



Design for inspection

By considering measurement and verification requirements early in the product development cycle, we can help you reduce cost and risk in manufacturing.

Nuclear and other energy sectors often require components with large dimensions but tight tolerances – a combination which can be beyond the capabilities of standard measurement techniques. To ensure safe operation throughout a component's life, we offer design for inspection (DFI) studies to put metrology requirements at the heart of product development.

Your challenge

A DFI study can add value if:

- You are designing a new product and need to ensure the design can be measured efficiently.
- You need an independent review of your inspection strategy.
- You need support to develop a robust inspection plan for your component.

Our service

- We consider the inspection methods and instruments used to certify component and product conformity, early in the design process.
- We review your measurement needs and business drivers, based on your drawings, site visits, and discussion with your design teams.
- We review your designs against factors such as datum structure, tolerances, accessibility, and the effects of surface finish.
- We provide a detailed report, with evidenced recommendations for your design.

Benefits

A DFI study can help you:

- Reduce the risk of problems during manufacture.
- Reduce costs during production and inspection.
- Ensure your business is meeting the needs of your client.

Our expertise & capabilities

The Nuclear AMRC simulation and verification group includes around 20 research engineers, post-doctoral research associates and project managers, delivering multi-disciplinary programmes for industry customers of all sizes. We offer access to a wide range of state-of-the-art equipment and software, and are constantly looking to push the boundaries of current technology to solve manufacturing challenges for our partners and customers.

We are pioneering design for inspection (DFI) techniques for nuclear and other quality-critical industries, based on our expertise in large-scale metrology and the Nuclear AMRC's established experience in design for manufacturing techniques.

For more information, contact

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The Nuclear Advanced Manufacturing Research Centre, part of the High Value Manufacturing Catapult, helps UK companies improve their capabilities and performance for nuclear and other high-value industries.

We focus on large-scale high-precision manufacturing processes for quality-critical applications.

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Process

A typical DFI study includes the following steps:



1 Scoping and planning

We work with you to scope out the project and develop a delivery plan. We will provide a statement of work detailing our scope, costs and timescales. DFI studies typically take six to eight weeks.



2 Understanding your needs and drivers

We review your product drawings, relevant codes and standards and your current measurement process. We then agree the criteria for assessment.



3 Design workshops

We conduct a series of workshops to review the key measurement features of your component or system. Your team will take part to provide guidance on challenging features, and develop your own experience of the DFI process.



4 Present findings

We present our findings with conclusions, underpinning evidence and recommendations.