



# NESS Energy Enhances Safety and Boosts Efficiency During its outage with DCSMS



Aberdeen NESS EfW

## DCSMS (Digital Confined Space Management System)

### Earls Gate Energy-from-Waste Facility

The Earls Gate energy-from-waste (EfW) facility in Scotland plays a key role in sustainable energy production by converting approximately 300,000 tonnes of residual waste into green electricity and steam annually. The waste used in this process is sourced primarily from the UK and arrives at the facility by road. Earls Gate is committed to sustainable practices and operates under strict environmental and safety standards, contributing significantly to the circular economy.

Each year, the entire facility undergoes a scheduled maintenance shutdown lasting 3–4 weeks. Safety is paramount during this period, with 200–250 contractors working on-site. This case study highlights how LRES-UK utilises the Digital Confined Space Management System (DCSMS) to enhance safety during outages. By implementing digital confined space management, LRES-UK minimises risks, improves monitoring, and ensures efficient coordination, setting a new standard for safe and effective maintenance practices.

### A Benchmark for LRES-UK's Success in Digital Confined Space Management

Earls Gate is the perfect example of LRES-UK's continuous success in executing digital confined space management through the DCSMS. The site showcases how LRES-UK has seamlessly integrated the system, leveraging its capabilities to enhance operational efficiency while maintaining the highest safety standards. This success highlights LRES-UK's expertise in safety optimisation and sets a new benchmark within the industry.

By leveraging the power of the DCSMS, we combine cutting-edge technology with our extensive industry expertise, positioning LRES-UK as a market leader in digital confined space management. This innovative approach not only sets us apart in the market but also empowers our clients to achieve enhanced safety, increased efficiency, and greater peace of mind—knowing that their confined space operations are being closely monitored and managed to the highest standards.

## PROJECT

### COUNTRY/REGION

Scotland, Aberdeen

### INDUSTRY

Energy

### DURATION:

04/03/2024-17/03/2024

### TOTAL CONTRACT

#### VALUE:

£105,114.58

### SCOPE

Boiler house and turbines  
30 contractors, 475 workers

# “Safety is paramount for us.”

John Black, Plant Manager

"Safety is our highest priority. Previously, ensuring the safety of maintenance workers in confined spaces relied solely on communication protocols and compliance agreements. By equipping confined spaces with cameras, we now have real-time visibility into what is happening inside. LRES played a crucial role in implementing this solution, providing expert support in setting up and managing the monitoring systems, ensuring that every aspect of confined space safety was optimised for better oversight and incident prevention." John Black.

LRES-UK installed and operated the Digital Confined Space Management System (DCSMS) to enhance safety, improve efficiency, and streamline the overall management of the maintenance shutdown.

## The key tasks carried out by our team included:

### Comprehensive Site Evaluation:

LRES-UK conducted thorough initial surveys to identify areas requiring confined space entry monitoring. Key locations, including the turbine hall, ash handling zones, and critical access points in the boiler system, were assessed to ensure optimal coverage for safety.

### DCSMS Deployment:

LRES-UK led the deployment of high-definition cameras and automated confined space monitoring systems, installing them in strategic locations across the site. This setup provided a live feed to the central control hub, enabling our team to actively monitor all confined space operations in real time, ensuring swift responses to any potential safety concerns.

### Integration with Site Protocols:

Our team tailored the DCSMS to align with the site's existing safety standards and maintenance workflows. LRES-UK ensured that the system was seamlessly integrated, minimising disruption while enhancing safety measures across the site.

### Real-Time Safety Monitoring:

By automating the tracking of confined space entries and exits, LRES-UK reduced the need for manual oversight and increased the overall efficiency of safety monitoring. This real-time tracking provided immediate visibility, enabling our team to proactively address any safety concerns and ensure the well-being of all personnel involved in maintenance activities.

Through these actions, LRES-UK used the DCSMS to create a safer, more efficient work environment, significantly reducing the risks associated with confined space operations.

### Unique Features

The DCSMS deployed at Earlsgate Energy includes several innovative features designed to enhance safety and efficiency during maintenance:

- **Digital Access Control:** Ensures only authorised personnel can enter confined spaces, reducing the risk of unauthorised access.
- **Real-Time Monitoring:** Utilises high-definition cameras, gas detection units, and alarm systems to provide continuous oversight of activities within confined spaces.

- **Seamless Communication:** Equipped with intercom systems to facilitate instant communication between contractors, DCSMS operators, and the operational team.
- **Centralised Monitoring Hub:** A dedicated trailer houses operators who monitor all confined space activities around the clock, ensuring rapid response to any incidents.
- **Customisable Deployment:** Flexible configurations allow the DCSMS to adapt to the unique requirements of any project, ensuring complete coverage and optimised safety performance.

The data and real-time video streams are monitored continuously in a dedicated trailer outside the facility. Here, DCSMS operators oversee the live feed, maintain contact with contractors working in confined spaces, and coordinate with Earlsgate Energy's operational team when necessary.

This system enables efficient and remote monitoring of confined spaces:

“With the DCSMS, we have continuous monitoring of confined spaces 24/7. It's very beneficial to have live readings at any point, saving significant time and ensuring safety.”

– John Black, Plant Manager





DCSMS cameras and monitoring units on-site

### Added Value Brought to the Contract

The implementation of the Digital Confined Space Management System (DCSMS) at the Earlsgate Energy site delivered several measurable efficiencies:

- **Faster Task Completion:** By streamlining communication and centralising monitoring, teams were able to work more efficiently, completing tasks such as ash removal and boiler repairs 15% faster than in previous shutdowns.
- **Safety Incidents Eliminated:** Automated monitoring drastically reduced risks associated with confined space entry, resulting in zero safety incidents during the project.
- **Cost Optimisation:** Improved coordination reduced overtime and prevented costly delays, contributing to more efficient resource management.
- **Real-Time Problem Resolution:** The visibility provided by the DCSMS allowed site managers to identify and resolve potential issues immediately, minimising downtime and ensuring operations ran smoothly.

### Conclusion

By implementing LRES-UK's Digital Confined Space Management Strategy, Earlsgate Energy successfully enhanced safety, efficiency, and collaboration during scheduled outages. The system's flexibility, combined with the expertise of LRES-UK's highly trained operatives, ensures the facility continues to set new benchmarks for operational excellence in the energy-from-waste sector.

*“The DCSMS has significantly reduced waiting times and lowered our costs.”*

John Black, Plant Manager