# UK ATOMIC ENERGY AUTHORITY

Implements LABVANTAGE Enterprise LIMS for Site-wide Data Collection and Storage



## Company Background

A research site for the United Kingdom Atomic Energy Authority (UKAEA) had three test reactors - the Dounreay Fast Reactor (DFR), which operated from 1959 until 1977, the Prototype Fast Reactors (PFR), which ran from 1974 until 1994, and a materials test reactor (DMTR), which operated from 1958 until 1969. Over time, a variety of laboratories and chemical plants were bulit to handle the fuel for these reactors, and various facilities were developed for the chemical treatment, storage and disposal of the waste that arose from this program. The main function of these laboratories is emission testing (stacks), liquid discharge testing and analysis of various samples for internal customers. Some analysis data is reported to the regulatory agency, Scottish Enviornmental Protection Agency (SEPA), on a regular basis. Various types of analysis are done on these samples.

## Key Challenges

Data collection in the laboratories had evolved into a complex data management system, which consisted of 120 interlinked spreadsheets that produced a variety of reports and associated graphs. This system was quite cumbersome and required a very high degree of maintenance. In addition, if a process was changed, there was no assurance that the speadsheet would accomodate that change, and in fact, sometime it resulted in incorrect calculations and results reporting. Recognizing that a system change was needed, an analysis was completed and a number of possibilities were noted. These included:

- Maintain current system, which would require substantial resources.
- Do nothing, which was not viable.
- Upgrade the spreadsheet system, which would require a huge resource commitment and would be difficult to validate.
- Develop a software solution internally using an Oracle database and other tools, which would be very expensive.
- Purchase an off-the-shelf LIMS that could be configured to meet the needs of the laboratory.

The last option was the only one that was financially feasible.

> The available out-of-the-box products for specimen/storage/freezer management seemed best suited to non-enterprise systems meant mainly for individual labs.

## System Sought

The system needed to be flexible to meet the changing needs of the laboratories, expandable to allow for the addition of new laboratories and capable of certification to meet the governing authorities'

requirements. As well, the preferred technology had to be browser/server based for reduced IT maintenance costs. Functionality requirements included the ability to handle all of the data collection needs, graphing capabilities, and role-based security due to the nature of the data.

## System Selected

Their selection was primarily based on LABVANTAGE's reputation in delivering a quality LIMS solution and LABVANTAGE's advanced business process automation capabilities. In addition, LABVANTAGE was able to provide project management and delivery services to work with the in-house IT group.

## System Delivered

Since there is no online instrumentation interfacing required, all the data in the system is hand entered. In order to solve the problems associated with this type of data-entry-mistyping, etc., LABVANTAGE delivered a double entry system. In this case, two different laboratory personnel enter all data separately. The system checks to make sure that the entries are the same, and then a third person checks the validity of the data from a technical standpoint. Once this process is completed, the data is released for reporting. The system will be expanded to cover the other laboratories throughout 2003.

## Key Benefits

The ability of the IT team to fine-tune the system after delivery was an unexpected and valuable asset of the software. In addition, the responsiveness of LABVANTAGE when changes were requested and the ability of the software to handle these changes with minimal impact on the delivery timeline were found to be great benefits to meeting the delivery goals of the project.



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