides from soil. Phytoextraction applies to sites which have relatively low concentrations of these contaminants (but which are still of concern to regulators and stakeholders). Since the rate of uptake is limited by the plant's rate of growth, phytoextraction is a somewhat slower process than more aggressive (but potentially costlier) approaches like soil excavation and disposal. Phytoextraction is currently the only technology that is capable of removing low to moderate levels of heavy metals from large areas of contaminated surface soil.

DESCRIPTION OF THE DEPLOYMENT

Location: Poland, Czechowice Oil Refinery (Czechowice, Poland)

PBS Name: Not Specified

Date of Deployment: March 1999

Technology User: Institute for Ecology of Industrial Areas, Poland/Florida State University

Deployment Value/Impact: Phytoextraction of heavy metals from soils is being evaluated as the baseline technology for removing low to moderate levels of heavy metals (e.g., lead, cadmium) from large areas of surface soil. Technologies currently do not exist to economically remove heavy metals from large areas of contaminated surface soil. This project evaluated phytoextraction at large scale (1-2 hectare) using standard agricultural methodologies and equipment. Previous work has quantified the costs of full-scale phyto deployment. Current activities focus on cost reduction and process optimization.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Rafal Kucharski (Institute for Ecology of Industrial Areas) - Katowicz, Poland. Tel. 48-32-254-0164

OST Program POC(s):

Skip Chamberlain (EM-53) - Germantown, MD. Tel. 301-903-7248
Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596
Sharon Robinson (DOE-SR) - Aiken, SC. Tel. 803-725-5793

Technology User POC(s):

Denis J. Altman (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7637
Mike Kuperberg (Florida State University) - Tallahassee, FL. Tel. 850-644-5516
Albert Tien (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7238

Vendor Company POC(s):

Carol A. Eddy-Dilek (Westinghouse Savannah River Company) - Aiken, SC. Tel. 513-529-3218

Major Developers:

- Florida State University
- Institute for Ecology of Industrial Areas, Poland

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - East (French Drain Area 317 and 319) in Argonne, IL
- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - West (WAG9-OU-4) in Idaho Falls, ID

Phytoremediation of Radiologically Contaminated Soils

(OST/TMS ID: 2188/ TMS Application ID: 1848)

Phytoextraction is the application of certain plant species (planting/growing/harvesting) that are known to uptake certain heavy metals and radionuclides from soil. Phytoextraction applies to sites which have relatively low concentrations of these contaminants (but which are still of concern to regulators and stakeholders). Since the rate of uptake is limited by the plant's rate of growth, phytoextraction is a somewhat slower process than more aggressive (but potentially costlier) approaches like soil excavation and disposal. Phytoextraction is currently the only technology that is capable of removing low to moderate levels of heavy metals from large areas of contaminated surface soil.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Argonne National Laboratory - East, French Drain Area 317 and 319 (Argonne, IL, United States)		
PBS Name:	ANL-E Remedial Actions [CH-ANLERA, 0002]		
Date of Deployment:	June 1999	Technology User:	Argonne National Laboratory
Deployment Value/Impact: Phytoremediation of heavy metals in soils is being evaluated as the baseline technology for removing low to moderate levels of metals (e.g., lead, cadmium) from large areas of surface soil. Technologies currently do not exist to economically remove heavy metals from large areas of contaminated surface soil. Previous work has quantified the costs of full-scale phyto deployment.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Yvette Collazo (DOE-CH) - Argonne, IL. Tel. 630-252-2102		OST Program POC(s): Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596	
Technology User POC(s): Ray Hinchman (Applied Natural Sciences) - Argonne, IL. Tel. 630-252-3391		Vendor Company POC(s): No Points of Contact are listed.	

Major Developers:

- Florida State University
- Institute for Ecology of Industrial Areas, Poland

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Poland (Czechowice Oil Refinery) in Czechowice, Poland
- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - West (WAG9-OU-4) in Idaho Falls, ID

Phytoremediation of Radiologically Contaminated Soils

(OST/TMS ID: 2188/ TMS Application ID: 1849)

Phytoextraction is the application of certain plant species (planting/growing/harvesting) that are known to uptake certain heavy metals and radionuclides from soil. Phytoextraction applies to sites which have relatively low concentrations of these contaminants (but which are still of concern to regulators and stakeholders). Since the rate of uptake is limited by the plant's rate of growth, phytoextraction is a somewhat slower process than more aggressive (but potentially costlier) approaches like soil excavation and disposal. Phytoextraction is currently the only technology that is capable of removing low to moderate levels of heavy metals from large areas of contaminated surface soil.

DESCRIPTION OF THE DEPLOYMENT

Location: Argonne National Laboratory - West, WAG9-OU-4 (Idaho Falls, ID, United States)

PBS Name: ANL-W Remedial Actions [CH-ANLWRA, 0029]

Date of Deployment: May 1999

Technology User: Argonne National Laboratory

Deployment Value/Impact: Phytoremediation of heavy metals in soils is being evaluated as the baseline technology for removing low to moderate levels of metals (e.g., lead, cadmium) from large areas of surface soil. Technologies currently do not exist to economically remove heavy metals from large areas of contaminated surface soil. Previous work has quantified the costs of full-scale phyto deployment.

Vendor Name for this Technology:

Same as primary Technology Title

Point of Contact:

User Program POC(s):

Yvette Collazo (DOE-CH) - Argonne, IL. Tel. 630-252-2102

OST Program POC(s):

Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

Technology User POC(s):

Scott Lee (Argonne National Lab-West) - Scoville, ID. Tel. 208-533-7829

Vendor Company POC(s):

No Points of Contact are listed.

Major Developers:

- Florida State University
- Institute for Ecology of Industrial Areas, Poland

Vendor Company:

Vendor Not Applicable

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Poland (Czechowice Oil Refinery) in Czechowice, Poland
- Deployed (type: DOE) in FY 1999 at Argonne National Laboratory - East (French Drain Area 317 and 319) in Argonne, IL

Wireline Cone Penetrometer System for Multiple Tool Usage

(OST/TMS ID: 2222/ TMS Application ID: 1605)

Cone Penetrometer Technology is becoming more common for site characterization activities, as its advantages (e.g., increased speed, lower cost, reduced drilling waste) over conventional drilling technologies have been demonstrated. Although CPT offers many benefits, it can be improved to offer increased utility and cost savings with the development of an innovative wireline system.

The wireline cone penetrometer system consists of an assortment of tools that can be pushed using standard CPT rigs and equipment. The novel aspect of this approach is that various tools can be placed at the tip of the rod string depending on the time of information or sample desired. Tools can be swapped at any depth and different tools can be used for penetration or retraction. Wireline CPT allows nearly all work to be accomplished in a single penetration, as opposed to the multiple penetrations currently conducted if more than one kind of data is required.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Savannah River Site, M-Basin (Aiken, SC, United States)
PBS Name:	M Area Deactivation Project [SR-FA15, 0512]
Date of Deployment:	May 1999
Technology User:	Westinghouse Savannah River Company
Deployment Value/Impact:	The wireline system was used to deploy multiple CPT tools. It met all of its performance goals; its use is predicted to yield upward of 24% time savings for using multiple sensors.
Vendor Name for this Technology:	Wireline CPT System
Point of Contact:	
User Program POC(s): Chris Bergren (BSRI) - Aiken, SC. Tel. 803-952-6530	OST Program POC(s): Robert C. Bedick (National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4505 Skip Chamberlain (EM-53) - Germantown, MD. Tel. 301-903-7248 Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209 • James A. Wright (SCFA) - Aiken, SC. Tel. 803-725-5608
Technology User POC(s): Joseph Rossabi (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7808	Vendor Company POC(s): Stephen P. Farrington (Applied Research Associates) - South Royalton, VT. Tel. 802-763-8348

Major Developers:
Applied Research Associates, Inc.

Vendor Company:
Applied Research Associates, Inc. (www.ara.com)

Other Deployments:
This is the first deployment of this technology.

Flygt Mixer

(OST/TMS ID: 2232/ TMS Application ID: 996)

The Flygt Mixer is a submersible mixer technology to rapidly mix large quantities of tank waste. This mixing is necessary to prepare the waste for transfer in support of immobilization. The Flygt Mixer uses an open propeller to move waste within the tank. This configuration creates long-range currents capable of mixing over 20,000 gal/min of tank waste. A test program developed mixer sizing and configuration data along with recommended operating practices for use in full-scale waste tanks. Flygt Mixers are less expensive, more effective, and require less maintenance than mixer pumps.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), Tank W-5 (Oak Ridge, TN, United States)		
PBS Name:	ORNL Remedial Action - Def [OR-321, 0095]		
Date of Deployment:	December 1998	Technology User:	Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company
Deployment Value/Impact:	TBD		
Vendor Name for this Technology:			Same as primary Technology Title
<u>Point of Contact:</u>			
User Program POC(s):	Jacque R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184	OST Program POC(s):	Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546
Technology User POC(s):	Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779	Vendor Company POC(s):	Danny Adams (ITT Flygt Corporation) - Suwanee, GA. Tel. 770-932-4320 ext 11

Major Developers:

No Major Developers are listed.

Vendor Company:

ITT Flygt (<http://www.flygt.com/>)

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT Tank W-9) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1997 at Savannah River Site (Tank 17) in Aiken, GA

Flygt Mixer

(OST/TMS ID: 2232/ TMS Application ID: 1826)

The Flygt Mixer is a submersible mixer technology to rapidly mix large quantities of tank waste. This mixing is necessary to prepare the waste for transfer in support of immobilization. The Flygt Mixer uses an open propeller to move waste within the tank. This configuration creates long-range currents capable of mixing over 20,000 gal/min of tank waste. A test program developed mixer sizing and configuration data along with recommended operating practices for use in full-scale waste tanks. Flygt Mixers are less expensive, more effective, and require less maintenance than mixer pumps.

DESCRIPTION OF THE DEPLOYMENT			
Location:	Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT Tank W-9 (Oak Ridge, TN, United States)		
PBS Name:	ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]		
Date of Deployment:	September 1999	Technology User:	Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company
Deployment Value/Impact: The addition of the Flygt Mixer in conjunction with the Waste Conditioning System and Pulsed Air Mixer was successfully used during some waste transfer operations from GAAT Tank W-9 to MVST in September 1999.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184		OST Program POC(s): Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546	
Technology User POC(s): Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779		Vendor Company POC(s): Danny Adams (ITT Flygt Corporation) - Suwanee, GA. Tel. 770-932-4320 ext. 11	

Major Developers:

No Major Developers are listed.

Vendor Company:

ITT Flygt (<http://www.flygt.com/>)

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Tank W-5) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1997 at Savannah River Site (Tank 17) in Aiken, GA

LIF Probe for CPT

(OST/TMS ID: 2237/ TMS Application ID: 1582)

The use of LIF to infer the presence of DNAPL is a relatively inexpensive and non-intrusive method to screen for the presence of DNAPL. The probe can be deployed with the standard ECPT sensor suite in the initial phases of characterization to optimize locations for collection of core material for laboratory sampling. LIF probes are currently available from several vendors. The use of LIF to locate probable source zone boundaries will allow precise definition of the distribution of DNAPL at waste sites in real time that result in optimization of source zone characterization activities and minimization of the number of samples required for laboratory analysis.

DESCRIPTION OF THE DEPLOYMENT	
Location:	Commercial Site, Dry Cleaning (Jacksonville, FL, United States)
PBS Name:	Not Specified
Date of Deployment:	January 1999
Technology User:	Savannah River Tech Center
Deployment Value/Impact: Technology was successful at delineating DNAPL in the saturated zone at depths where DNAPL had not previously been identified.	
Vendor Name for this Technology:	Field Raman Spectrograph
Point of Contact:	
User Program POC(s): Kevin Warner (Sages Dry Cleaners) - Jacksonville, FL. Tel. 850-422-2555	OST Program POC(s): Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209
Technology User POC(s): Joseph Rossabi (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7808	Vendor Company POC(s): Job Bello (EIC Laboratories, Inc.) - Norwood, MA. Tel. 781-769-9450

Major Developers:

- EIC Laboratories, Inc.
- Fugro Geosciences, inc.

Vendor Company:

EIC Laboratories, Inc. (www.eiclabs.com)

Other Deployments:

- Deployed (type: DOE) in FY 1998 at Savannah River Site (M-Basin) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1299)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT

Location: Kennedy Space Center, Cape Canaveral Air Station. Launch Complex 34 (Cape Canaveral, FL, United States)

PBS Name: Not Specified

Date of Deployment: January 1999

Technology User: Savannah River Tech Center

Deployment Value/Impact: In situ sampling eliminates the need for drilling and collection of soil samples to determine DNAPL locations. The FLUTE membrane is relatively inexpensive and is reusable. Minimal time is needed to deploy and retrieve membrane. The FLUTE membrane is lightweight and easily transported with no need for special vehicles or equipment. Use of the FLUTE Hydrophobic Flexible Membrane in the initial characterization phase can be used to optimize subsequent drilling and sampling resulting in significant time and cost savings.

The technology was successful for depth-discrete delineation of DNAPL in the subsurface at the Interagency DNAPL Consortium Site test bed.

Vendor Name for this Technology: NAPL FLUTE

Point of Contact:

User Program POC(s):

Jacqueline Quinn (NASA Environmental Program Office) - Cape Canaveral, FL. Tel. 407 867-4265

Technology User POC(s):

Brian D. Riha (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7807

OST Program POC(s):

Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209

Vendor Company POC(s):

Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE, Inc. (www.flut.com)

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) and Demonstrated (type: Full-Scale) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1526)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT			
Location:	Savannah River Site, A-014 Outfall (Aiken, SC, United States)		
PBS Name:	Upper Three Runs Project [SR-ER06, 0056]		
Date of Deployment:	February 1999	Technology User:	Savannah River Tech Center
Deployment Value/Impact: The technology was successful for depth-discrete delineation of DNAPL in the vadose zone. Data were used to optimize design of remediation system.			
Vendor Name for this Technology:		NAPL FLUTE	
Point of Contact:			
User Program POC(s): Chris Bergren (BSRI) - Aiken, SC. Tel. 803-952-6530		OST Program POC(s): Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209	
Technology User POC(s): Brian D. Riha (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7807		Vendor Company POC(s): Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300	

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE Inc. (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1527)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT			
Location:	Savannah River Site, C-area Burning Rubble Pits (Aiken, SC, United States)		
PBS Name:	Four Mile Branch Project [SR-ER02, 0052]		
Date of Deployment:	May 1999	Technology User:	Savannah River Tech Center
Deployment Value/Impact: The technology was deployed in suspect DNAPL source zone. No DNAPL was found indicating dissolved phase contamination only.			
Vendor Name for this Technology:		NAPL FLUTE	
Point of Contact:			
User Program POC(s): Ron Falise (BSRI) - Aiken, SC. Tel. 803-952-6466		OST Program POC(s): Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209	
Technology User POC(s): Brian D. Riha (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7807		Vendor Company POC(s): Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300	

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE Inc. (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1528)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT			
Location:	EPA Superfund Site, McCormick Barton Wood Preserving Plant (Stockton, CA, United States)		
PBS Name:	Not Specified		
Date of Deployment:	August 1999	Technology User:	Savannah River Tech Center
Deployment Value/Impact: The technology was successful at depth-discrete delineation of coal tar and creosote in the subsurface.			
Vendor Name for this Technology:		NAPL FLUTE	
Point of Contact:			
User Program POC(s): Marie Lacey (U.S. EPA) - CA. Tel. 415-744-2236		OST Program POC(s): Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209	
Technology User POC(s): Joe Rossabi (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7808		Vendor Company POC(s): Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300	

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE, Inc. (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1671)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT

Location:	Paducah Gaseous Diffusion Plant (Paducah, KY, United States)		
PBS Name:	Paducah Remedial Action [OR-45301, 0317] Paducah Remedial Action [OR-523, 0143]		
Date of Deployment:	June 1999	Technology User:	Westinghouse Savannah River Company
Deployment Value/Impact: Modifications to the FLUTE Ribbon NAPL Sampler to extend its versatility were demonstrated. The RNS was used to further delineate the extent of NAPL contamination as a part of site characterization and remediation preparation.			
Vendor Name for this Technology:		Same as primary Technology Title	
Point of Contact:			
User Program POC(s): Brian D. Riha (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7807 John D. Sheppard (DOE/PAD) - Paducah, KY. Tel. 270-441-6804		OST Program POC(s): John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532	
Technology User POC(s): Carol A. Eddy-Dilek (Westinghouse Savannah River Company) - Aiken, SC. Tel. 513-529-3218		Vendor Company POC(s): Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300	

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1712)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT			
Location:	Savannah River Site, 321-M Solvent Storage Tank (Aiken, SC, United States)		
PBS Name:	M Area Deactivation Project [SR-FA15, 0512]		
Date of Deployment:	March 1999	Technology User:	Westinghouse Savannah River Company
Deployment Value/Impact: The Ribbon NAPL Sampler was used to locate and identify DNAPL in the subsurface.			
Vendor Name for this Technology:		FLUTE System for CPT	
Point of Contact:			
User Program POC(s): Chris Bergren (BSRI) - Aiken, SC. Tel. (803) 952-6530		OST Program POC(s): John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532	
Technology User POC(s): Joseph Rossabi (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7808		Vendor Company POC(s): Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300	

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE Limited (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1713)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT			
Location:	Savannah River Site, A-014 Outfall (Aiken, SC, United States)		
PBS Name:	Upper Three Runs Project [SR-ER06, 0056]		
Date of Deployment:	April 1999	Technology User:	Westinghouse Savannah River Company
Deployment Value/Impact: The Ribbon NAPL Sampler was used to detect and identify DNAPL contamination in the subsurface.			
Vendor Name for this Technology:		FLUTE System for CPT	
Point of Contact:			
User Program POC(s): Chris Bergren (BSRI) - Aiken, SC. Tel. 803-952-6530		OST Program POC(s): John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532	
Technology User POC(s): Joe Rossabi (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7808		Vendor Company POC(s): Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300	

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE Limited (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1763)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT	
Location:	Savannah River Site, Vadose Zone (Aiken, SC, United States)
PBS Name:	Upper Three Runs Project [SR-ER06, 0056]
Date of Deployment:	February 1999
Technology User:	Westinghouse Savannah River Company
Deployment Value/Impact: The FLUTE membrane (Ribbon NAPL Sampler) was used to delineate depth-discrete presence of NAPL in the subsurface.	
Vendor Name for this Technology:	FLUTE System for CPT
<u>Point of Contact:</u>	
User Program POC(s):	OST Program POC(s):
Bob Blundy (WSRC-ER) - Aiken, SC. Tel. 803-952-6788	John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532
Les Germany (DOE-SR) - Aiken, SC. Tel. 803-725-8033	Sharon Robinson (DOE-SR) - Aiken, SC. Tel. 803-725-5793
	James A. Wright (SCFA) - Aiken, SC. Tel. 803-725-5608
Technology User POC(s):	Vendor Company POC(s):
Brian D. Riha (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7807	Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE, Ltd. (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Saturated Zone) in Aiken, SC

Ribbon NAPL Sampler

(OST/TMS ID: 2238/ TMS Application ID: 1766)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The FLUTE Hydrophobic Flexible Membrane is a sampling device that provides detailed delineation of Dense Nonaqueous Phase Liquids (DNAPL) in a borehole. It is deployed via a reusable nylon liner, with a hydrophobic ribbon impregnated with dye, that when everted into a borehole creates a tight contact with the walls of the borehole. When deployed, the ribbon will absorb the DNAPL that is in contact with the membrane causing a color change in the dye. [Text Continued in TMS]

DESCRIPTION OF THE DEPLOYMENT	
Location:	Savannah River Site, Saturated Zone (Aiken, SC, United States)
PBS Name:	Upper Three Runs Project [SR-ER06, 0056]
Date of Deployment:	April 1999
Technology User:	Westinghouse Savannah River Company
Deployment Value/Impact: The FLUTE membrane system was used to delineate depth-discrete NAPL in the subsurface.	
Vendor Name for this Technology:	FLUTE System for CPT
<u>Point of Contact:</u>	
User Program POC(s):	OST Program POC(s):
Bob Blundy (WSRC-ER) - Aiken, SC. Tel. 803-952-6788	Sharon Robinson (DOE-SR) - Aiken, SC. Tel. 803-725-5793
Les Germany (DOE-SR) - Aiken, SC. Tel. 803-725-8033	James A. Wright (SCFA) - Aiken, SC. Tel. 803-725-5608
John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532	
Technology User POC(s):	Vendor Company POC(s):
Brian D. Riha (WSRC-SRTC) - Aiken, SC. Tel. 803-557-7807	Carl Keller (FLUTE, Ltd.) - Santa Fe, NM. Tel. 505-455-1300

Major Developers:

- FLUTE, Ltd.
- Savannah River Technology Center
- Westinghouse Savannah River Company

Vendor Company:

FLUTE, Ltd. (www.flut.com)

Other Deployments:

- Deployed (type: Non-DOE) in FY 1999 at Kennedy Space Center (Cape Canaveral Air Station. Launch Complex 34) in Cape Canaveral, FL
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (C-area Burning Rubble Pits) in Aiken, SC
- Deployed (type: Non-DOE) in FY 1999 at EPA Superfund Site (McCormick Barton Wood Preserving Plant) in Stockton, CA
- Deployed (type: DOE) in FY 1999 at Paducah Gaseous Diffusion Plant in Paducah, KY
- Deployed (type: DOE) in FY 1999 at Savannah River Site (321-M Solvent Storage Tank) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (A-014 Outfall) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Vadose Zone) in Aiken, SC

Soft-Sided Waste Containers

(OST/TMS ID: 2240/ TMS Application ID: 1560)

The Soft-Sided Waste Containers, developed by Transport Plastics Inc., and marketed as the Lift-liner(TM) Soft-Sided Waste Packaging System, includes a 25-mil woven and coated outer polypropylene fabric shell with a 40-mil high-density polyethylene inner liner. The outer shell is equipped with 18 lifting straps made of two-inch polyester seat belt webbing material. Each container has a capacity of 260 cf and holds up to 24,000 lbs. The containers meet the Department of Transportation requirements for transporting low specific activity and surface contaminated objects. The system also includes a loading frame used to support the shell and inner liner during loading and a lifting/spreader bar, which attaches to the lifting straps for hoisting the filled containers.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, Sewage Treatment Plant (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: June 1999

Technology User: INEEL

Deployment Value/Impact: Approximately 100 Soft Sided Waste Containers (SSWC) were filled with low-level radioactive waste and debris and shipped to the Radioactive Waste Management Complex. The SSWC is less expensive than the baseline metal containers. They are lighter and compact, and can hold three times as much as a metal box. They are easier to load in the field and decrease void space, minimizing future subsidence in the disposal facility. Wooden/Metal containers cost approximately \$20-\$25/ft³ of waste versus \$4-\$5/ft³ for the SSWC.

Vendor Name for this Technology: Lift-Liner™ Soft-Sided Waste Packaging System

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel.
208-526-6877

Vendor Company POC(s):

Al Beale (Transport Plastics, Inc.) - Sweetwater, TN.
Tel. 800-603-8277

Major Developers:

Transport Plastics, Inc.

Vendor Company:

Transport Plastics, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Naval Reactors Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Pantex (Firing Site #5) in Amarillo, TX

Soft-Sided Waste Containers

(OST/TMS ID: 2240/ TMS Application ID: 1561)

The Soft-Sided Waste Containers, developed by Transport Plastics Inc., and marketed as the Lift-liner(TM) Soft-Sided Waste Packaging System, includes a 25-mil woven and coated outer polypropylene fabric shell with a 40-mil high-density polyethylene inner liner. The outer shell is equipped with 18 lifting straps made of two-inch polyester seat belt webbing material. Each container has a capacity of 260 cf and holds up to 24,000 lbs. The containers meet the Department of Transportation requirements for transporting low specific activity and surface contaminated objects. The system also includes a loading frame used to support the shell and inner liner during loading and a lifting/spreader bar, which attaches to the lifting straps for hoisting the filled containers.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, Naval Reactors Facility (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: February 1999

Technology User: INEEL

Deployment Value/Impact: The Soft Sided Waste Containers were deployed at the Naval Reactors Facility to dispose of soil and debris. The SSWC is less expensive than the baseline metal containers. They are lighter and compact, and can hold three times as much as a metal box. They are easier to load in the field and decrease void space, minimizing future subsidence in the disposal facility. Wooden/Metal containers cost approximately \$20-\$25/ft³ of waste versus \$4-\$5/ft³ for the SSWC.

Vendor Name for this Technology: Lift-Liner™ Soft-Sided Waste Packaging System

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel.
208-526-6877

Vendor Company POC(s):

Al Beale (Transport Plastics, Inc.) - Sweetwater, TN.
Tel. 800-603-8277

Major Developers:

Transport Plastics, Inc.

Vendor Company:

Transport Plastics, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Pantex (Firing Site #5) in Amarillo, TX

Soft-Sided Waste Containers

(OST/TMS ID: 2240/ TMS Application ID: 1688)

The Soft-Sided Waste Containers, developed by Transport Plastics Inc., and marketed as the Lift-liner(TM) Soft-Sided Waste Packaging System, includes a 25-mil woven and coated outer polypropylene fabric shell with a 40-mil high-density polyethylene inner liner. The outer shell is equipped with 18 lifting straps made of two-inch polyester seat belt webbing material. Each container has a capacity of 260 cf and holds up to 24,000 lbs. The containers meet the Department of Transportation requirements for transporting low specific activity and surface contaminated objects. The system also includes a loading frame used to support the shell and inner liner during loading and a lifting/spreader bar, which attaches to the lifting straps for hoisting the filled containers.

DESCRIPTION OF THE DEPLOYMENT

Location: Idaho National Engineering and Environmental Laboratory, Auxiliary Reactor Area (Idaho Falls, ID, United States)

PBS Name: Decontamination and Decommissioning [ID-ER-110, 0564]

Date of Deployment: February 1999

Technology User: INEEL

Deployment Value/Impact: The Soft Sided Waste Containers were deployed at the Auxiliary Reactor Area for packaging soil, debris, and concrete rubble with rebar. The containers are less expensive than baseline metal containers. They are lighter and compact, and can hold three times as much as a metal box. They are easier to load in the field and decrease void space, minimizing future subsidence in the disposal facility. Wooden/metal containers cost approximately \$20-25/ft³ of waste vs. \$4-5/ft³ for the soft side waste containers.

Vendor Name for this Technology:

Lift-Liner(TM) Soft-Sided Waste Packaging System

Point of Contact:

User Program POC(s):

Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID.
Tel. 208-526-0645

OST Program POC(s):

Harold D. Shoemaker (DOE-National Energy
Technology Laboratory) - Morgantown, WV. Tel.
304-285-4715

Technology User POC(s):

Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel.
208-526-6877

Vendor Company POC(s):

Al Beale (Transport Plastics, Inc.) - Sweetwater, TN.
Tel. 800-603-8277

Major Developers:

Transport Plastics, Inc.

Vendor Company:

Transport Plastics, Inc.

Other Deployments:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Naval Reactors Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Pantex (Firing Site #5) in Amarillo, TX