

CONSULTATION DRAFT

National Strategy for Radiation Safety

Aim

The National Strategy for Radiation Safety aims to deliver a radiation safety and protection system for Australia that continues to protect people and the environment from the harmful effects of radiation¹, while maximising the benefits that can be provided by technologies that use radiation to ensure the best possible public health outcomes for the community.

Implementation of the National Strategy seeks to promote and enable the safe and justified uses of radiation, while taking into account social and economic factors, including the diverse landscape of users of radiation.

A reform agenda for radiation safety and protection in Australia

The case for change

Australia has a long history of successfully managing risks associated with the use of radiation. This success can be attributed to well-established standards of safety and protection implemented in each jurisdiction. However, Australia's radiation safety and protection system also presents a number of challenges, to both business and regulators.

Radiation safety and protection in Australia is regulated on a jurisdictional basis, with each state and territory, and the Commonwealth, administering their own radiation safety and protection legislation. The primary objectives of each of these legislative frameworks is to protect people and the environment from the harmful effects of particular sources of radiation. This objective is achieved via each jurisdiction's authorisation framework, which requires those who wish deal with² radiation sources to hold an authorisation issued by each jurisdiction's regulatory authority. These respective frameworks aim to ensure that only persons who hold appropriate authorisations are able to deal with radiation sources, and that only individuals who have demonstrated their competence in using radiation sources are authorised to do so.

While jurisdictions' regulatory systems are generally similar and comprehensive, inconsistencies in legislation and the implementation of nationally agreed codes and standards mean those involved in the use of radiation are required to demonstrate compliance with multiple regulatory regimes when operating across jurisdictions. These inconsistencies present a potential risk, and can complicate Australia's framework for identifying, assessing and managing radiation risks. Inconsistencies also make it difficult for jurisdictions to agree on uniform competencies against and which people who use radiation are assessed before they are granted an authorisation.

¹ For more information, refer to the International Atomic Energy Agency's *Fundamental Safety Principles Safety Fundamentals No. SF-1*

² 'Deal with' may include possessing, using, transporting, disposing, acquiring, selling and giving away radiation sources.

Australia's emergency preparedness and incident response framework is, generally, cohesive and robust. The response to the COVID-19 pandemic is testament to jurisdictions' ability to mobilise and work together to manage a national health emergency. However, the current emergency preparedness and incident response framework for large-scale radiation incidents and emergencies in Australia is untested and there are concerns as to whether it is fit for purpose. The roles and responsibilities of agencies involved in emergency preparedness and incident response, both within and across jurisdictions, are not well defined or articulated. There have been very few radiation incidents that have been significant and required the cooperation of multiple jurisdictions and emergency response agencies. This National Strategy provides an opportunity to enhance and strengthen the emergency preparedness and incident response framework for large-scale radiation incidents, and build on the experience gained from recent incident responses requiring a multi-jurisdictional, multi-agency response.

Technologies and services that use radiation are rapidly evolving, however, the radiation safety and protection regulatory frameworks in Australia find promptly responding to these developments and ongoing challenge. This results in the risk that the use of new or emerging technologies might not be adequately regulated, and consequently some Australian consumers may be exposed to an increased risk of harm. This presents an obstacle to radiation safety and protection and impacts the ability of regulators to appropriately identify, assess and manage risk.

The nature of radioactive materials necessitates a "cradle-to-grave" (i.e. whole life cycle) approach to their regulation, including the need to make appropriate provision for human and financial resources to maintain oversight at all stages of this life cycle. Each Australian jurisdiction currently has effective mechanisms in place for safely managing radioactive materials at the end of their useful life, including safe storage arrangements. However, this means that radioactive materials are stored at numerous locations across the country, and there is often no clear disposal pathway available. A sustainable solution to address this long-term storage challenge remains. Further collaboration between jurisdictions is required to achieve a national outcome to ensure radioactive materials that have reached the end of their useful life are adequately managed and the safety and security risks that may arise from the long-term storage of radioactive materials are addressed.

It is important that Australia's framework for radiation safety and protection is responsive to change, and maximises efficiencies for both governments and businesses to ensure that all Australians continue to realise the benefits that can be provided by technologies that use radiation.

The National Strategy is an opportunity to further progress the important work already done by Australian governments and regulators by providing a national policy overlay to ensure the implementation of radiation safety and protection standards across jurisdictions is consistent.

The National Strategy focusses on bringing the existing elements of Australia's radiation safety and protection framework into a more cohesive, national approach that also aims to achieve efficiencies for users of radiation.

Objectives of the National Strategy for Radiation Safety

The National Strategy is based around five key objectives:

1. Uniformity

To improve safety outcomes and efficiency by reducing inconsistencies in regulatory requirements and unnecessary red tape.

This National Strategy strives to achieve consistency in the level of radiation safety and protection across Australia by acting as a foundation for national agreement in relation to competencies for users of radiation; compliance and performance testing standards for radiation sources; and exemptions for radioactive material and radiation apparatus. The implementation of more consistent regulatory requirements across jurisdictions, including consistent implementation of codes and standards to achieve agreed outcomes, will result in more effective and efficient safety and protection for people and the environment across all jurisdictions, both in principle and practice.

2. Incident management

To streamline and harmonise the multiple frameworks for the effective management of significant radiation incidents.

Responding to large scale emergency incidents requires coordination across multiple frameworks, including not only the usual emergency service frameworks, but also those of public health, transport, and environmental protection, and across all jurisdictions.

Ensuring a framework is in place to manage radiation incidents, and ensuring the interjurisdictional and inter-agency interoperability of people and resources in large-scale emergency incident responses will mitigate and minimise the consequences of any large-scale emergency incidents, and will protect the public and the environment from the harmful effects of radiation to the greatest extent possible.

3. Science driven policy

To ensure there is a common evidence base for the development of codes and standards.

Continuing to maintain up to date standards and codes, informed by a common evidence base, along with a shared implementation plan to ensure their consistent implementation across jurisdictions will provide a key element in achieving uniformity in the standard of radiation safety and protection across Australia.

4. Future proofing

To ensure the radiation safety and protection regulatory framework is responsive and adaptable, to take account of emerging technologies and services, and ensure potential harms are managed while realising the benefits.

Future proofing Australia's approach to the regulation of radiation by making it more responsive will ensure our radiation safety regulators are able to adapt their regulatory practice, and that the regulatory framework is better able to keep pace with evolving technologies and services. This National Strategy lays the groundwork for ensuring Australia's radiation safety and protection

regulatory framework is responsive not only to the development of technologies, products and services that rely on radiation, but also to social and economic developments.

5. Life cycle management

To develop a national approach to the safe and sustainable management of radioactive materials through all stages of their life cycle, including adequate allocation of financial and human resources for life cycle management.

Developing an agreed national approach to life cycle management for radioactive materials will ensure radioactive materials are appropriately managed through all stages of their life cycle. A national approach requires engagement at all layers of government and across all jurisdictions to enable an open and transparent life cycle management process.

Guiding principles for the National Strategy for Radiation Safety

Australia's commitment to the safe use of radiation technologies in all sectors of the economy is underpinned by a number of guiding principles. These principles reflect the extensive body of research and development work that has been undertaken at state, national and international levels on managing the adverse health and environmental effects which may arise from different types of radiation, coupled with codifying the measures which may be taken to prevent or minimise detrimental effects arising from exposure to radiation, and to optimise protection.

The principles for radiation safety and protection are enshrined in the international framework for radiation safety, and underpinned by international risk assessments. Australia is an active participant in the international framework, and in an illustration of Australia's international engagement in this area is outlined in the box below.

Australia's international engagement in radiation risk assessment and safety

As a member state to international organisations, contracting party to international and regional conventions, and active participant in international advisory bodies and scientific committees, Australia takes stock of and contributes to the development and implementation of international standards and risk assessments. In addition to being a member state of the IAEA and the World Health Organisation, Australia makes a significant contribution to the development and implementation of a risk informed framework for radiation safety and protection. The following are international bodies that perform research or develop standards for radiation to which Australia contributes:

- the United Nations Scientific Committee on the Effects of Atomic Radiation
- the International Commission on Radiological Protection
- the International Commission on Non-Ionizing Radiation Protection
- the IAEA Commission on Safety Standards and the constituent standards committees

Australia is a signatory to, or contributes to the following treaties which support radiation protection:

- the Convention on Nuclear Safety
- the Joint Convention on the Spent Fuel Management and on the Safety of Radioactive Waste Management
- the Early Notification Convention
- the Assistance Convention
- the Code of Conduct for the Safety and Security of Radioactive Sources (and Supplemental Guidance)
- the Code of Conduct on the Safety of Research Reactors

The radiation safety and protection principles enshrined in the international framework form the basis of each jurisdiction's regulatory framework for radiation safety and protection, with the aim of protecting people and the environment from the harmful effects of radiation.

In addition to the international framework for radiation safety and protection, the actions set out in the National Strategy are intended to reflect the following guiding principles.

1. Risk-based, proportionate approach

A risk-based, proportionate (or graded) approach to regulation requires risk identification, risk assessment, and proportionate management of risks in radiation practices to take maximum advantage of different technologies and embed their use while catering for local challenges. This National Strategy is intended to establish a framework for a nationally consistent risk informed approach to regulation for radiation safety and protection.

2. Recognise the benefits

A balanced and responsive approach to regulation for radiation safety and protection is vital for minimising harms while maximising benefits. The safe and justified use of radiation and nuclear technologies provides all Australians with significant benefits, ranging from improved diagnostic and treatment options in medicine, through to advanced manufacturing and environmental management technologies. This National Strategy is intended to acknowledge the benefits to be gained from the safe and justified use of radiation.

3. Engagement, transparency and trust

The trust of stakeholders is fundamental to the success of all regulatory systems. The public relies on people with expert knowledge of technology and its applications, to identify, assess and manage risks to ensure the technology is applied and used safely in terms of human health and the protection of the environment. Regulators can build trust by promoting leadership and management for safety and protection, by being visible in communities affected by facilities and activities of major significance, and by building a strong safety culture. The National Strategy intends to promote the development of strategic actions to assist regulators in this endeavour.

4. Predictability and consistency

All Australians deserve a predictable and consistent level of radiation protection, irrespective of where they live or work, and regardless of jurisdiction. This requires consistency in regulatory implementation, and in ensuring consistent regulatory outcomes. This National Strategy is intended to enshrine interjurisdictional and inter-agency collaboration and coordination to ensure nationally consistent arrangements for the protection of people and the environment from the harmful effects of radiation.

5. Intergenerational equity

Regulating radioactive materials requires a “cradle-to-grave” (i.e. full life cycle) approach, including the need to make appropriate provision for human and financial resources at all stages of the life cycle of these materials, including decommissioning, safe and secure disposal and, where relevant, facility and environmental remediation. A goal of the National Strategy is to promote the development of strategic actions to ensure provision is made for human and financial resources at all stages of the radiation life cycle to ensure intergenerational equity.

6. International alignment

Australia is a long-standing and influential contributor to international safety and protection standards for radiation protection. In addition to being a member state of the IAEA, Australia participates in the research and development of standards for radiation protection. A goal of the National Strategy is to promote the development of strategic actions to ensure Australia continues to align with international practice, and continues to actively participate in the development and implementation of international standards.

7. Evidence-based policy

The development and amendment of radiation safety and protection codes and standards in Australia is informed by extensive research and development, with comparisons made against peak scientific advice, established best practice and peer review processes. The National Strategy

recognises the value of this research and development in ensuring people and the environment are protected from the harmful effects of radiation.

Implementation and governance

The National Strategy will be supported by an intergovernmental agreement (IGA) on radiation protection standards and regulation. The IGA will formalise jurisdictions' commitment to work to achieve the aim of delivering a comprehensive, equitable radiation safety and protection system for Australia that continues to protect people and the environment from the harmful effects of radiation. This aim will be achieved by providing consistent standards of protection, while maximising the benefits that can be provided by technologies that use radiation to ensure the best possible public health outcomes for the community.

Each Australian government and regulator has a different role to play in implementing a national framework for radiation safety and protection. This is because each jurisdiction has its own laws, institutions and frameworks within which it manages radiation. The National Federation Reform Council (NFRC) provides a forum for governments to come together to tackle such matters. The Australian Health Protection Principal Committee (AHPPC) will oversee the National Strategy via the Standing Committee on Environmental Health (enHealth), which comprises officials from the Commonwealth, state and territory governments. enHealth will drive and monitor implementation of initiatives and review the effectiveness of the National Strategy.

Ensuring Australia has a strong, robust and internally consistent regulatory framework for radiation safety and protection will instill confidence in bureaucracies and the public that Australia's radiation regulators are doing all they can to ensure the protection of people and the environment from the harmful effects of particular sources of radiation. To embed lasting change, legislative changes may be required to give effect to the objectives outlined above. This will require a collaborative effort by governments to identify and remedy duplicative requirements across jurisdictions and agencies, with a view to building on and improving existing systems to develop a more nationally consistent approach to the regulation of radiation in Australia.

The National Strategy is accompanied by an implementation plan, that sets out specific actions which will be prioritised by governments in their work to achieve each of the five objectives outlined above. While these actions will focus on achieving tangible outcomes, there will continue to be discussions across governments, regulators and interested sectors to continue to shape the reform agenda for radiation safety and protection in Australia. These actions may be revised from time to time and new actions may be identified and developed, echoing the objectives of the National Strategy, and building upon the significant work by jurisdictions to successfully manage the use of radiation across Australia.

Monitoring and reporting progress

To ensure progress is made and measured, enHealth will be responsible for reporting against the strategic actions set out in the National Strategy to Health Ministers via the AHPPC.