Form 2

Technology Information	
Area	5
Title	Management Measures to Block Groundwater from Flowing into the Site
Submitted by	Fluor Federal Services, Inc.

1. Overview of Technologies (features, specification, functions, owners, etc.)

Proposed construction techniques for impervious walls:

- Freezing
- Large diameter mixing
- Grout injection
- Mix-in-place grout

Proposed techniques for covering surfaces

- Geotextiles
- Engineered plantings with effluent monitoring and collection systems
- Hard surfaces integrated with run on/run off control measures

Proposed techniques for collecting radioactive strontium:

- Phytoremediation
- Injectable in situ wall
- Desiccation
- In situ grouting
- Soil flushing

2. Notes (Please provide following information if possible.)

- Technology readiness level (including cases of application, not limited to nuclear industry, time line for application)
  - Fluor initiated a treatability study to evaluate the viability of using desiccation to treat technetium-99 in the deep vadose; preliminary results were promising, but additional study is required for both the technique and other constituents
  - Fluor tested injected and surface application of an apatite barrier to treat strontium-90 groundwater contamination at Hanford; also tested a concurrent phytoremediation system; preliminary data are promising, but addition work is needed
- Challenges
  - Regulatory and public acceptance
  - Space limitations
  - Unknowns in soil and geologic characteristics
  - Specific injectable mediums and plants to treat site-specific contaminants and conditions
- Others (referential information on patent if any)