

[Form 2 (to be reported to Committee on Countermeasures for Contaminated Water Treatment and to be disclosed to public)]

| Technology Information | |
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| Area | 6. Understanding the Groundwater Flow (Select the number from "Areas of Technologies Requested") |
| Title | Gamma Environmental Borehole Monitor |
| Submitted by | Lab Impex Systems Ltd |
| <p>1. Overview of Technologies (features, specification, functions, owners, etc.)</p> <p>Lab Impex Systems provide a standard COTS (commercial off the shelf) system for the measurement of gamma dose rates from below ground measurements.</p> <p>The system comprises an electric vehicle with a complete borehole monitoring system. The system includes a drive mechanism to deploy and recover a gamma detection sonde, a data collection unit and a data acquisition system. Result data is logged for archiving and monitoring purposes. The logged results may be transferred from the borehole monitoring system to a standard PC for later analysis.</p> <p>The system is designed for automatic measurements. The data collection unit is used to program measurement parameters for each borehole, and in operation the system automatically spools the detector sonde to the required depth and initiates a radiation count. At the end of the counting period the data collection unit retrieves the count information and passes a new depth parameter to the sonde. This continues automatically until all programmed levels have been monitored.</p> <p>Key features:</p> <ul style="list-style-type: none"> Automatically produces contamination profile Sonde probe for dose-rate measurement (0.1 $\mu\text{Sv/h}$ to 10 Sv/h) (optionally spectroscopy) Sonde probe fully proven in harsh, water logged environments Proven in use in borehole depths of up to 100 m | |



Borehole Monitor from Lab Impex Systems



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

- Technology readiness level (including cases of application, not limited to nuclear industry, time line for application)

The technology has been in use at a UK nuclear site in the UK for many years. The system is used to routinely assess groundwater contamination across the site. The system is tried and tested, and references and a demonstration can be provided. The lead time for supply would be approximately 4 to 6 months.

- Challenges

n/a

- Others (referential information on patent if any)

n/a

【Areas of Technologies Requested】

- (1) Accumulation of contaminated water (Storage Tanks, etc.)
- (2) Treatment of contaminated water (Tritium, etc.)
- (3) Removal of radioactive materials from the seawater in the harbor
- (4) Management of contaminated water inside the buildings
- (5) Management measures to block groundwater from flowing into the site
- (6) Understanding the groundwater flow