

FAO the Editor

Press Release from Micronics Ltd – Culham Centre for Fusion Energy / UK Atomic Energy Authority

## **Micronics Clamp-on Flow Meters provide secure and cost-effective monitoring of cooling process in nuclear laboratory**

Reliable backup is absolutely vital in the nuclear industry including the Culham Centre for Fusion Energy (CCFE), the UK's national laboratory for fusion research, based at Culham Science Centre in Oxfordshire. Owned and operated by the United Kingdom Atomic Energy Authority CCFE hosts the world's largest magnetic fusion experiment, **JET (Joint European Torus)**, on behalf of its European partners.

For more than 30 years JET has used an in-line ultrasonic flowmeter to monitor the flow of the water cooling system for the site. For energy saving reasons the water cooling system operates in two modes, 'Silent Hours' and 'Normal Hours'. During 'Silent Hours' the flow demand is reduced to 700m<sup>3</sup>/h which means that only one of the four main 160kW pumps is running. The 'Normal Hours' mode is selected at the start of daily operations when the process opens up various valves on the distribution system. This is achieved with a PLC control system, which monitors flow demand from the in-line ultrasonic flow meter to sequentially control the three other pumps over a 20 minute period until all four pumps are running providing a total flow of approximately 3500m<sup>3</sup>/h.

Performance of the in-line flow meter was becoming unreliable and a decision was taken to install a backup system. CCFE already used a Micronics Portaflo 300 for portable monitoring and were confident that a Micronics Service Engineer could recommend a suitable fixed clamp-on meter to provide a permanent solution. The Ultraflo 3000 was chosen because it offered a non-invasive, quick and reliable flow measurement solution. With its easy to follow menu and simple set up it proved to be a cost-effective alternative to a traditional in-line meter installation. No installation drain down or pipe cutting was required and in addition dry servicing is possible so that downtime is kept to a minimum, absolutely vital in an industry which is so fast-moving.

David Gear, CCFE Technician, has total confidence in the Micronics product. **“It is crucial to have the ability to monitor the cooling process and the flow in the site cooling water circuits supplying cooling to various systems associated with the JET fusion experiment”**

The UK has had a thriving industry in the nuclear sector since the 1950's. Nowadays, the industry spans the full nuclear life cycle from the design of new plant through to decommissioning and waste management. And this example demonstrates that there is significant potential for replication throughout the nuclear industry.

For further information on this project or the Micronics range call Micronics on +44(0)1628 810456, or visit [www.micronicsflowmeters.com](http://www.micronicsflowmeters.com).

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**Note to Editor: For further information or images to support this release call David Leigh on 07770 404354 or email [DBL@leighandersonassociates.com](mailto:DBL@leighandersonassociates.com)**