

## Success Story



### Operations Improvement at ICI

The nitric acid storage facility and adjacent nitric acid production plants have operated successfully since project completion with no environmental incidents associated with the nitric acid storage/import/export facility.

**Client:** ICI  
**Location:** Bristol  
**Scope of Work:** Environmental Consulting, Hazard Analysis, Project Design and Construction Management



### Benefits

- **The Right Project:** utilization of a Rapid Assessment of Spill Potential (RASP) study identified that a large conventional concrete bund to contain spillage was inappropriate.
- **Significantly Reduce Capital/Operational Costs:** provision of piping and control improvements delivered significantly lower (<50%) capital cost than traditional concrete.
- **Excellent Environmental Performance:** no leaks of acid or environmental incidents since commissioned.
- **Increased Operational Flexibility:** tanks/pumps can be interchanged and access to equipment was improved.
- **Improved Reliability:** novel use of microwave level and interlinking various pumping facilities provided inherent back-up systems allowing simple on-line maintenance and testing.

Following discussions with the Environmental Agency to improve nitric acid containment, ABB was chosen to carry out a Rapid Assessment of Spill Potential (RASP) study on the combined nitric acid storage facilities for two adjacent nitric acid production plants. The study on the ICI nitric acid storage facilities and adjacent nitric acid production plants clearly identified that by providing various process improvements a high level of integrity against nitric acid spillage could be achieved rather than resorting to the traditional expensive concrete bund approach. Also use of a concrete bund would present a number of operational problems such as access, confined space entry and disposal of rainwater.

Outflows from all tanks were interlinked and the two central tanks operated 90% of their volume. This provided spare capacity for tank overflows. An upgraded tanker import/export facility with pumping/pipework/control modifications enables the full storage capacity to be utilized at all times.

Novel engineering designs were employed to allow on-line testing of control equipment such as testing microwave levels and trips in situ.

The construction work was carried out while the plants remained operational with final installations being completed in a one week shut down. Work was completed within budget and with an excellent SHE performance.

The plant has operated successfully since project completion with no environmental incidents associated with the nitric acid storage/import/export facility.