Australian Government
Australian Submarine Agency

ASA

Safety Management

Controlled Industrial Facility (HMAS *Stirling*)
ARPANSA Construction Licence
Technical Overview

Contents

List of Acronyms

ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASA	Australian Submarine Agency
AUKUS	The trilateral security partnership between Australia, United Kingdom and the United States of America
CIF	Controlled Industrial Facility
HMAS	His Majesty's Australian Ship
IAEA	International Atomic Energy Agency
SRF-West	Submarine Rotational Force - West

Safety Management

Section 1 - Introduction

1.1 This Technical Overview provides general information on safety management systems that will be incorporated into the operation of the Controlled Industrial Facility (CIF) at HMAS *Stirling*.

1.2 This Technical Overview addresses Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) requirements detailed in Section F of the ARPANSA – Form -1797 v11.1 dated November 2022.

1.3 This Technical Overview contains information submitted to ARPANSA developed using the Regulatory Guide - Plans and arrangements for managing safety (ARPANSA-GDE-1735), and the Australian Submarine Agency's (ASA) internal guidance set out in *Best Practice Guidance for Managing Nuclear Safety and Radiation Protection*.

1.4 This Technical Overview details the planned safety system for nuclear safety and radiation protection of nuclear regulated infrastructure at *HMAS* Stirling in support of Submarine Rotational Force - West (SRF-West). Central to this will be the development of a Nuclear-Powered Submarine Safety Management System that governs the safety of the program, and interfaces with other applicable Defence systems, including Navy Safety, Seaworthiness and Environment Management Systems. The CIF Safety Management Plan will be incorporated into the Nuclear-Powered Submarine Safety Management System.

Section 2 - Nuclear Safety Management System

2.1 The ASA is committed to implementing an approach to workplace health and safety that achieves a consistently high standard of safety performance. The Safety Management Plan will assist ASA in meeting its obligation in accordance with Work Health and Safety (WHS) radiation protection and nuclear safety regulatory requirements. Director General ASA has also issued a Work Health Safety Policy Statement which outlines the commitment to upholding the highest of standards on health and safety.

2.2 The plans and arrangements for managing safety and security being developed by the ASA are utilising and harmonising (where appropriate) many of the wider Defence safety arrangements. This will ensure activities conducted during site preparation and construction, through to the operation of the CIF are undertaken safely and are compliant with legislative and regulatory requirements.

2.3 To achieve the above the following actions have been taken by ASA:

a. The adoption of International Atomic Energy Agency (IAEA) nuclear safety and radiation management principles of defence in depth, integrated risk informed decision making and institutional strength in depth

b. The development of a Nuclear-Powered Submarine Safety Management System, which will govern the safety of the program, and interfaces with other applicable Defence systems, including the Navy Safety Management, Seaworthiness and Environment Management Systems, has commenced. Its development applies safety management system known best practice and expert advice across a range of sources, including nuclear and engineering industry practices and standards, as well as leveraging from the experience and knowledge of AUKUS partners.

2.4 Importantly, the Safety Management Plan will be developed under the authority of, and applying the same principles as the Nuclear-Powered Submarine Safety Management System. This will ensure that the Nuclear-Powered Submarine Safety Management System, the CIF Safety Management Plan, safety management plans of other relevant facilities and other safety artefacts will operate in a consistent manner and support each other with clear and unique scopes and responsibilities.

Nuclear Safety Management System Development

2.5 The Nuclear-Powered Submarine Safety Management System is currently under development.

2.6 Director General ASA will retain accountability for the Nuclear-Powered Submarine Safety Management System with ASA staff responsible for conforming to all approved Nuclear-Powered Submarine Safety Management System policies and procedures.

2.7 Important to the Nuclear Safety Management Systems development is ensuring the adopted safety culture supports its effective implementation. ASA has developed ten Nuclear Mindset principles that guide how, as an organisation, ASA personnel will behave and conduct tasks to ensure best practises are adopted. ASA's Nuclear Mindset Principles can be found on the ASA website.

2.8 Until such time as the Nuclear-Powered Submarine Safety Management System is finalised, existing Defence and Navy policies will be implemented in accordance with the ASA Directive 02/2023 - Application of Defence Policies to the Australian Submarine Agency.

Structure and Jurisdiction of Nuclear Safety Management System

2.9 The Nuclear-Powered Submarine Safety Management System shall apply to all organisations (government, military and commercial), that are performing functions with the potential to affect ASA's ability to deliver on its responsibilities, as defined in the Nuclear-Powered Submarine Safety Management System Strategy.

2.10 The structure of the Nuclear-Powered Submarine Safety Management System will conform to standard *Implementing a Safety Management System in Design, Manufacturing and Maintenance Organisations* (SM-0001) and will be structured with four components and 12 elements as detailed below:

a. Component 1: Safety Policy and Objectives

i Element 1.1 Management Commitment

ii Element 1.2 Safety Accountabilities and Responsibilities

iii Element 1.3 Key Safety Personnel

iv Element 1.4 Coordination of Emergency Response Planning

v Element 1.5 Nuclear-Powered Submarine Safety Management System documentation, standards and data

b. Component 2: Safety Risk Management

i Element 2.1 Hazard Identification

ii Element 2.2 Safety Risk Assessment and Mitigation

c. Component 3: Safety Assurance

i Element 3.1 Safety Performance Monitoring and Measurement

ii Element 3.2 Management of Change

iii Element 3.3 Continuous Improvement of the Nuclear-Powered Submarine Safety Management System

d. Component 4: Safety Promotion

i Element 4.1 Nuclear-Powered Submarine Safety Management System Training and Education

ii Element 4.2 Safety Communication

Section 3 - Safety Hazard Management

3.1 There will be no radioactive waste arising during the construction stage of the CIF at HMAS *Stirling*. Furthermore, there will be no radiological waste stored onsite throughout the construction phase.

3.2 The technical overview for *Radioactive Waste Management* identifies how radioactive materials, and radioactive waste will be managed at the CIF. Radiation measurements will be conducted throughout all stages of the waste process of low-level radioactive waste to ensure appropriate controls are in place.

3.3 The Nuclear-Powered Submarine Safety Management System will outline how the ASA will measure safety related data. Hazard identification processes will outline how hazards will be proactively captured throughout the lifetime of a project. The Technical Approval Authority Framework will also be applied to assess hazards, and shall be the mechanism for managing the approval of all technical and safety risk-based decisions.

3.4 The safety management system will integrate with ASA Risk Management Framework and the ASA Technical Approval Authority Framework to articulate a consistent approach in managing risks to achieve objectives of safety design, acquisition, operation, sustainment, decommissioning and disposal of naval nuclear propulsion capability.

Ensuring effective safety system performance

3.5 To ensure safety system performance, the Nuclear-Powered Submarine Safety Management System will outline how ASA will develop and maintain the means to validate the effectiveness of safety risk controls that have been implemented to mitigate hazards. It will also identify how the safety performance of the organisation will be assessed against the safety performance indicators and safety targets that will be outlined in the Nuclear-Powered Submarine Safety Management System.

Section 4 - Management of Change

4.1 ASA will continue to develop change management policies and procedures as it matures. An important element of a positive safety culture is the recognition that the mission is continually evolving, and this will impact the hazards and risks present in the workplace.

4.2 To support change management ASA has established the Nuclear Safety, Security and Safeguards Committee in which any matter with significant implications for radiation protection, nuclear safety, nuclear security, nuclear safeguards or submarine safety is reviewed, considered, and adjudicated, where necessary. This will ensure the suitability of changes made to improve safety management. Gaining approvals for changes and the reporting of changes will comply with relevant regulations.