

15 February 2024

BAE Systems Australia
550 Bourke Street
Melbourne VIC 3000

Mr Mark Fitt

Committee Secretary

Senate Foreign Affairs, Defence and Trade Legislation Committee

Dear Mr Fitt,

I refer to your letter dated 23 November 2023 inviting BAE Systems to make a submission to the inquiry into the *Australian Naval Nuclear Power Safety Bill 2023* ('Provisions') and *Australian Naval Nuclear Power Safety (Transitional Provisions) Bill 2023* ("Transitional Provisions'), and thank you for that opportunity.

1. BAE Systems' experience and expertise

In the United Kingdom, BAE Systems designs, tests and commissions the most advanced submarines ever operated by the Royal Navy, as well as their state of the art combat systems and equipment. Spanning 120 years of submarines fabrication at Barrow, including over 60 years of nuclear submarines, BAE Systems has significant capability and experience from which to draw and is therefore well placed to comment on the Provisions and the Transitional Provisions in light of this UK experience.

In particular, this UK nuclear experience includes:

- Vessel design and build;
- Facilities design, build and operation;
- Workforce planning recruitment and management, through early careers and education and future talent pipeline;
- Investment in skills and education;
- Investment in links between education and the business;
- Investment in social licence through outreach programs in Barrow and beyond;
- Investment in and management of the supply chain to ensure a firm base to rely on for the future

All of the above is being delivered in the context of a nuclear regulatory environment.

We consider that we have assisted in the maturation of the UK regulatory environment and its application across nuclear complex programs and sites. Our close working relationship with both government and regulators has helped generate a culture of continuous improvement leading to much improved safety performance and reduction of risk on our programs.

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BAE Systems has a heritage in Australia of over 70 years delivering critical sovereign capability. It is the largest Defence contractor in Australia, with a strong presence across all domains. This has given BAE Systems extensive experience in collaborating with Government as both a customer and a regulator, and the company therefore has a strong perspective on Defence contracting in Australia and the impact of regulation on Industry generally. Given our international footprint we can claim to have a number of nuclear experienced personnel that can be made available to assist in the development and implementation of legislation and control frameworks.

2. General Themes:

2.1 Coherence with international regulatory coverage:

BAE Systems understands the intention of the tri-lateral SSN-AUKUS Nuclear Submarine Program to be that there is a set of norms common across the three nations, namely a single platform design incorporating one Nuclear Steam Raising Plant (NSRP) design and bounded within a single platform safety case that incorporates an associated single NSRP safety case. It is therefore highly desirable that the life cycle of the SSN-AUKUS Program in Australia (through design, build, commission, operation, maintenance and disposal) be subject to regulatory norms, which are consistent with those that apply to the program in the United Kingdom and the United States. It is especially important that they do not lead to the application of different standards in different nations. This could manifest where similar but not identical legal standards are imposed to the detriment of the tri-lateral program, for example with the concepts of SFAIRP vs ALARP (see paragraph 3.1 below) and Relevant Good Practice vs International Best Practice (see paragraph 3.2 below).

Noting the interim arrangements that will be in place through ARPANSA and the journey to be undertaken in maturing the regulatory processes contemplated by the Provisions, while perhaps it is not necessary for the Legislative process at this time, it is BAE Systems' opinion that downstream at an appropriate point there may be a beneficial role for clearly defined mutual assurance between the UK and Australia, based on the established UK Nuclear regulatory framework.

BAE Systems recommends:

- 1. That the Government continues to engage with the UK and US governments to ensure that the Provisions do not drive any divergence of design across the Program in the three nations.*

2.2 Coherence with other Australian legislation:

There exists a patchwork of Commonwealth and State based regulations that apply to various activities related to the potential Program. Absent a clear statement in the Provisions and reform in that legislation, each of these regimes will need to be navigated by the SSN-AUKUS Program.

Whilst we recognise that the Provisions are themselves new and represent a new field of legislative coverage, it is essential that the new laws include a clear statement of the precedence of applicability and that any areas of inconsistency be identified and where possible addressed.

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Sections 132 gives good clarity and section 134 sets up a mechanism to de-conflict any state laws, but sections 133 and 134 do not give total clarity on primacy of the Provisions

BAE Systems recommends:

- 1. That the Government prioritises ensuring coherence across the whole Australian regulatory ecosystem before enshrining the Provisions into legislative effect, and in particular consider making sections 133 and 134 more explicit.*

2.3 Coherence across the nuclear regulatory landscape:

Based on the UK experience, we anticipate that there will be a range of further nuclear related subordinate legislation to be enacted that will cover the SSN-AUKUS Program. This could include Regulations, codes, policies, and guidance material. That all of these norms interact and remain coherent and consistent is critical in safely 'enabling' a nuclear shipyard and ultimately a nuclear build program.

Close working relationships between both UK Ministry of Defence and the civil regulator and site Licensees look to ensure full and early transparency in relation to site arrangements and activities with the aim being to best meet Program aspirations but without detriment to safety outcomes or Regulatory independence.

BAE Systems recommends:

- 1. That the Government looks to extract the UK experience and engages with Industry and both the Civil and Defence Nuclear Regulators in the development of the subordinate legislation and its maturity pathway that has been developed over the last 60 years.*

2.4 Statute, Regulations and other subordinate legislation

There are strong similarities between the Provisions and the UK legislation. However, the Australian Defence nuclear sector legislation is still at an immature stage in comparison to the UK current position and having not yet been exercised. A full and considered understanding of the effectiveness of the Provisions can only be made once the accompanying regulations, codes and guidance that will flow from this statute are available.

Point 10 of the Explanatory Memorandum accompanying the Provision notes the need to engage with the Department of Defence. BAE Systems' experience is that such ongoing engagement is critical to achieving coherency in the outcome. Without compromising the essential independence of the Regulator, such dialogue will ensure mutual clarity of intent and understanding both in the nature of submarine build activities that need to be undertaken and the framework of regulations necessary to ensure nuclear safety.

In BAE Systems' experience there is a great deal to be gained by extending this approach to the UK Government and Industry to ensure that the downstream needs and inputs of the Submarine build activities are considered at an appropriate time.

BAE Systems recommends:

- 1. That the Government continues to seek advice from all relevant stakeholder sources in particular the UK Government, including on its engagement with Industry, in*

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relation to the development of the Regulations and other subordinate legislation in order to achieve coherency across the regulatory framework.

2.5 Phased approach to introduction of Regulations.

In recognising the intention to phase the introduction of the Regulations that would sit beneath this over-arching Provisions, we understand that an initial phasing will concentrate on facilities (enabling site licencing) and that matters relating to the build/test/commissioning of the submarine will be issued later. BAE Systems' experience is that knowledge of the intended operations be taken into account when considering the suitability of a site and that an understanding of the downstream 'submarine phase' be taken into account earlier than the Government may anticipate by adopting this approach.

BAE Systems recommends:

1. *That the Government engages with the UK Government, Regulator and Industry to ensure that the downstream needs are considered and pertinent Learning From Experience (LFE) is consumed*

2.6 Operational Needs

BAE Systems' staff who have previously served in nuclear submarines in the UK and worked in the nuclear build and sustainment yards have flagged potential tension between the realities of Operational Needs versus legislated absolute positions around personnel, platform and nuclear safety. In a context where decisions have to be substantiated as Tolerable and/or to a standard of As Low as Reasonably Practicable, the need is to articulate through Claim, Argument and Evidence why activities can be considered ALARP and therefore continue. Typically such decisions are reached through a combination of a sound technical and design understanding, coupled with both operational and environmental context. The input of Subject Matter Experts in substantiating these judgements is key. Equally as important is having a Regulatory community who are themselves deeply Nuclear SQEP and who are well versed in the activity being undertaken thus allowing a well-informed Regulatory consideration of any ALARP claim.

It should be noted that the prescriptive statutory approach laid out in the Provisions, with an accompanying span of civil and criminal outcomes, will likely form a background to all decision making, and risks creating a framework of legal precedents driving how an action should be undertaken, potentially, without giving a matter full contextual consideration – i.e. a potential constraint on the operators' application of knowledge based judgement.

In BAE Systems' experience, to support optimum regulatory decision-making, it is essential for the Government to ensure that the Regulator is vested from the outset with relevant, Nuclear SQEP. This will also help ensure that an informed, balanced and proportionate set of Regulatory arrangements are set up in the first instance.

BAE Systems recommends:

1. *that from the outset the Regulator is vested with relevant submarine operational Nuclear SQEP in order to ensure that, without compromise of its regulatory duties, there is provision for informed dialogue regarding the balance of risk associated with all aspects of nuclear submarine ownership.*

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3. Specific Matters:

3.1 SFAIRP/ ALARP

As raised in section 2.1 above, BAE Systems' opinion is that there must be a coherence across the SSN-AUKUS programs in Australia, the UK and the US.

The area where this manifests most significantly in the Provisions in the duties framed to the standard 'so far as is reasonably practicable': section 18 (general nuclear safety duty), section 20 (nuclear safety management systems), section 22 (competence and supervision), section 24 (nuclear safety management systems), section 32 (licence conditions). Section 5 then provides a very specific definition of reasonably practicable.

The relevant UK legislation frames its duties to a standard of "as low as reasonably practicable", and provides guidance around reaching that determination.

It is essential that any national or international differences between a SFAIRP and an ALARP approach do not drive an outcome requiring a difference in the design of facilities or the submarine itself, applicable processes and instructions or any other programmatic differences.

BAE Systems recommends:

- 1. That the Government undertakes a detailed analysis on the potential for differences of outcome between a SFAIRP position and an ALARP position, and explore the possibility for alignment.*

3.2 Relevant Good Practice/ International Best Practice

A second key area where the Provisions risk enshrining a divergence across the tri-national SSN-AUKUS Program is the requirement in section 31 that the Regulator must, in deciding whether to issue a licence, take into account 'international best practice'. BAE Systems' opinion is that this will set a very high hurdle, especially if it is in conflict with the UK standard of 'relevant good practice'. The UK experience and approach enables the application of judgement and context, rather than an unbounded search for the very best. This is further assisted in the UK by the Office for Nuclear Regulation issuing Safety Assessment Principles (SAP) which, although not legally binding, articulate a clear and helpful view with respect to the application of Relevant Good Practice.

We note that section 31 adopts the precise language, including 'international best practice', from the *Australian Radiation Protection and Nuclear Safety Act 1998* ('ARPNSA'), section 132 of the Provision makes it clear that the ARPNSA does not otherwise apply to regulated activities.

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BAE Systems recommends:

- 1. That the Government considers replacing the 'international best practice' language with a standard of 'Relevant Good Practice' to ensure for close Program alignment*
- 2. That the Government considers a 'codification' of interpretation of the standard of Relevant Good Practice along the lines of the ONR SAP to allow for the greater certainty that this brings.*

3.4 Inspector's power to Operate

Section 41 of the Provisions includes in an inspector's monitoring powers authority to operate equipment. In BAE Systems' experience, it would be unworkable and indeed potentially dangerous for an inspector to have such power to 'operate' equipment on a nuclear submarine. An Inspector may not have the requisite experience or expertise to do this.

BAE Systems recommends:

- 1. That the Government reconsiders and curtails the possibility for an Inspector to operate equipment without the stipulation of further of controls around that.*

Again, I thank you for this opportunity to comment on the Provisions. Please do not hesitate to contact us for any further assistance you may require.

Yours sincerely

Ben Hudson
Chief Executive Officer
BAE Systems Australia