Form 2

| Technology Information | |
|---|---|
| Area | 3 |
| Title | Removal of Radioactive Materials from the Seawater in the Harbor |
| Submitted by | Fluor Federal Services, Inc. |

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

Proposed technologies and approaches to remove radioactive materials from the seawater in the harbor:

- Source removal
- Aquifer tubes placed along shoreline to better monitor conditions and augment modeling
- Sediment mapping to identify potential hot spots in harbor sediments
- Hot spot removal through sediment vacuuming
- Dredging
- Absorbents
- Phytoremediation or microbial processes
- In situ stabilization with grout, foams, or other products

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 installed numerous aquifer tubes along the Columbia River to provide additional data on contaminants impacting the river
  - Most options are likely to need site-specific testing and potentially other data collection
- Challenges
  - Unknowns in sediment types, harbor and ocean water conditions, harbor floor conditions, tidal impacts, industry impacts, etc.
  - Impacts from government regulations and public concerns
- Others (referential information on patent if any)