Dr Kathleen Dermody
Committee Secretary
Senate Standing Committee on Foreign Affairs, Defence and Trade
PO BOX 6100
Parliament House
Canberra ACT 2600

By Email: fadt.sen@aph.gov.au

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Dear Dr Dermody

Submission to the Senate Foreign Affairs Defence and Trade Committee - Procurement procedures for Defence capital projects

David Smith, Executive Officer,
Australian Government Division,
Association of Professional Engineers, Scientists and Managers Australia

1. The Association writes in support of the work of the committee and in support of earlier submissions that recommend an urgent investment in engineering and project management personnel.

2. The Association of Professional Engineers, Scientists and Managers Australia (APESMA) is a member-based industrial association registered under the *Workplace Relations Act 1996* that represents professional employees in engineering, science, information technology, pharmacy , architecture and managers in both the private and public sector. Our members in the Defence Department play a critical role in developing and maintaining organisational capability across Defence but particularly in relation to the research, design, delivery and maintenance of materiel. They are deeply committed to their work.

3. APESMA has a strong commitment to enhancing skills and professional development opportunities for members and co-operating with organisations to improve and maintain workforce capability. APESMA is a founding member of the Australian National Engineering Taskforce.

4. The focus of the Association submission is the second point of inquiry posed by the terms of reference:

   Point (b) Assess the timelines proposed for defence modernisation and procurement outlined in the Defence White Paper

5. The key to delivery of the Defence agenda is having the skills capability and it is the Association's view that the timelines cannot be effectively met without urgent attention to capability.

6. There is a widespread understanding that Australian industry faces an engineering skills shortage. The Defence organisation, and broader industry, faces significant challenges with well documented skill shortages in engineering and project management that have led most recently to the early decommissioning of the HMAS *Kanimbla* and HMAS *Manoora*. Engineers Australia submission provides a good summary of the labour market pressures on engineering and project management.

7. One of the clear consequences of the skill shortages is millions of dollars in cost over-runs and opportunity lost as a result. According to the Blake Dawson report *Scope for Improvement*, 42% of projects are inadequately scoped before going to market leading to a quarter of projects being "up to 20% over budget.[1]" In Defence the risks are obviously not limited to cost but potentially to reputation and life of personnel.

8. To be blunt the Defence organisation is struggling to maintain the technical professional workforce it requires for current materiel let alone address the skill requirements demanded by the forward agenda to meet Force 2030. This needs to be addressed as a priority and the work on retaining and attracting key personnel cannot wait until tomorrow. The opportunity exists now within the enterprise agreement cycle to address some of these workforce concerns.

9. We believe that the starting place for improved Defence procurement services, and this applies more broadly across engineering services, is a better understanding of, and support for, the underpinning technical skill bases required to design, assess, deliver and maintain projects and an assessment of the existing capability of the agency and industry to match those skill requirements. This requires a greater emphasis on engineering skills within project management as well as addressing the dilution of engineering skills across Defence, particularly as identified within Navy and the Defence Materiel Organisation (DMO).

10. To do this effectively requires consideration and investment in the career paths and pay structures for engineers and associated professions. For the last four years and in two enterprise agreement cycles APESMA has been making the case for investment in engineering and technology professionals as a key to Defence capability.

11. It is worth noting that Defence projects, particularly where they deal with new or emergent technology, are often inherently complex and this adds a layer of risk to materiel that already is laden with risk to cost, reputation and life.

12. Sound independent technical advice limits risk and as noted in the *Navy Engineering Workforce Review* (December 2010) "saves money and most importantly lives and reputation."

13. The key to Defence being able to manage risk effectively is if it has a sufficiently expert and critical in-house capability to allow it to assess problems, formulate

[1] Blake Dawson Waldron (2006) *Scope for Improvement: A survey of pressure points in Australian construction and infrastructure projects.* Report for the Australian Constructors association.

solutions and pose informed and, where necessary, difficult questions. There is a fear amongst our broader membership that Defence is either losing, or in some cases has lost, the capacity to ask the right questions through a combination of a lack of appropriate resources and skills and that the consequences for the appropriate management of risk are potentially catastrophic. This fear is borne out in the numerous internal and external reviews of engineering and project management in recent years.

14. This is a perception that is shared across Defence industry. A recent in depth survey of systems engineering capability in the Defence industry found that there "is a perception in Defence industry that the Department has been "de-engineered" over the last 15 years to the extent where DMO is not regarded by industry as a "mature" client.[2] This is matched by the stark assessments in some of the earlier submissions to this inquiry about the capability to support existing materiel let alone the development and delivery of the ambitious 2030 agenda. Further the Cook and Unewisse study notes the view that "the problems experienced on programs such as Wedgetail, Vigilaire, JP129…are related to poor up front systems engineering then I think the answer is we do not have enough experienced SI practitioners who have delivered major projects" and suggests that "an increased demand from the civil sector is likely to increase the cost of SE/SI for Defence." In brief an already tight market for skills is likely to become tighter.

15. Over the course of two rounds of agreement making APESMA has been arguing that Defence needs to provide stronger career paths and pay structures for its engineers, project managers and science personnel for the Department to have the capability to deliver its plan for national and regional security. Having a technological edge has been a key driver of Defence policy but to do so require having the talent to deliver and maintain that edge.

16. Pressure on resources, limited professional recognition, uncompetitive pay and limitations on career paths within the Defence organisation are clear barriers to meeting these challenges. Unfortunately the Defence organisation has not yet acted on proposals put forward by senior engineers within the organisation with the support of APESMA that can assist in meeting these challenges. The window of opportunity is open now in the current round of bargaining to do so but it is about to shut for another three years.

17. The Association notes that the Rizzo Review and a number of submissions point to the DMO suggesting that it is difficult to "get people with high levels of engineering and commercial expertise into DMO because they are restricted due to the Public Service framework they work in with the sort of offers they can make to people." This is not strictly true as the current Defence enterprise agreement provides avenues to pay premiums to groups and individuals in critical skill categories. For example this

[2] Cook and Unewisse (2011) *A Survey of Defence Industry Systems Engineering and Systems Integration Capability.* A paper delivered to the SETE 2011 conference.

capacity has been used to provide more competitive pay outcomes for Defence medical personnel. On more than one occasion DMO has not approved such group premiums to senior, experienced engineers despite commitments that have been made to these groups.

18. Nonetheless there is an opportunity for the DMO to be actively involved in the agreement making process to deliver outcomes that can both attract new talent but more importantly be utilized to develop, value and retain existing high level engineering and project management expertise. Proposals have been put on the table by bargaining representatives that address these issues.

19. The Committee would do well to heed the broader lessons learned from the Nimrod Review[3] that have thematic resonances with issues identified by the Australian Defence Organisation, particularly in the recent reviews of Navy engineering capability. The Nimrod Review identified the following systemic weaknesses with Ministry of Defence personnel practice:

- undervaluing and dilution of engineering skills
- engineers are not required to have professional status
- decline in the ability of the MOD to be an "intelligent customer"
- turf wars and inter-service rivalry for roles
- constant renaming of posts
- "double hatting" and "gapping"
- lack of trained safety engineers
- selfishness, rewards and promotion for "change"
- shortage of manpower and skills fade[4]

20. While substantial work has been done in recent years in encouraging engineers and project managers to get professional status many of the identified weaknesses in the MOD apply equally to the Australian Defence Organisation.

21. The challenge is unambiguous. The Minister for Defence Materiel, the Hon. Jason Clare MP, put it well in a speech to industry in early September that "you don't have to read

[3] On 2 September 2006, RAF Nimrod XV230 was on a mission in Southern Afghanistan in support of NATO and Afghani ground forces when it suffered a catastrophic mid-air fire leading to the loss of the aircraft and the death of all 12 crew. A board of inquiry was released in December 2007 and the Nimrod Review, an independent review into the broader issues surrounding the loss of the Nimrod, was established by the then Secretary of State for Defence, the Rat Hon. Des Browne. The Report, "The Loss of RAF Nimrod XV230: A Failure of Leadership, Culture and Priorities" was handed down on 29 October 2009.

[4] Charles Haddon-Cave QC, *"The Loss of RAF Nimrod XV230: A Failure of Leadership, Culture and Priorities" An independent review into the broader issues surrounding the loss of the RAF nimrod MR2 Aircraft XV230 in Afghanistan in 2006,*2009

far into the Rizzo Report into the Repair and Management of our Support Ships to see the risks that emerge when Defence lacks skills and experience in its workforce."[5]

22. This means funding the necessary experienced and talented science, engineering and project management personnel to help ensure projects start and stay on track. There needs to be the capacity to ensure that the appropriate level of skilled personnel is assigned to projects and research and get past the organizational dysfunction of FTE constraints.

23. We are going through a bargaining process that allows the Defence organisation to take important steps down the road to rebuilding engineering and project management capability within the agency. The consequence of not addressing these issues is not only in project overruns but an increased risk of a repeat of a *Sea King* or a *Westralia*.

[5] Hon Jason Clare MP, Building the skills we need for the future, Keynote Address to the 7th Annual Defence Skilling Summit, 5 September 2011