

Case Study 04

Dreadnought Safety Assurance

Project Background

The Dreadnought Programme is one of the UK's most significant and technically complex, delivering the next generation of nuclear-powered ballistic missile submarines (SSBNs) to replace the Vanguard-Class as the cornerstone of the UK's Continuous at Sea Deterrent (CASD). The programme is a multi-decade effort spanning the full engineering lifecycle. The Dreadnought Alliance, a formal partnership between the UK Ministry of Defence (MOD), BAE Systems and Rolls-Royce, has been established to collaboratively deliver the Dreadnought Class submarine programme.



The programme must balance innovation, safety and delivery of an assured capability into service, against a backdrop of national security priorities, regulatory scrutiny and evolving threat environments.

Naval Solutions Ltd was engaged by the Dreadnought Chief Engineer (Safety & Environmental) (DCE(S&E)) team to deliver a comprehensive package of safety technical support services in direct support of the Dreadnought Programme. This engagement spanned a wide range of activities, including support to the Safety Management Arrangements (SMAs), independent technical reviews of safety documentation, the development of structured handover and transition into service plans, and maintenance of the Whole Boat legislative compliance framework. Further specialist input was provided in areas such as Naval Authority certification strategy updates, accidental damage survivability and support in the development of the Dreadnought Soter tool.

Approach

Naval Solutions Ltd adopted a resilient embedded-delivery model, centred on trusted relationships, deep submarine domain expertise and agile responsiveness. At the heart of our delivery was a nominated Solutions Architect, accountable for coordinating technical outputs, maintaining a strong on-site presence, and active engagement with the DCE(S&E) team.



To complement our core capability, we maintained a reliable and scalable network of Suitably Qualified and Experienced Personnel (SQEP) who could be drawn upon to address emerging needs or niche technical challenges. This flexible model ensured that safety technical support remained responsive, cost-effective and aligned with evolving programme demands.

Our approach was characterised by trusted personnel, transparent delivery and embedded value, underpinned by submarine expertise and a collaborative ethos.

Scope and Contributions

We brought significant technical expertise to the project, with team members who have direct experience in nuclear submarine operations and the submarine build environment. Our deliverables were managed and stored on MOD SharePoint, ensuring information security and continuity. Through embedded leadership, responsive SQEP resourcing, and strong stakeholder engagement, we played a key role in maintaining delivery momentum and strengthening the Dreadnought safety campaign.

Outcomes

Our involvement in the Dreadnought Alliance delivered significant value through embedding experienced personnel and fostering trusted working relationships across MOD and industry partners. Our responsive resourcing model enabled timely resolution of emergent issues.

Ultimately, our work underpinned the delivery of credible, assured, and justifiable safety evidence to support the Dreadnought Alliance in meeting its commitments to the Defence Nuclear Enterprise.

Naval Solutions

Naval Solutions Ltd is a trusted engineering consultancy at the forefront of marine innovation. We deliver high-impact engineering and technology solutions that shape the future of defence, nuclear and commercial maritime sectors.

We offer a full suite of consultancy and engineering services tailored to the complex demands of modern maritime operations. With a relentless commitment to excellence, paired with a deep understanding of our clients' operational environments, our solutions enhance capability, ensure safety and drive operational success at sea and beyond.



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