



# POSITION STATEMENT: SUPPORTING NUCLEAR PROFESSIONALS IN THE ERA OF ARTIFICIAL INTELLIGENCE



## Introduction

Artificial Intelligence (AI) is transforming industries across the globe, and the nuclear sector is no exception. From enhancing safety systems to optimising operations, AI offers nuclear professionals powerful new tools. As the UK's professional body for the nuclear workforce, the Nuclear Institute (NI) is committed to ensuring our members are equipped to harness these opportunities and to navigate the challenges, so that AI adoption delivers real value to both professionals and society.

## What does AI mean for Nuclear Professionals?

- a. **Improving Efficiency, Decision-Making and Safety:** AI offers tools and capabilities that empower nuclear professionals across a range of disciplines, and have the potential to transform the sector. AI provides the tools to reduce effort on repetitive tasks, bring to attention the important details of a safety case and provide decision-makers with the evidence to deliver the changes required.
- b. **Collaboration and Connecting People and Data:** Exploiting the potential of AI will require increased collaboration across the sector. The sector is however quite fragmented, and we need to organise to overcome barriers to knowledge and data sharing to deliver the innovation that AI promises.
- c. **Professional Development:** We are an industry of skilled professionals with technical backgrounds in engineering and science. AI could bring opportunities to our members, delivering new skills that increase the mobility across and beyond the sector allowing us to meet the rapid growth required to succeed.
- d. **Regulation and Culture:** Our professionals require support to navigate the complex questions around trustworthiness, explainability and transparency against the background of emerging policy and standards. We will see a significant culture shift within organisations driven by both the regulation and opportunities of AI.
- e. **Security and Cyber Resilience:** Taking a data-centric approach in the nuclear sector increases exposure of both professional and personal information to new external threats. Our members need guidance and support to manage these risks effectively while leveraging the opportunities that AI offers.

## NI's Role in Supporting Nuclear Professionals

In alignment with our strategic ambitions of Developing, Amplifying, Excelling, and Connecting, the NI is committed to supporting members and the broader nuclear community in leveraging the benefits of AI responsibly and effectively. Primarily through the AI4Nuclear group, which forms part of our special interest group for digital (DIGSIG) and through personal development initiatives we are committed to the following:

- a. Providing members with a guidance framework to help them on their career journey and to create opportunities for our members, showing the way to remove burdensome or unnecessary barriers to the adoption of AI.
- b. Building Skills and Knowledge: providing members with access to resources, workshops, and training programmes focused on AI applications within the nuclear sector.
- c. Providing forums to facilitate collaboration, share insights and best practices through events and webinars. Through forums such as AI4Nuclear we will encourage debate on the many challenges of effectively adopting AI in the nuclear sector.
- d. Providing access to information on the development of legislation and regulation that promotes ethical and responsible AI use. We will promote standards that ensure AI supports human expertise, keeps people safe, and maintains public trust.
- e. Amplifying the Voice of the Sector: We advocate for nuclear professionals to have a say in how AI is used and regulated, ensuring their expertise shapes the future of AI policy and practice, and ensuring their expertise informs the integration of AI into the UK's nuclear industry.

## Commitment to our members

a. The successful adoption of AI in the nuclear sector relies on the skills and dedication of our professionals. We will work tirelessly to ensure that nuclear professionals are empowered to embrace AI as a tool for innovation, collaboration, and excellence. We therefore make the following commitments:

- To provide practical guidance and training tailored to the needs of nuclear professionals.
- Facilitate forums for sharing best practice and addressing challenges.
- Advocate for ethical, responsible, and secure use of AI in the sector.
- Regularly update members on progress and invite your feedback to shape our approach.

b. By promoting lifelong learning and responsible AI use, the NI aims to empower its members to lead the industry forward. Together, we can tackle major challenges, like decarbonisation, national and energy security, and sustainability, and build a future we're proud of.