



INDUSTRY BRIEF

# Nuclear

Dependable control for  
decommissioning, waste treatment  
and site services.



Control system engineering, integration and analytics since 1997  
ISO 9001 certified • Cyber Essentials • CHAS • Constructionline • SafeContractor

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## YOUR PRIORITIES

# What matters most

Nuclear licensed sites carry out decommissioning, waste treatment and site services under close regulation by the ONR. Every change to plant and its control systems must fit the site's safety case, pass through the licensee's arrangements and be backed by evidence, often on ageing systems that have to keep running for decades.

### Working to the safety case

The site's safety case sets the safety classification of each function. Control systems must be designed, documented and tested to the level it requires, with evidence your safety case owners can use.

### Modifications under control

Under the site licence, changes to plant need proper categorisation, review and approval. Clear design documents, tested software and complete records make each change easier to justify and accept.

### Plant that lasts decades

Decommissioning and waste programmes run for decades. Obsolete controls must be replaced without disrupting operations, with systems your team can maintain long after the project ends.

### Security and cyber

Control systems on a licensed site fall within its approved security arrangements. Networks, remote access and removable media must be designed and managed to meet them.

## WHAT WE WORK ON

### Systems we engineer

- Ventilation and filtration control
- Waste treatment and packaging plant
- Effluent treatment plant control
- Site utilities and infrastructure
- Obsolescence upgrades and migrations
- Alarm handling and control room HMIs

## PLATFORMS WE WORK WITH

Siemens TIA Portal, S7 and PCS 7 • Rockwell • ABB  
• Schneider • Mitsubishi • Beckhoff • Emerson  
DeltaV • Honeywell • GE • WinCC, Ignition, AVEVA  
(Wonderware), FactoryTalk, iFIX and Citect SCADA

### What this means on your project

On a licensed site, the licensee stays in control. We work within your arrangements for modifications, quality and security, match design effort and evidence to the classification your safety case sets, and prove new logic against a simulation before it reaches site. You get the design, code and records to run, maintain and justify the system.

## STANDARDS

## The standards that shape your project

Customers ask us first about standards. These are the ones we meet most often in this sector, and what they mean in practice.

| Standard                                            | What it covers                                                                                                                | How we work with it                                                                                   |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>ONR Safety Assessment Principles</b>             | The principles the ONR uses to judge safety cases, including for control and instrumentation.                                 | Design and evidence prepared so they support your safety case against the relevant principles.        |
| <b>Nuclear site licence conditions</b>              | Conditions on every nuclear site licence, such as LC 17 management systems and LC 22 modification.                            | We work within your licence-condition arrangements for design, change control and records.            |
| <b>IEC 61513</b>                                    | General requirements for I&C systems important to safety in nuclear power plants.                                             | Where your arrangements call it up, we follow its lifecycle and documentation requirements.           |
| <b>IEC 62138</b>                                    | Software for computer-based nuclear I&C systems performing Category B or C functions.                                         | Where it applies, software is developed, verified and documented to the rigour its category requires. |
| <b>IEC 61508</b>                                    | Functional safety of electrical, electronic and programmable safety-related systems, across the whole safety lifecycle.       | Safety functions designed, verified and tested against their specification and target integrity.      |
| <b>Nuclear Industries Security Regulations 2003</b> | Security of civil nuclear sites, including cyber security, which the ONR assesses against its Security Assessment Principles. | Networks and remote access designed to fit the site's approved security plan and cyber arrangements.  |

*The standards listed are those most often relevant to control-system work in this sector. Which apply to your project, and how, is agreed with you at specification stage.*

### The evidence you receive at handover

|                                   |                                     |                                       |
|-----------------------------------|-------------------------------------|---------------------------------------|
| ✓ Functional design specification | ✓ I/O list and cause-and-effect     | ✓ Alarm list and HMI interface        |
| ✓ FAT and SAT records             | ✓ As-built drawings and source code | ✓ Method statements for common faults |

## ABOUT MATRIX

### Standards-led, fully documented control systems that you own and can support.

Matrix International (UK) Ltd has designed, built and supported industrial control systems since 1997. We take projects from specification and electrical design, through PLC, DCS and SCADA software, to installation, commissioning and long-term support, and we build the analysis software that shows how a plant is really performing. We are ISO 9001 certified and hold Cyber Essentials, CHAS, Constructionline and SafeContractor accreditation.

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## HOW WE DELIVER

# From specification to long-term support

### 01 Specify

Requirements, applicable standards and risks agreed with you up front, itemised into a clear plan.

### 02 Design

Electrical and control design, PLC/DCS and SCADA software, to your standards and ours.

### 03 Test

Logic proven against a simulated plant, then factory acceptance testing before anything reaches site.

### 04 Commission

Installation, commissioning and site acceptance testing, planned around your operation.

### 05 Hand over

Full documentation, method statements for common faults, and training for your team.

### 06 Support

Maintenance, upgrades and analysis for the life of the system, with 24/7 cover under a support agreement.

## WHY MATRIX

# Why customers choose us

### Standards first

An ISO 9001 certified quality system, designing to the standards your sector demands, plus any you specify.

### You own the system

Clear structure, open interfaces and complete documentation, so you can support it yourself or with any vendor.

### Tested before site

Control code is version-controlled and tested against a simulated plant before factory and site acceptance.

### Multi-vendor

Siemens, Rockwell, ABB, Schneider, Mitsubishi, Beckhoff, Emerson, Honeywell and GE platforms.

### In it for the long term

For us a project is not finished until the control system is decommissioned. 24/7 support is available under a support agreement.

## OUR PROMISE

**Standards-led, fully documented control systems that you own and can support.**

**Talk to us about your project**

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