Aquila Nuclear Engineering Ltd

eagle NEWS

The newsletter for the nuclear & nuclear medicine professional

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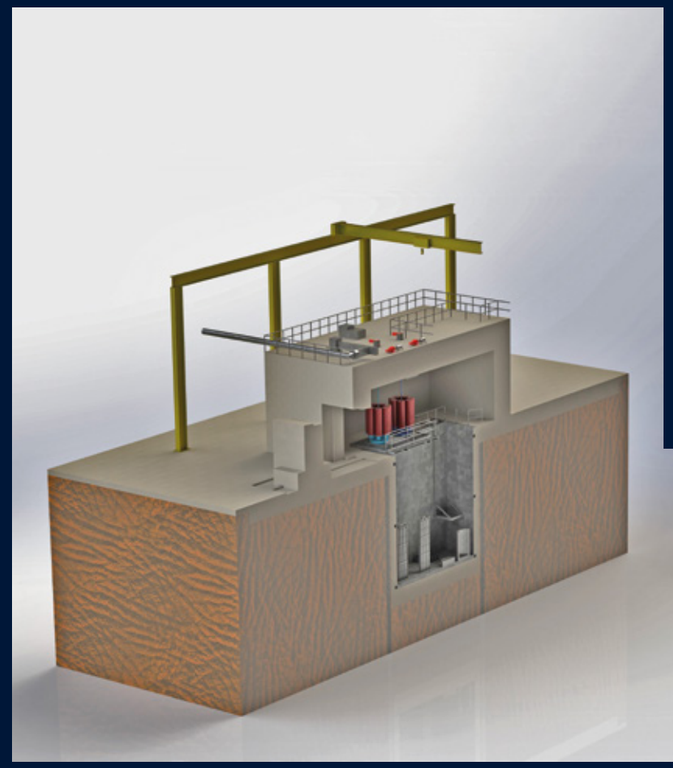
INTRODUCTION

“Well, I love it when a plan comes together and here we are with a good pipeline of opportunities, the best order book ever and our clients are singing our praises, we’re even making good profits too.

The efforts of the Aquila team are bearing fruit and we have stuck to our guns in offering pragmatic solutions in an open and honest way. Our delivery team is receiving unsolicited praise from our clients on how we go about executing projects and doing what we say we will do. Our business is now UK-wide, increasing into Europe and we have just started some Concept Design work in the USA. Not bad for a 7-year-old business in the demanding nuclear market.”

Dave Barker
CEO
Aquila Nuclear Engineering Ltd



CONTRACT WINS & DELIVERY

01 NUCLEAR MEDICINES

Aquila was awarded the contract to design, manufacture and install a new shielded effluent line employing hastelloy pipework, shielded by 300mm lead for the principal isotope employed for medical imaging.

02 NUCLEAR DECOMMISSIONING

Aquila was awarded a contract for the External Mixing system for the Hinkley Modular ILW Encapsulation Pre-conditioning Plant. This design and build contract is being assembled and tested within one of Aquila’s workshops in Winchester.

03 NUCLEAR RESEARCH AND DEVELOPMENT

Drum filling cubicle for tritium handling. Another design and build contract which was awarded following the submission of the design solution during the bid phase. Aquila offered simple pragmatic solutions to meet everything identified within the User Requirement Specification (URS).

04 NUCLEAR DEFENCE

Over the past 12 months, Aquila has been awarded a significant number of build-to-print contracts whereby our customers engage us to manage the procurement of all proprietary items sub contract manufacture. All components are then assembled and tested in our workshops prior to factory acceptance testing.

01

02

03

04

DISCLAIMER:
This project has been carried out within the framework of the Contract for the Operation of the JET Facilities and has received funding from the European Union’s Horizon 2020 research and innovation programme. The views and opinions expressed herein do not necessarily reflect those of the European Commission.

Aquila Multi-Functional Cell

The Multi-Functional Cell (MFC) will consist of a stainless-steel containment, surrounded on the front face by façade shielding and cladding, lead glass window, 2 La Calhene master slave manipulators (MT120), various windows, access ports, glove ports, gland plates and sealing arrangements to allow clients and operators to interact with and trial In-Cell equipment. These penetrations have been designed and manufactured to both Sellafield and Aquila standards.

The decision to invest in the design and manufacture of a demonstration MFC derives from the level of interest from our nuclear and nuclear medicines clients who want to experience the use of a shielded facility 'hands on'. Also, this facility is available to use without having to enter a licenced nuclear site. The MFC will allow our clients to test their own process or equipment inside the cell to gauge ease of use in operation and for maintenance purposes.

Aquila Nuclear Engineering Ltd is the sole UK distributor for Getinge La Calhene products, all of which are used on containment and shielded facilities. Getinge La Calhene is the world's leading supplier in manipulators and containment-related equipment and is a principal partner in the production of the MFC. Aquila personnel have received comprehensive training in France on the full range of Getinge La Calhene products on offer, including manipulators and DPTE posting ports.

The advantages of being able to host trials with our client at our site means we can also help with the design and demonstrate our client's processes.

BUILT WITH OUR PARTNERS

- Getinge La Calhene
- Universal Fabrications
- Hayneswood
- Helander Precision
- Silchester Controls

THE MFC WILL:

- Be the only trails and demonstration facility of its kind in the UK, to include 2 x MSMs and lead glass windows
- Provide a focal point for the UK Hot Cell and Glove Box industries
- Encourage early engagement with Aquila to focus on the contained and shielded process
- Demonstrate the capabilities of Aquila and our supply chain partners
- Allow clients to 'mock up' their containment design, train operators, trial manipulators and perform equipment trials in an inactive, safe and easy-to-access environment
- Encourage operator involvement during the design phase and validate operation and maintenance activities
- Provide a central point for Aquila and our supply chain partners to display product and services information

SPECIFICATION

1. CONTAINMENT

This has been designed and manufactured in SS304L in accordance with the Sellafield Alpha Glove box standard ES_0_1503_1-IMEC 1.

2. SHIELDING

Shielded cells can vary in shielding thickness from 50mm to up to 300mm of lead or lead equivalent. Rather than shield the whole facility, we have only included a section in lead chevron. With the modern manufacturing plant at our sister company's site, shielding is now normally supplied in single lead slab form.

3. MASTER SLAVE MANIPULATOR

The Getinge La Calhene MT120 MSM have been installed on this demonstration facility. This model is versatile with a reach of up to 1440mm and duty of 12kg. We have installed a detachable and non-detachable Master Arm with a short length slave arm. These MSMs are powered by the control panel mounted on the front face. The long length slave arm can go up to 2040mm.

4. DOUBLE LIDDED POSTING PORT

The Getinge La Calhene DPTE190 has been installed on the containment shell. This allows for the safe transport of active material into and out of the containment. A shielded version of the DPTE can also be provided and used in conjunction with the Getinge La Calhene PADIRAC system.

5. VIEWING

SHIELDED WINDOW
We have incorporated a standard 150mm thick lead glass window and mounting system for viewing. In addition, we have allowed for the inclusion of a camera inside the cell, together with viewing options from outside the cell.

NON-SHIELDED WINDOW
The MFC incorporates a range of non-shielded windows designed and manufactured to either the Sellafield or Aquila specification.

6. LIGHTING

A minimum of 500 Lux lighting is provided with both the standard Sellafield unit, or the Aquila unit.

7. SHIELDED TONG BALL

Traditional tong balls have been installed over the years to match the Cell shielding thickness . Aquila has a design for a hinged sphere tong unit which enables the whole tong assembly to move away from the cell. This is employed in the nuclear medicines industry where access to the inside of the cell is safe, once the isotope has been removed from the environment.

8. CONTAINMENT PORTS

The MFC includes a range of glove ports, including 6" and 7-9/16" standard glove ports and Getinge La Calhene AD and J2L glove ports together with an AD bagging port.

9. PENETRATION

Standard penetrations have been included in the design for:

- Gland Plates: Electrical/Pneumatics and Hydraulic command
- Push Through Filter Housing: This connects to the active ventilation
- Vertical Posting Out Port: Typically used to post out waste from the cell to transport container positioned under the box floor.

VALUES & EXPANDING TERRITORIES

Our client and project portfolio is strong and diverse with a good mix of front end design, detailed scheme design, build to print and full turnkey design-build-install. We have very strong relationships with our key manufacturers in each product category – small/medium machining – medium/large machining- class 1 nuclear fabrication and Class 2-3 nuclear fabrication. With this breadth of manufacturing resource we are able to successfully manage a wide range of contract sizes and values each with its own quality specification.

Aquila has an enviable reputation in the UK, constantly delivering first-class projects to its client base.

WE STRIVE TO PROVIDE

EXCELLENCE in everything we do

An environment for the highest **ETHICAL** behaviour

The most **ELITE** service in our field

Our plan going forward is to expand our territories for doing business. We already have contracts and live opportunities from:

- Austria
- India
- Norway
- Holland
- USA
- Spain
- France

TRAINING & DEVELOPMENT

The plan ahead

Aquila is achieving the business objectives we set ourselves three years ago and we are now onto the next stage of development which is focused on the Aquila Team.

We already have the infrastructure, accommodation, financial resources and pipeline of work to commit to an ambitious sustainable development, training and recruitment plan which will serve us for the next three years. This plan includes professional development for all Aquila personnel plus the recruitment of apprentices, undergraduates and graduates who will be helping us with internal development projects to serve the nuclear and nuclear medicines markets.

Our STEM activities are supported by the Engineering Development Trust (EDT) which is a national body dedicated to supporting younger, technically-minded students.

EDT Inspiring future engineers & scientists

Technical lecture

The Institution of Mechnical Engineers recently invited Dave Barker, CEO, Aquila Nuclear Engineering to lead a Technical Lecture at the University of Southampton.

On Thursday 18 October, 2018, Dave delivered the lecture, discussing the nuclear heritage on the south coast and providing a timeline of nuclear power generation, past, present and future, from Chicago Pile 1 through to UK research reactors, Magnox and a range of reactor types.

Dave's 35 years of experience gave a great deal of insight into the engineering and applications of the nuclear industry. Including details about the nuclear markets of decommissioning, research and development, defence, plant life extension, new power stations & medicines used for therapy and treatment.

EVENTS AND NEWS

Aquila presented at the 55th edition of the Annual Meeting on Hot Laboratories and Remote Handling (HOTLAB) in Helsinki, Finland, hosted by the Technical Research Centre of Finland Ltd (VTT).

Held on 16-20 September 2018 at Helsinki Congress Paasitorni, this was Aquila's fifth consecutive visit to the HOTLAB Conference which has become the major global forum for technicians, operators, engineers, researchers and suppliers, working at and developing nuclear Hot Cell facilities.

Aquila's Senior Mechanical Engineer, Gary Butler, delivered a presentation and technical paper entitled 'Fit For Purpose Design For Remote Operations: Handling The Hot Potatoes', providing an insight into how Aquila has delivered pragmatic, fit-for-purpose solutions to clients facing challenging 'In Cell' projects. Aquila's new Hot Cell-focused exhibition stand provided the perfect platform to engage with delegates and network throughout the conference. The presentation was extremely well received and generated a great deal of interest, prompting a variety of delegates to visit Aquila's stand to discuss the challenges they face and Aquila's capabilities.

The three-day conference included 47 technical presentations, networking & exhibition sessions and a poster session showcasing 23 projects. This was then followed by a technical tour of the brand new VTT Hot Cell Facility and a tour of the Posiva Final Repository.

With over 140 delegates, representing 21 countries, the event offered Aquila a truly global overview of the Hot Cell Market and extensive opportunities to discuss Aquila's capabilities with existing and potential clients. The event also provided a platform to discover how international Hot Cell users are developing technologies, utilising their Hot Cells, and what plans they may have for new facilities.

Aquila is looking forward to next year's HOTLAB being held in Mamallapuram, India.

ATTENDED AND UPCOMING EVENTS

01ST NOVEMBER 2018
8th NDA Estate Decommissioning Supply Chain Event, Manchester

05-06TH NOVEMBER 2018
BEIS Small Reactor Technology Conference, Coventry

15TH NOVEMBER 2018
Welsh Nuclear Forum Members Conference, Chester

04TH DECEMBER 2018
Design Services Alliance Supplier Forum, West Cumbria

06TH DECEMBER 2018
NIA Annual Conference, London

06TH DECEMBER 2018
Silver Sponsors for the NI/NIA Annual Dinner, London

FIND OUT MORE

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