



Aquila Nuclear  
Engineering

CONTAINMENT



## CASE STUDY

PROJECT TITLE: **VALVE BOXES**

CLIENT: **UNITED KINGDOM ATOMIC ENERGY AUTHORITY (UKAEA)**



### AIMS AND OBJECTIVES



Aquila won the contract for the design, manufacture, assembly and function testing of four WDS Valve Boxes for the United Kingdom Atomic Energy Authority (UKAEA).

### ABOUT THE CLIENT



The UKAEA researches fusion energy and related technologies, with the aim of positioning the UK as a leader in sustainable nuclear energy.

Nuclear fusion, the process that powers the Sun, can play a big part in our carbon-free energy future, UKAEA manages the UK fusion programme at the Culham Centre for Fusion Energy (CCFE) which is one of the world's leading fusion research laboratories.

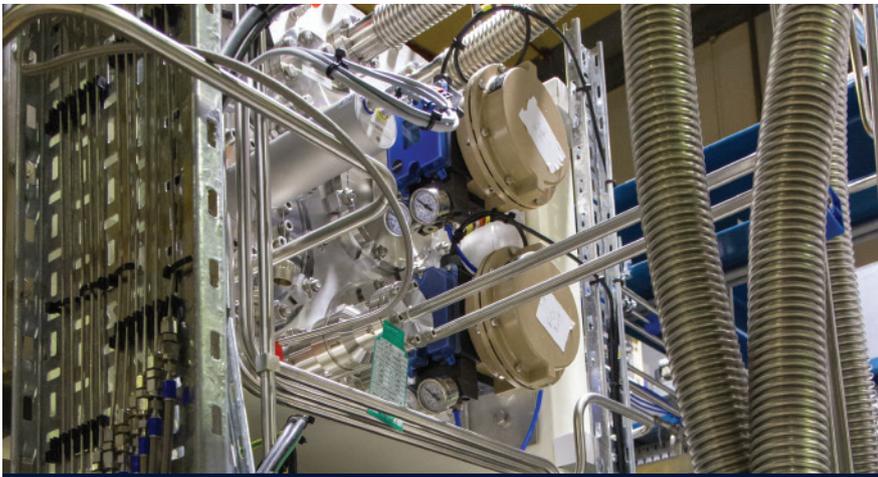


PHOTO CREDIT: UKAEA

## PROJECT OVERVIEW

### SCOPE AND PROJECT SOLUTION

Aquila won the contract for the design, manufacture, assembly and functional testing of four WDS Valve Boxes for the United Kingdom Atomic Energy Authority (UKAEA).

The valve boxes were designed as a flanged carcasses with control closure panels on each end, to aid manufacture and maintenance access, to which the primary pipework is mounted. Process control connections are located on the control closure panel, which the secondary pipework interfaces are located on the flanged carcass. Four mounting feet on the base of the flanged carcass support the complete assembly.

All primary process pipework and cabling was designed to be mounted onto a single closure panel – the control closure panel. A supplementary valve mounting plate, mounted to the control

closure panel, increases the surface area available for component mounting, maximising utilisation of the box volume, minimising the box footprint and the process line length, while delivering a lighter box construction.

#### VALVE BOX INTERFACES:

- Primary pipework – terminated in Swagelok Female VRC connections within the valve box
- Secondary pipework – terminated on CF flanged stubs (enabling secondary pipework to be designed to suit, without halting progress of the valve boxes)
- Instrument control interfaces (compressed helium) – Swagelok twin ferrule compression fittings
- Instrument control interfaces (electrical) – Lemo SWH hermetically sealed bulkhead connectors

### SUMMARY

Aquila took the outline proposal detailed in the UKAEA specification and developed a solution that was simple, practical and cost effective. created a design that enabled the control closure panel manufacture to be ‘fast-tracked’ through production, enabling early initiation of the primary pipework fabrication and associated components. The design also aided fabrication and installation through improved access around the components, creating cost savings through simplification.

Pragmatic, cost effective solutions, always



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### ACCREDITATIONS



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