

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

| <b>Technology Information</b>   |   |
|---|---|
| Area:   | 5 Management Measures to Block Groundwater from Flowing into the Site |
| Title:  | Permeable Reactive Barrier (PRB)                                      |
| Submitted by:   | <b>The S.M. Stoller Corporation (Stoller)</b>                         |
| <p><b>1. Overview of Technologies (features, specification, functions, owners, etc.):</b></p> <ul style="list-style-type: none"> <li>• Permeable Reactive Barriers:           <ul style="list-style-type: none"> <li>• A permeable reactive barrier (PRB) is a zone of reactive material that extends below the water table to intercept and treat contaminated groundwater.</li> <li>• PRBs are frequently installed as a “wall” or trench to capture contaminants present in groundwater as it flows through reactive material.</li> </ul> </li> <li>• Benefits of PRBs           <ul style="list-style-type: none"> <li>• Passive system once installed. No pumping of groundwater required to capture contaminants.</li> <li>• Water will pass through the PRB and leave the contaminants in the reactive material. In that way, the water table will not buildup behind the PRB and will not result in increased pressures causing in-leakage into the F-1 reactor building or turbine building.</li> <li>• Minimal maintenance is required.</li> <li>• In situ technology.</li> </ul> </li> </ul> |   |
| <p><b>2. Notes (Please provide following information if possible.):</b></p> <p>a. <u>Technology readiness level.</u></p> <ul style="list-style-type: none"> <li>• PRBs are a mature technology that has been used by Stoller personnel at numerous sites to capture a wide variety of contaminants.</li> <li>• Stoller personnel are renowned experts in the application and use of PRBs.</li> </ul> <p>b. <u>Challenges.</u></p> <ul style="list-style-type: none"> <li>• Sometimes permeable barriers can become clogged with mineral precipitates. Stoller has extensive experience with the modification of the treatment media to improve residence time and reduce clogging.</li> <li>• PRBs can be used for many contaminants; however, tritium removal is not possible with PRBs.</li> </ul>  |   |