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Press Release

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The Vital Role of Inspection in Realising the Future of Nuclear Energy

As the world grapples with the dual challenges of meeting rising energy demands and reducing carbon emissions, Dr David Hall, Vice President of Inspection at Bilfinger UK, writes about the nuclear industry as it stands at a pivotal juncture. Projects like EDF's Hinkley Point C (HPC) epitomise the promise of nuclear energy as a safe, reliable, zero-carbon power source. Delivering this promise requires an often-overlooked, but critical component: rigorous and continuous inspection.

Hinkley Point C: A Benchmark for the Future

Hinkley Point C is not just another nuclear power plant; it is a flagship project that sets new benchmarks for the industry. As the first new nuclear power station to be built in the UK in almost 30 years, HPC symbolises a significant investment in the country's energy infrastructure and its commitment to a sustainable future. With its capacity to generate a total of 3.2 gigawatts of electricity, HPC will power six million homes and provide around 7% of the UK's electricity needs.

However, the complexity and scale of HPC brings unique challenges, especially in terms of ensuring safety, quality and reliability. This is where the role of inspection becomes paramount. At Bilfinger UK, we are at the forefront of providing robust and fully-qualified inspection services that help to ensure that every component of this monumental project meets the highest standards, now and over the 60 years of its expected lifespan.

Inspection in the nuclear industry is not merely a procedural necessity; it is the bedrock of safety, reliability and operational excellence. The consequences of a material failure in any power plant can be catastrophic, more so for a nuclear power plant, which is why this project has the highest quality standards of any industry, bar none. Every weld, pipe and structural element must undergo meticulous scrutiny and testing against the highest standards using validated methods and procedures and fully competent persons, with every component and test fully traceable.



Bilfinger UK is a Tier 1 Contractor responsible for the safe and efficient delivery of inspection services across the site. We employ a range of non-destructive testing (NDT) methods to detect imperfections that are invisible to the naked eye, ensuring that every component is free from defects that could compromise safety, or performance.

The nuclear industry's reliance on tried and tested methods has often made innovation and development of techniques difficult to implement, however the scale and complexity of Hinkley Point C along with EDFs commitment to optimisation of processes provides the perfect environment for development, testing and implementation of new, more comprehensive technologies which enhance both the efficiency and accuracy of inspections. However, the requirement for safety and assurance is rightfully uncompromising, which tempers the pace of adoption.

Bilfinger are playing a key role in the validation of Advanced NDT (ANDT) methods such as Phased Array Ultrasonics (PAUT) to replace conventional radiography. This requires extensive testing to ensure compliance with very demanding design and construction standards for pressurised equipment relating to pressurised water reactors. The effective application of PAUT offers the potential to reduce inspection costs by 60-80% in comparison to conventional radiography.

The scale and complexity of the project is truly beyond superlatives, requiring close collaboration and cross-industry partnership to meet the project demands. At Bilfinger UK, we work closely with our partners and other stakeholders, to ensure a seamless integration of inspection services throughout the project lifecycle, ensuring compliance with safety standards and regulatory requirements.

This project offers unprecedented opportunities for growth and development for talented, passionate and skilled people. However, the scale of demand for resources can't fully be met by one contractor, hence our collaborative approach to reduce the risk to the project. In addition, and as part of our commitment to the project, Bilfinger UK now has 20 NDT inspection apprentices on site and planning to double that number over the next 2 years.

As we look to the future, the demands for inspection services in the nuclear industry will only grow in importance. Projects like Hinkley Point C and Sizewell C are not just about generating electricity; they are about setting new standards for safety, quality, and sustainability in the energy sector.




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At Bilfinger UK, we are proud to be working with EDF and our partners on this historic project, to be at the forefront of this exciting endeavour, leveraging our knowledge, expertise and innovative technologies to ensure the highest standards of inspection in our industry. Our commitment to safety, quality and operational excellence is uncompromising and will help Bilfinger to play our part in helping the UK deliver its commitment to a sustainable and secure energy future.

Bilfinger is an international industrial services provider. The aim of the Group's activities is to increase the efficiency and sustainability of customers in the process industry and to establish itself as the number one partner in the market for this purpose. Bilfinger's comprehensive portfolio covers the entire value chain from consulting, engineering, manufacturing, assembly, maintenance and plant expansion to turnarounds and digital applications.

The company delivers its services in two service lines: Engineering & Maintenance and Technologies. Bilfinger is primarily active in Europe, North America and the Middle East. Process industry customers come from sectors that include energy, chemicals & petrochemicals, pharma & biopharma and oil & gas. With its ~30,000 employees, Bilfinger upholds the highest standards of safety and quality and generated revenue of €4.5 billion in financial year 2023. To achieve its goals, Bilfinger has identified two strategic thrusts: repositioning itself as a leader in increasing efficiency and sustainability, and driving operational excellence to improve the organizational performance.

You can find additional information, photographs and videos at  **BILFINGER** 