



Integrated Regulatory Review Service

ACTION PLAN

Australia's Action Plan for Implementing
the Findings of the 2018 Integrated
Regulatory Review Service Mission

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Foreword

In December 2015, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) requested the International Atomic Energy Agency (IAEA) to organise and co-ordinate an Integrated Regulatory Review Service (IRRS) mission to Australia, to review Australia's national arrangements for radiation protection and nuclear safety. The mission, involving 15 international experts, three IAEA staff and two observers, took place in November 2018.

This was the second IRRS mission to Australia. The first mission, which was carried out in 2007 and subsequently followed up in 2011, covered ARPANSA's regulatory activities, including regulation of all nuclear installations as defined in Commonwealth legislation.

However, the largest number of entities using or producing radiation in Australia are regulated by the States and Territories. All States and Territories were invited to participate in the 2018 IRRS mission. The 2018 mission was the largest multi-jurisdictional IRRS carried out in any IAEA member state to date. It provided a comprehensive review of Australia's national system for radiation protection and nuclear safety, and its implementation in the Commonwealth, the States and the Territories. Matters that concern uniformity of regulation in a multi-jurisdictional context were identified and discussed during the mission.

This Action Plan builds on the Advance Reference Material provided to the IAEA ahead of the mission, responds to the recommendations and suggestions contained in the Mission Report and input provided by regulators in all nine jurisdictions under the auspices of the Environmental Health Standing Committee (enHealth) of the Australian Health Protection Principal Committee (AHPPC). EnHealth will guide the actions Australia takes in response to the mission report. A follow-up IRRS mission to assess progress against all recommendations and suggestions is planned for 2022.

We would like to express our sincere gratitude to all contributors from regulatory agencies and health departments across Australia for their efforts and dedicated work to strengthen radiation protection and nuclear safety in Australia.

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Chair
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1. The Australian regulatory framework for radiation protection and nuclear safety

Each Australian state and territory, and the Commonwealth, has one or more regulatory authorities with responsibilities for regulatory management of radiation risks. The IAEA uses the term ‘regulatory body’, which may be a single authority or a system of authorities that collectively carry out regulatory functions. The federal system of government in Australia means that authorities of the Commonwealth, States and Territories carry out such functions.

Each jurisdiction’s regulatory body operates under its own legislation. These Acts either directly establish the regulatory bodies, or establish them under administrative arrangements with powers assigned to an individual, such as the Chief Health Officer within a state or territory or the CEO of ARPANSA at the Commonwealth level.

Jurisdictions may have separate authorities for resource and mining activities, environmental protection, workplace health and safety, and public health. All of these can have specific roles in the control of radiation risks. Some regulatory functions, for example approval and inspection powers, may be split between separate authorities.

Most regulatory bodies with primary responsibility for radiation regulation are within their respective jurisdiction’s health portfolio and report to their health minister directly or through their department. Two regulatory bodies (in South Australia and New South Wales) sit in the environment portfolios and collaborate with their health portfolio counterparts on relevant issues. ARPANSA is an agency under the health portfolio, with direct reporting lines to Senator the Hon Richard Colbeck, the Minister for Aged Care and Senior Australians, and the Minister for Youth and Sport, and to Parliament.

The multiple legal frameworks for control of radiation risks in Australia, and the multiple authorities that make up the regulatory body in different jurisdictions, was a challenge for the 2018 IRRS mission. It will also be a challenge for a nationally consistent response to the recommendations and suggestions contained in the Mission Report. However, the IRRS has also led to acknowledgement of the need for strengthened governance of the process for achieving consistency, and this Action Plan is evidence that these new governance arrangements are beginning to take effect.

The Action Plan presented in this document is the result of collaboration between regulatory bodies across all jurisdictions. While it is based on the IRRS, it is also an outcome of a strengthened national approach to achieve regulatory outcomes that ensure that Australia addresses the most significant challenge that was identified in the IRRS Mission Report, namely, to “ensure a consistent level of safety and protection of people and the environment across all jurisdictions, in principle and in practice”.

2. The Australian IRRS

In 2015, the Australian Government, via the Australian Permanent Mission to the United Nations in Vienna, requested the IAEA to co-ordinate an international team of senior nuclear and radiation safety experts to perform a peer review of Australia's regulatory framework for radiation protection and nuclear safety. Accordingly, IAEA assembled a team of 15 international experts and three IAEA staff to carry out an IRRS, covering the relevant national arrangements in Australia. An IRRS *mission* to Australia was conducted from 5 to 16 November 2018, hosted at ARPANSA's facilities in Yallambie (Melbourne, Victoria). Two experts from Singapore's National Environment Agency participated in the mission, as observers.

2.1 Scope

An IRRS mission has a modular structure that covers legislation, international engagement, the regulatory body, management systems, authorisation, review and assessment, inspection, enforcement, regulations and guides, emergency arrangements and interface with security. It also covers medical, occupational and public exposures to radiation, as well as discharges, clearance and existing exposure situations. The IAEA has published detailed guidelines for the conduct of an IRRS, see https://www-pub.iaea.org/MTCD/Publications/PDF/SVS-23_web.pdf¹.

The mission scope included ARPANSA's role and responsibilities as the Commonwealth regulator for radiation protection and nuclear safety in all modules. In addition, all state and territory regulatory bodies provided information relevant for the modules on authorisation, review and assessment, inspection, enforcement, and regulations and guides; and for specific areas (radiation sources control, transport, and medical exposure control). The mission also included a policy issue discussion on national uniformity of radiation protection and nuclear safety policy and practices across the Commonwealth, States and Territories.

The scope did not include the uranium mining and milling industry and the management of waste containing naturally occurring radioactive material.

2.2 Conduct

ARPANSA coordinated the compilation of the Advance Reference Material (ARM), which was submitted to IAEA two months before the IRRS mission. The ARM included self-assessments, a Summary Report with a draft Action Plan, and a large number of supporting documentation. During the mission, the IRRS team verified the information contained in the ARM, and requested and reviewed supplementary documentation as necessary.

The IRRS team met with representatives of Queensland Health, the New South Wales Environment Protection Authority, Victoria's Department of Health and Human Services, South Australia's Environment Protection Authority, Tasmania's Department of Health, Western Australia's Radiological Council, the Northern Territory's Department of Health, the Australian Capital Territory's Health Protection Service, the Commonwealth's Department of Health and ARPANSA.

¹ The review was carried out against the 2013 Guidelines for IRRS; these have subsequently been superseded by the 2018 edition.

An IRRS mission does not grade a member state's system for radiation protection and nuclear safety. It provides a peer evaluation of the host state's regulatory infrastructure in relation to the IAEA safety standards², in particular the safety requirements. IRRS missions provide for discussion among experienced regulators regarding both technical and policy issues of a regulatory nature. Regulatory experiences are shared and regulatory approaches are harmonised among states, with due consideration to the national context. Both technical and policy discussions conducted during IRRS missions take into account issues identified during the states' self-assessment, and the review of regulatory technical areas.

The IRRS team issues recommendations and suggestions to the host, and identifies good practices. The *number* of recommendations, suggestions and good practices is not a measure of the status of the national system for radiation protection and nuclear safety.

- **Recommendations** are given where aspects relative to the safety requirements are missing, incomplete, or inadequately implemented.
- **Suggestions** identify opportunities for improvement not directly related to inadequate conformance with the safety requirements, but which should be shared with the host country. Suggestions may contribute to improvements in national regulatory arrangements but are primarily intended to make the regulatory body's performance more effective or efficient, to indicate useful expansions of existing programmes and to point out possibly better alternatives to current regulatory, technical or policy activities.
- A **good practice** is identified in recognition of an outstanding organisation, arrangement, programme or performance, superior to those generally observed elsewhere.

In addition to addressing the technical safety requirements for effective regulatory control, it is important to consider the broader policy implications for member states receiving peer reviews and to share insights with the wider international community. Consideration of both the technical and policy issues provides opportunities for improvements to regulatory infrastructure and identifies strategies that might be shared with other member states. The importance of international peer reviews in this regard has been acknowledged at the periodic review meetings under the terms of the Convention on Nuclear Safety, and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. Australia is party to both of these conventions.

A follow-up mission should be undertaken in due course, and within four years of the initial mission. A follow up IRRS mission to Australia is planned for early 2022. During the follow-up mission, the host country and IRRS team assess progress in implementing the recommendations and suggestions in the period since the initial review. The team may conclude that a specific recommendation or suggestion can be closed on the basis of the implementation being complete; closed on the basis of progress and confidence; or remain open. The IRRS follow-up mission also provides the opportunity for the IAEA, international reviewers and host country to identify additional technical and policy issues for review, to identify further good practices and through feedback, provide input for the review of the IAEA safety standards.

² The safety standards have a hierarchical structure with *fundamentals* (outlining safety principles) at the top. The next level is the *safety requirements* ('shall-statements') followed by *safety guides* (which provide and guidance on how to comply with the *safety requirements*)

2.3 Outcomes overview

ARPANSA published the final report from [Australia's IRRS mission on 13 February 2019](#).

This was the first IRRS to undertake a comprehensive multi-jurisdictional review of a federated constitution in which all of the jurisdictions are self-governing. This was identified as a good practice by the IRRS team and a model that other federated countries may want to consider when planning for future IRRS missions. The IRRS team observed a high level of engagement by participants from the Commonwealth, States and Territories, demonstrating a strong commitment to continuous improvement in radiation protection and nuclear safety.

Other good practices identified by the IRRS team were:

- the availability of comprehensive guidance for radiation protection in existing exposure situations
- ARPANSA's succession planning for all positions
- ARPANSA's holistic integration of risks in the management processes.

A total of 23 recommendations and 12 suggestions were issued; these are listed in Appendix I. The IRRS team recognised that many of the recommendations and suggestions confirmed or elaborated on the actions identified by Australia's jurisdictions as a result of their self-assessments. The IRRS team identified the following key issues warranting attention or improvement and believes that consideration of these would enhance the overall performance of the regulatory systems.

- The Commonwealth Government should make a firm commitment and take actions with specific milestones to address decommissioning of facilities and radioactive waste management by assuring the strategy, programmes, funding and technical expertise for safe completion are in place.
- The Commonwealth Government, in conjunction with state and territory governments, should ensure full implementation of the Code of Conduct on the Safety and Security of Radioactive Sources, continuing to promote the safe and secure use of radioactive sources. This will contribute to the safety and security of the domestic and international communities and fulfil Australia's commitment to this important international instrument.
- The Commonwealth, state and territory governments should ensure that all parties having responsibilities for safety of facilities and regulatory activities have the necessary competence and resources to carry out their responsibilities.
- State and territory regulatory bodies should establish a strategy and allocate resources to ensure that inspections of facilities and activities are conducted consistently and in accordance with a graded approach.
- Regulatory bodies in all jurisdictions should assess domestic and international experience related to nuclear and radiation safety and evaluate the need for updating their processes for authorization, review and assessment, inspections and regulations.
- ARPANSA should establish criteria to evaluate the effectiveness of licensee's emergency exercises and assign roles and responsibilities for its staff during emergency situations.
- ARPANSA should complete its work on the integrated management system including promotion of leadership and management for safety.

The most significant challenge to Australia, in the view of the IRRS team, is to establish a national framework for radiation safety that assures a consistent level of safety and protection of people and the environment across all jurisdictions, in principle and in practice. While there are on-going activities to address consistency in the Australian radiation safety programmes, the IRRS team noted several areas where further efforts are warranted.

3. The Action Plan

As per the IRRS guidelines, Australia developed a draft Action Plan as part of preparing the Advance Reference Material. The draft was included in the Summary Report. The guidelines also recommend host countries amend the plan to address the recommendations and suggestions contained in the Mission Report. This document is the amended Action Plan.

A planning matrix that lists all recommendations and suggestions is at Appendix I. The matrix identifies responsibilities, actions and time-frames. It will assist in monitoring progress, while details will be delegated to those identified as responsible for each specific action. ARPANSA will maintain the matrix current as work progresses with implementation of recommendations and suggestions contained in the Mission Report.

The matrix divides the recommendations and suggestions into five categories, depending on the specified audience:

- The Australian Government – two recommendations (Appendix I.A)
- Australian Governments, meaning all nine jurisdictions – seven recommendations and three suggestions (Appendix I.B)
- Regulators, meaning all nine regulatory bodies – four recommendations and two suggestions (Appendix I.C)
- State and territory regulators only – two recommendations and one suggestion (Appendix I.D)
- ARPANSA only – eight recommendations and six suggestions (Appendix I.E).

3.1 Actions for the Australian Government

Both recommendations to the Australian Government relate to policy matters for the national radioactive waste management facility and for addressing issues associated with decommissioning.

The Commonwealth Department of Industry, Science, Energy and Resources (DISER) and the Australian Radioactive Waste Agency is the appropriate agency to implement these recommendations. DISER will report on its progress against the two recommendations to ARPANSA.

3.2 Actions for the Australian Governments and all, or only state and territory, regulators

The IRRS mission was a multi-jurisdictional exercise that reviewed all nine Australian regulatory bodies. One of the main findings of the mission was that Australia should work towards a nationally uniform approach for radiation protection to ensure a consistent level of safety for people and the environment. As such, a significant number of recommendations and suggestions are addressed to all nine jurisdictions.

The governance of these recommendations and suggestions in this IRRS Action Plan will occur through existing mechanisms. The Australian Health Protection Principal Committee (AHPPC) endorsed this plan in December 2020. The AHPPC provides health protection policy oversight and manages responses to national health emergencies, via the Environmental Health Standing Committee (enHealth).

enHealth will have general oversight of the process of implementing the multi-jurisdictional recommendations and suggestions. However, day-to-day oversight of the process will be delegated to the Radiation Health Expert Reference Panel, which operates under terms of reference developed by the Commonwealth Department of Health. The Panel will meet as required under the chairmanship of the chair of enHealth and consist of representatives from each jurisdiction. The representatives will be experts in radiation protection regulation.

enHealth will develop specific work programs to address each of the findings from the IRRS report. These work programs will ensure that existing work under the Radiation Health Committee and other groups, plus any new initiatives are progressed consistently and with adequate resources. enHealth will also progress development of a national strategy for radiation protection, which not only addresses a specific recommendation from the IRRS but will be the basis for pursuing consistency in application of radiation protection across the jurisdictions. The work programs will be used to generate progress reports against this action plan.

3.3 Actions for ARPANSA

The actions for ARPANSA are able to be implemented by ARPANSA. enHealth and the Radiation Health Committee will be informed of actions and progress, and as necessary consulted. ARPANSA has developed a governance structure to document progress of implementation. The progress against each recommendation and suggestion is reported to ARPANSA's Executive Group every six months.

4. Preparations for the follow-up IRRS mission

Australia will seek to host a follow-up IRRS mission in early 2022. The follow-up mission will be coordinated by the IAEA and will review Australia's progress in response to the initial IRRS mission recommendations and suggestions.

This national action plan will assist in providing the basis for the Advance Reference Material for the follow-up mission—the main source of information that outlines Australia's progress on implementing the outcomes of the initial mission. All jurisdictions have agreed to participate in the follow-up mission.

1 Appendix: Planning Matrix

A. Findings addressed to the Commonwealth Government

No.	Recommendations	Lead agency	Key Stakeholders	Proposed Actions
R2	The Commonwealth Government should establish and implement a strategy to give effect to the policy principles and goals in the Australian Radioactive Waste Management Framework.	Department of Industry, Science, Energy and Resources (DISER)	ANSTO, ARPANSA	<ul style="list-style-type: none"> DISER will establish a dedicated agency which will be responsible for the establishment of the National Radioactive Waste Management Facility (the Australian Radioactive Waste Agency – ARWA) ARWA will be responsible for implementing a strategy to give effect to the policy principles and goals in the Australian Radioactive Waste Management Framework.
R3	The Commonwealth Government should establish a national policy and strategy for decommissioning of facilities.	DISER	ANSTO, ARPANSA	<ul style="list-style-type: none"> The Australian Radioactive Waste Agency (ARWA) will be responsible for establishing a national policy and strategy for decommissioning of facilities.

B. Findings addressed to the Commonwealth Government, in conjunction with States/Territory Governments (or to 'the Governments')

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
R1	The Commonwealth Government, in conjunction with state and territory Governments, should ensure a consistent level of protection of people and the environment through effective coordination and harmonized implementation of codes and guides by the Commonwealth, States, Territories and regulatory bodies.	enHealth	ARPANSA, S/T regulators, Radiation Health Expert Reference Panel	<ul style="list-style-type: none"> As committed to in response to S1, enHealth will develop a National Strategy for Radiation Protection (the National Strategy). Under the framework of the National Strategy, enHealth will develop an Intergovernmental Agreement (IGA) on radiation protection. This IGA will strengthen harmonisation and implement a process for the resolution of inconsistencies in implementation of national codes, referring advice on legislative changes to Ministers, as required. See also R15, S10.
R4	The Commonwealth Government, in conjunction with state and territory Governments, should ensure that financial provisions are provided to enable the management of disused radioactive sources.	enHealth	ARPANSA, S/T regulators, Radiation Health Expert Reference Panel	<ul style="list-style-type: none"> NDRP2 is to be updated with the requirement for jurisdictions to ensure financial provisions are provided for the management of end of life or disused sources. EnHealth will develop a policy paper addressing the management of end of life or disused radioactive sources, including consideration of financial provisions.

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
R5	The Governments should ensure that all parties having responsibilities for safety of facilities and regulatory activities have the necessary competence and resources to carry out their responsibilities.	enHealth	ARPANSA, S/T regulators	<ul style="list-style-type: none"> Competency requirements will be progressed by enHealth through the development of the <i>National Strategy</i>. State and territory regulators will undertake a self-audit against the IAEA's General Safety Guides 12 (Organization, Management and Staffing of the Regulatory Body for Safety) and 13 (Functions and Processes of the Regulatory Body for Safety) to identify gaps. This will inform decisions about competencies and resources. enHealth's regulatory workforce project will also assist in undertaking a gap analysis of supply and demand in the workforce.
R6	The Commonwealth Government, in conjunction with state and territory Governments should ensure full implementation of the Code of Conduct on the Safety and Security of Radioactive Sources.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> NDRP2 is to be updated with the requirement to implement the IAEA Code of Conduct on the Safety and Security of Radioactive Sources. The Radiation Health Committee has a project to investigate re-activating the Sealed Source Register, which would be a key tool in ensuring Australian compliance with the Code of Conduct. This will also be considered as part of the response to R4, in which enHealth will

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
				develop a policy paper on the management of end of life and disused radioactive sources.
R17	The Commonwealth Government, in conjunction with state and territory Governments should ensure that the roles and responsibilities of ARPANSA in emergency preparedness and response both for incidents involving its own licensees and for incidents in the States and Territories are clearly assigned and exercised.	enHealth	AHPPC, ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> • The Commonwealth will review the national planning framework for emergencies, engaging with jurisdictions and relevant groups, to ensure the framework remains current and appropriately articulates ARPANSA's role. • In conjunction with this, enHealth will develop a national framework for the management of radiation incidents of national significance for inclusion in the <i>National Strategy</i>. • Actions performed under this recommendation will be integrated with Australia's proposed actions under the Joint External Evaluation National Action Plan.

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
R20	The Governments should ensure the new Code for Radiation Protection in Medical Exposure is consistent with IAEA Safety Standards GSR Part 3 and take steps to adopt and implement it.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> • Finalise Medical Code RPS C-5 • RHC approve Medical Code RPS C-5 • Publish Medical Code RPS C-5 on ARPANSA website • RHC will develop guidance on the technical application of the Medical Code for regulated entities and individuals. • EnHealth will develop guidance for regulators on the implementation of the code. • Medical Code to be endorsed by health ministers when NDRP2 is sent for approval.
R22	The Commonwealth Government, in conjunction with the state and territory Governments, should progress the adoption and implementation of uniform clearance levels.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> • NDRP2 to be updated with the requirement for jurisdictions to adopt the clearance levels in Schedule 1 of GSR Part 3. • enHealth will provide guidance on the application of clearance levels in accordance with Schedule 1 of GSR Part 3.

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
S1	The Commonwealth Government, in conjunction with state and territory Governments, should consider formalizing the existing elements of the framework for safety into a comprehensive national policy and strategy for safety.	enHealth	ARPANSA, S/T regulators, enHealth, RHERP	<ul style="list-style-type: none"> enHealth will develop a National Strategy for Radiation Protection (the <i>National Strategy</i>). This strategy will be agreed by all jurisdictions through an Intergovernmental Agreement. The strategy will provide greater impetus and a clearer framework to strengthen harmonisation. The <i>National Strategy</i> and Intergovernmental Agreement will provide the implementation mechanism for the response to other action items including R1 (ensuring a consistent level of protection and greater harmonisation in codes), and S10 (review of the regulatory framework to identify gaps).
S9	The Commonwealth Government, in conjunction with state and territory Governments should consider revising the process to maintain and update the NDRP and the means for implementing codes in order to support timely adoption and implementation of new national codes.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> Amend governance section in NDRP2 to provide for a more efficient process to maintain and update the NDRP and for timely incorporation of Codes in the NDRP.

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
S11	The Governments should consider developing common competency requirements for relevant medical professionals in radiation protection and safety and ensuring consistent application across the jurisdictions.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> enHealth will engage with the Australian Health Practitioners' Regulatory Agency (AHPRA) to determine whether AHPRA registration of a medical radiation professional is sufficient qualification to operate certain medical radiation equipment. enHealth will take the advice of AHPRA and ensure it is incorporated in a consistent manner through the Intergovernmental Agreement. This will also link in with broader work under the <i>National Strategy</i> in response to R5 to determine competency and resourcing requirements for regulators.

C. Findings addressed to ARPANSA and State/Territory regulators (or to 'regulatory bodies')

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
R7	Regulatory bodies should assess the need for updating regulatory requirements or guidance, review and assessment, inspection and licensing processes after considering the events reported in ARIR, especially the noteworthy events highlighted in the annual ARIR report.	enHealth	ARPANSA, S/T regulators	<ul style="list-style-type: none"> enHealth is to review existing incident reporting systems, including the ARIR, and work with stakeholders to design an improved national system for reporting and reviewing incidents, including a feedback mechanism to improve regulatory policy and processes.
R12	Regulatory bodies as well as the Civil Aviation Safety Authority and the Australian Maritime Safety Authority, should coordinate to ensure consistent review of applications for approval of package design and special form radioactive material design.	enHealth	ARPANSA, S/T regulators, Civil Aviation Safety Authority, Australian Maritime Safety Authority	<ul style="list-style-type: none"> enHealth and ARPANSA will re-establish a formal mechanism to coordinate with, CASA and AMSA to develop and implement a system for a nationally consistent approach to the review of applications for approval of package design and special form radioactive material design.
R15	Regulatory bodies should ensure that their regulations for the safe transport of radioactive material align with the latest revision of the Code for the Safe Transport of Radioactive Material (Radiation Protection Series C-2) and ensure that these regulations apply to all operations specified in the scope of the IAEA Regulations for the Safe Transport of Radioactive Material SSR-6.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> enHealth will investigate the most efficient mechanisms for all jurisdictions to automatically adopt the Code.

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
R21	ARPANSA, in conjunction with state and territory regulatory bodies, should revise the current requirements on occupational radiation protection to ensure compliance with IAEA Safety Standards GSR Part 3.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> • The Planned Exposure Code (RPS C-1) is to be revised to include the following: <ul style="list-style-type: none"> ○ specific dose limits for apprentices and students from 16 to 18 years of age ○ conditions of service of workers have to be independent of whether they are or could be subject to occupational exposure and that no compensatory arrangements or preferential considerations can exist ○ health surveillance for exposed workers • EnHealth will develop an implementation framework for the Planned Exposure Code including authorisation or approval of dosimetry services for the exposed workers
S2	ARPANSA, in conjunction with the state and territory regulatory bodies, should consider improving on the methods to better disseminate national and international experience gained by the regulatory bodies across the Australian jurisdictions.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies	<ul style="list-style-type: none"> • enHealth will develop and implement a system to effectively disseminate national and international experience gained by the regulatory bodies across the Australian jurisdictions. This will include establishing a Radiation Protection Network to enable information sharing across jurisdictions.

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
S10	ARPANSA, in conjunction with the state and territory regulatory bodies should consider completing a review of the regulatory framework and prioritizing identified gaps to ensure that it is comprehensive and provides adequate coverage commensurate with the radiation risks associated with the facilities and activities in accordance with a graded approach.	enHealth	ARPANSA, S/T regulators, Commonwealth Department of Health, S/T policy agencies.	<ul style="list-style-type: none"> As per the responses to S1 and R1, this will be implemented through the development of the <i>National Strategy</i> and IGA.

D. Findings addressed to state and territory regulators

No.	Recommendations	Responsible committee	Key Stakeholders	Proposed Actions
R13	The state and territory regulatory bodies should develop an inspection strategy and carry out a resource allocation assessment.	enHealth	S/T regulators, S/T policy agencies	<ul style="list-style-type: none"> enHealth will establish a process for sharing regulatory practice tools via a Radiation Protection Network as committed to in response to S2. As part of the response to R5, state and territory regulatory bodies will undertake a self-audit against IAEA GSG-12 and GSG-13. This will include consideration of inspection strategies and resourcing.
R14	State and territory regulatory bodies should have an enforcement policy to provide staff direction in the application of enforcement actions commensurate to the significance and nature of any regulatory non-compliance.	enHealth	S/T regulators, S/T policy agencies	<ul style="list-style-type: none"> enHealth will develop nationally agreed enforcement principles, including application of the risk-based framework to non-compliance.
S5	The state and territory regulatory bodies should consider reviewing their requirements for authorization (authorization by licence vs authorization by registration and duration of an authorization), based on their regulatory experience and risks, with the goal of making better use of existing regulatory resources.	enHealth	S/T regulators, S/T policy agencies	<ul style="list-style-type: none"> EnHealth will support this work through R1 (ensuring a consistent level of protection) and will undertake a project to examine authorization requirements.

E. Findings addressed to ARPANSA

No.	Recommendations	Lead Branch/Office (ARPANSA)	Actions to perform
R8	ARPANSA should enhance its human resource management to include an assessment of the number and capabilities of staff required to effectively perform their regulatory and emergency response duties and enhance their training programme based on an analysis of the necessary skills and competencies.	Office for People Strategies and Wellbeing / Radiation Health Services Branch	<ul style="list-style-type: none"> • Undertake review of Regulatory Services Branch and Monitoring and Emergency Response Section (Radiation Health Services) to determine required capabilities and develop a service and learning matrix that outlines the essential knowledge, skills and abilities needed to perform the regulatory functions. • Review and enhance existing annual training programmes to support identified capability development.
R9	ARPANSA should further define, develop, and document its processes including sequencing of the processes and the interactions between interfacing processes within the IMS.	Office of the CEO	<ul style="list-style-type: none"> • Develop and implement processes for all non-laboratory activities, including regulatory processes and corporate support processes (such as finance, IT, human resources, • Enhance the interactions between interfacing processes within the IMS by implementing incremental improvements to the documentation and IMS portal (staff intranet) • Monitor and evaluate the implementation of new processes through internal and external audits, non-conformance reporting and management reviews.
R10	ARPANSA should undertake an independent assessment of leadership for safety and safety culture covering all organizational levels and all functions in the organization.	Regulatory Services Branch / Office for People Strategies and Wellbeing	<ul style="list-style-type: none"> • The safety culture assessment which was trialled on RSB will be rolled out to the whole Agency.

R11	ARPANSA should conduct a comprehensive evaluation to determine whether its current regulatory oversight measures (regulations and guides, review and assessment, inspection and licensing) should be modified, based on lessons learned, including but not limited to those identified in the ANSTO independent safety review report, of the events that occurred at the ANSTO Health facility.	Regulatory Services Branch	<ul style="list-style-type: none"> • ARPANSA is in the process of reviewing the completeness of its regulatory guidance, including licensing and assessment, inspection, compliance and enforcement manuals and other documentation to include lessons learned from the ANSTO Health independent review report.
R16	ARPANSA should develop criteria for evaluation of licensee exercises, to include the observation of exercises as part of the inspection process and ensure that licensees exercise all aspects of their emergency plan over an agreed time period and in line with a graded approach.	Regulatory Services Branch	<ul style="list-style-type: none"> • Criteria to be established in the Emergency Exposure Guide (Based on GSG-2.1/2.2) • Training to be developed in a graded approach • Exercises to be inspected
R18	ARPANSA should strengthen its Incident Management Plan by assigning roles and responsibilities, ensuring all elements of the Plan are tested and addressing lessons learned following exercises or real events.	Radiation Health Services Branch	<ul style="list-style-type: none"> • Conduct desktop discussion exercise of IMP to assign, agree and de-conflict roles and responsibilities. Clarify role of IMP in meeting ARPANSA's obligations as a license holder viz R16. • Develop rolling training drills and exercise program. • Use IMS OFI register to capture lessons identified from exercises.
R19	ARPANSA, in collaboration with professional bodies, should establish DRLs for medical exposures incurred in	Medical Radiation Branch	<ul style="list-style-type: none"> • Constitute a liaison panel of representatives from professions involved in image-guided interventional procedures (IGIP)

	medical imaging, including image guided interventional procedures, where practicable.		<ul style="list-style-type: none"> • Liaison panel to review data collected on IGIP and consider recommending one or more DRLs • Liaison panel to review procedures surveyed and data elements collected for IGIP and make recommendations to improve to program
R23	ARPANSA should make provision for an independent monitoring programme to confirm the monitoring results submitted by licensees and should consider basing the programme on an assessment of the nuclides that make a major contribution to public dose.	Regulatory Services Branch / Radiation Health Services Branch	<ul style="list-style-type: none"> • Monitoring program initiated in 2018-19 through detailed work plans. • Implementation of monitoring program by end FY2019-20. • Refine monitoring program after initial period of monitoring. • Identification of radionuclides that are major contributor to the dose to inform S12.
S3	ARPANSA should consider formalizing its arrangements to independently review its oversight of regulated facilities and activities undertaken by ARPANSA, including their authorization, review and assessment, and inspection.	Regulatory Services Branch	<ul style="list-style-type: none"> • Finalise draft memoranda of understanding (MoU) with SA and NSW EPAs. • Prepare draft MoUs with remaining S/T regulators.
S4	ARPANSA should consider developing and implementing requirements for authorized parties to establish effective mechanisms of communication with interested parties.	Regulatory Services Branch	<ul style="list-style-type: none"> • An internal review of this requirement will be undertaken.
S6	ARPANSA should consider revising the regulation and guidance for licensing of research reactors to include extended shutdown and associated submission requirements.	Regulatory Services Branch	<ul style="list-style-type: none"> • This suggestion can be accommodated by use of appropriate licence conditions.

S7	ARPANSA should consider revising the conditions of licence to require decommissioning plans for all life stages of the facility.	Regulatory Services Branch	<ul style="list-style-type: none"> • Licences to be revised to reflect this condition. • Regulations to be amended to include requirements for decommissioning plans for all life cycle stages.
S8	ARPANSA should consider requiring the licensee to perform severe accident analysis, assess design extension conditions and update final safety analysis accordingly.	Regulatory Services Branch	<ul style="list-style-type: none"> • For other facilities, particularly nuclear installations, the updated safety analysis (every three years) to address the design extension conditions. • Regulations are proposed to be amended to include a safety analysis report at all stages of the life cycle of a facility. • Accompanying regulatory guidance on Design Extension Conditions and content of the SAR will need to be produced.
S12	ARPANSA should consider applying nuclide specific discharge limits as part of the approved operating limits and conditions.	Regulatory Services Branch / Radiation Health Services Branch	<ul style="list-style-type: none"> • Relevant licences to be amended reflecting the discharge limits based on the current discharge notification levels. • Information from implementation of R23 is required to inform this recommendation.