Australian Government

ANSTO
Science. Ingenuity. Sustainability.

POSITION DESCRIPTION

Position Title:	Senior/Principal Automation Specialist
Cluster / Business Unit / Division	Nuclear Science & Technology
Section or Unit:	Health Research and Technology Group
Classification:	Band 6/7 (Linked)
Job Family:	Research
Position Description Number:	PD-2613
Work Contract Type:	Science /Development
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Science

POSITION PURPOSE

Senior Automation Specialist - Band 6

The Senior Automation Specialist is responsible for designing, developing and implementing automated and semi-automated systems that enhance the safety, reliability and efficiency of radiochemical processes across the Health Research and Technology Group (Health RTG). The role focuses on translating radiochemical workflows into practical engineered solutions suitable for deployment in controlled environments such as hot cells, fume hoods and gloveboxes.

Principal Automation Specialist - Band 7

The Principal Automation Specialist provides leadership in the development of radiochemistry automation across the Health RTG to strengthen ANSTO's sovereign capability in radioisotope and radiopharmaceutical development. The role sets technical standards, leads complex and high-risk automation initiatives, and shapes long-term capability and infrastructure planning to support safe, scalable and translationally ready radiochemical processes.

ORGANISATIONAL ENVIRONMENT

ANSTO is a leading global nuclear science and technology organisation delivering world class research and expertise to benefit Australia and support a more sustainable future. Using nuclear science, we improve health, support industries, provide expert advice to government on nuclear technologies and help develop Australia's nuclear workforce.

Nuclear Science & Technology (NST) incorporates ANSTO's research, innovation, landmark research infrastructure and associated capabilities. NST conducts research and development in relation to nuclear science and technology and connects people, transfers knowledge, and provides nuclear-based products and services for the benefit of Australia.

The Health Research and Technology Group (NST Health) develops nuclear medicine products and technologies, including advanced radiotherapies, to address areas of unmet clinical need. The group maintains core capabilities in radiochemistry, radiobiology, preclinical imaging and radiation physics. NST Health collaborates and partners with academia, the pharmaceutical industry, research clinicians, and hospitals.

The Radioisotopes team develops separations methodologies to optimise the delivery of radioisotopes. The team operates several dedicated pieces of infrastructure and works in close collaboration with the

Radiopharmaceuticals and Nuclear Medicine Development teams to deliver a diverse range of theranostic products and technologies.

Accountabilities & Responsibilities

Key Accountabilities Band 6

- Utilise expert knowledge to ensure the effective design, development and deployment of automated and semi-automated systems that improve the safety, reliability and translational readiness of radiochemical processes.
- Design, develop, assemble, program and operate automated and semi-automated systems that provide innovative solutions for the delivery of safe, reliable and validated radiochemical separations, sample and materials handling, and synthesis workflows, incorporating appropriate controls, monitoring and data capture, supporting research across Health RTG.
- Conduct and support small-scale routine radioisotope production and propose, evaluate, validate and execute new and improved production methods for routine supply of radioisotopes to ANSTO's user communities.
- Collaborate with scientists, researchers, end-users, Health RTG Operations and other stakeholders to understand system requirements and ensure automated systems are effectively integrated with facility and scientific infrastructure, including HVAC, alarms, BMS, hot cells, fume cupboards and radiation detection systems, and provide technical support for system upgrades, optimisation and workflow alignment.
- Engage with ANSTO Infrastructure and Engineering Services (IES) and other technical partners to deliver technical services, such as prototyping, fabrication and project support and contribute to the monitoring, maintenance and calibration of radiochemistry equipment including radiosynthesisers, dispensing modules and QC systems.
- Access funding for capital projects and equipment from a number of sources (e.g. ANSTO Capital Committee and NCRIS) and manage capital equipment through the asset management program.
- Develop and maintain quality and safety documentation, including risk assessments, work instructions, validation records and laboratory procedures, ensuring all experimental work and equipment use comply with ANSTO policies, regulatory obligations and current inventory and safety data requirements.
- Undertake additional duties as required and during period of leave of other staff.

In addition to performing all Band 6 key accountabilities, the key accountabilities for a band 7 position include:

- Provide leadership to shape the long-term direction of radiochemistry automation, establishing technical standards, capability roadmaps and investment priorities that enhance safety, reliability, scalability and national impact across the Health RTG.
- Lead the design, delivery and governance of complex, high-risk or multi-platform automation initiatives, ensuring robust system architecture, lifecycle planning, regulatory compliance and alignment with ANSTO's broader research and commercialisation strategies.
- Develop and drive cross-organisational collaboration by influencing senior stakeholders, integrating automation capabilities across facilities and programs, and guiding strategic partnerships with national and international organisations to accelerate innovation and translational readiness.
- Provide expert mentoring, technical oversight and capability development for radiochemists and technical staff, fostering a high-performance culture, strengthening organisational expertise in automation, and ensuring long-term workforce sustainability.
- Lead advanced product development initiatives to design and deliver fit-for-purpose automation solutions for complex, high-risk or mission-critical radiochemical processes.

Decision Making

Senior Automation Specialist Band 6

- The ANSTO values, organisational corporate plan, integrated business planning process, the NST strategic plan and the Health RTG business plan provide the context for the position.
- Works under broad direction from the Radioisotope Manager and exercises a high degree of autonomy in providing authoritative scientific and technical advice.
- Determine key work priorities and methods within the context of agreed work plans and consult with the line manager on issues that have an impact on the group. The position has some independence in deciding on methods and approaches to achieve performance objectives.
- The position is fully accountable for the accuracy, integrity and quality of advice provided, ensuring that decisions are based on sound evidence, but at times may be required to make effective judgements under pressure or in the absence of complete information or expert advice.
- The position works within a framework of legislation, policies, professional standards, and resource parameters.
- The levels of authority delegated to this position are those approved and issued by the Chief Executive Officer. All delegations will be in line with the ANSTO Delegation Manual AS-1682 (as amended or replaced).

Principal Automation Specialist Band 7

- Works under broad direction from the Line Manager and exercises a high degree of autonomy in providing expert scientific and technical advice, making design decisions and prioritising automation activities to meet safety, operational and research objectives.

Key Challenges

Senior Automation Specialist Band 6

- Translating complex radiochemical and scientific workflows into practical, reliable and safe automation and mechatronic solutions suitable for controlled environments.
- Keeping abreast of advances in radiochemistry automation, control systems, software interfaces, quality systems and radiation safety, and applying new knowledge to improve capability.
- Driving continual improvement by implementing best-practice engineering and automation approaches while delivering intuitive, user centred systems for researchers and operators.
- Managing multiple parallel projects in a technically complex environment, delivering outcomes within tight timeframes and constrained resources.
- Maintaining strong, productive networks across ANSTO and the broader national and international nuclear medicine community to support collaboration and knowledge exchange.
- Supporting the sustainability and reliability of Health RTG's research infrastructure and automation capabilities in the context of evolving operational, regulatory and funding environments.

Principal Automation Specialist Band 7

- Providing authoritative guidance on the automation development plans for radiochemical processes, ensuring long-term capability, regulatory readiness and alignment with ANSTO's research, translational and commercialisation priorities.
- Leading the development of advanced, scalable automation solutions for complex, high-risk or multi-platform radiochemical workflows, ensuring robust design governance, lifecycle planning and radiation safety compliance.
- Integrating automation capabilities across diverse Health RTG and ANSTO facilities, overcoming legacy constraints, infrastructure variability and competing operational priorities.
- Influencing senior stakeholders and decision makers to secure investment, align resources and embed automation as a core enabler of sovereign radioisotope and radiopharmaceutical capability.

- Building and sustaining strategic partnerships with national and international leaders in nuclear medicine, automation, engineering and translational research to accelerate innovation and maintain ANSTO's global relevance.
- Ensuring the continuity, resilience and modernisation of automation and radiochemistry infrastructure in the context of evolving technologies, regulatory expectations and funding landscapes.
- Developing organisational capability by mentoring engineers, radiochemists and technical staff, ensuring knowledge transfer, succession planning and sustained workforce expertise.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Director, Health RTG	• Receive broad guidance and direction.
Radioisotopes Manager, Health RTG	Band 6 • Receive performance expectations aligned with the business plan, operational priorities and project objectives. • Recommend equipment, system and facility modifications or enhancements, and seek approval for process or procedural improvements that support safe, efficient and reliable radiochemical automation. • Provide clear and timely updates on key tasks, issues, risks and priorities to support effective planning and decision making. • Provide expert, evidence based technical advice to inform operational activities, project delivery and automation system optimisation.
Radioisotopes Manager, Health RTG	Band 7 • Provide strategic recommendations on long-term automation capability, investment priorities and infrastructure planning to support ANSTO's radiochemistry, translational research and sovereign production objectives. • Lead major automation and radiochemistry modernisation initiatives and obtain endorsement on program scope, strategic direction, resourcing requirements and risk management approaches. • Advise at a senior level on complex technical, safety, regulatory and operational matters, offering authoritative, evidence-based guidance to inform executive decision making.
Health RTG Team members	Band 6 • Work collaboratively to support the delivery of high impact radiochemistry and automation outcomes. • Provide expert technical advice, analysis and guidance to ensure safe, reliable and efficient radiochemical workflows. • Contribute to shared responsibilities and project outcomes, fostering an environment of collaboration and mutual accountability. • Identify and negotiate practical solutions to competing priorities, resource constraints and workflow dependencies.
Health RTG Team members	Band 7 • Provide authoritative technical leadership to guide the integration of advanced automation solutions into complex radiochemical workflows, ensuring safety, scalability and translational readiness. • Shape radiochemistry and automation capability development by mentoring staff, strengthening technical expertise and fostering a high performance, innovation focused culture.

	• Lead cross-functional coordination to align radiochemical priorities, automation initiatives and facility capabilities across programs, ensuring coherence and efficiency in project delivery. • Resolve high level technical, operational and resource challenges by influencing priorities, negotiating trade-offs and enabling effective decision-making across radiochemistry activities.
Operations Team Members	Band 6 • Collaborate to identify and develop effective interfaces between facility infrastructure and scientific automation systems, ensuring safe and reliable integration. • Align management of capital equipment with the Asset Management Plan
Operations Team Members	Band 7 • Offer authoritative technical guidance on complex infrastructure and system interfaces, informing high-level operational decisions, risk mitigation measures and investment priorities.
Nuclear Medicine, ANSTO IES, and Enablers.	Band 6 • Build and maintain productive collaborations to support the development, optimisation and safe operation of automation and radiochemistry systems that advance nuclear medicine, radiopharmaceutical and radioisotope research.
Nuclear Medicine, ANSTO IES, and Enablers.	Band 7 • Provide strategic leadership and authoritative guidance to ensure automation initiatives align with long-term radiochemistry, translational research and organisational capability priorities.
External	
National & International Collaborators, Partners, Vendors, Government & Industry	Band 6 • Build and maintain productive working relationships with external collaborators, vendors and industry partners to support the development, optimisation and safe operation of automated radiochemical systems and related research activities.
National & International Collaborators, Partners, Vendors, Government & Industry	Band 7 • Forge and sustain high level strategic partnerships with national and international organisations, vendors, research institutes, government agencies and industry to advance radiochemistry automation capability and national nuclear medicine outcomes.

POSITION DIMENSIONS

Staff Data	
Reporting Line	Radioisotopes Manager
Direct Reports	Nil
Indirect Reports	Nil

Financial Data (2025/2026)	
Revenue / Grants	NA
Operating Budget	NA
Staffing Budget	NA
Capital Budget	NA
Assets	NA

Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed
Travel:	Operational needs may require temporary and/or periodic assignments at collaborative partner facilities within Australia or training assignments both nationally and internationally.
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Laboratory facility physical requirements (manual handling, standing for long periods, operating machinery & equipment) Wearing personal protective equipment for the handling of hazardous and/or radioactive materials
Radiation areas:	Will be required to work in radiation areas and undertake duties in an area where radioactive materials are handled under tightly regulated and controlled safety conditions Perform duties with and in an area where hazardous chemicals or materials are handled under tightly controlled safety conditions Perform duties in an area where radioactive materials are handled under tightly controlled safety conditions
Hours:	Willingness to work extended and varied hours based on operational requirements
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements

Workplace Health & Safety	
Specific role/s as specified in AG-2362 of the ANSTO WHS Management System	All Workers Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

ORGANISATIONAL CHART

Refer to published Organisational Chart.

KNOWLEDGE, SKILLS AND EXPERIENCE

Senior Automation Specialist Band 6

1. Degree or equivalent qualification in Mechatronics, or a closely related discipline, with experience in automation and control systems.
2. Demonstrated knowledge and experience applying mechatronics and automation principles, including PLCs, microcontrollers, motion control, fluidic systems and process instrumentation.
3. Experience in designing, developing, maintaining and troubleshooting mechanical or automated systems, with the ability to translate requirements into detailed engineering designs and validated solutions.
4. Experience in planning and delivering technical projects, preferably within a laboratory, production, regulated or complex scientific environment.
5. Experience preparing technical documentation, procedures, validation records and system instructions, and providing accurate project reporting to stakeholders.
6. Strong understanding of Work Health & Safety, radiation safety, environmental, quality and regulatory requirements relevant to radiochemistry or laboratory operations, including ISO 9001, ARPANSA and TGA expectations.

7. Proven ability to build productive working relationships with multidisciplinary teams, including scientists, engineers, operations staff, vendors, collaborators and regulatory stakeholders.
8. Demonstrated ability to work independently, show initiative, manage competing priorities and reliably deliver outcomes within required timeframes.
9. Strong interpersonal, communication and negotiation skills, with the ability to convey complex technical information and influence decisions across diverse stakeholder groups.

In addition to the required knowledge skills and experience above the band 7 level will require:

1. Degree or equivalent qualification in Mechatronics or a closely related discipline, with extensive experience in automation, control systems and complex scientific or production environments.
2. Demonstrated authoritative expertise in mechatronics and advanced automation system design, including PLCs, microcontrollers, distributed control systems, motion control, process instrumentation and system integration across multi-platform environments.
3. Proven capability in leading the development, validation and lifecycle management of complex, high-risk or mission-critical automated systems, including architecture design, system governance, risk assessment and regulatory readiness.
4. Extensive experience planning and delivering major engineering or automation projects, including resource management, vendor engagement, cross-functional coordination and multi-stakeholder project governance.
5. Advanced ability to develop technical standards, procedures, validation frameworks and strategic documentation that influence organisational practice, compliance and operational excellence.
6. Deep understanding of WHS, radiation safety, environmental, quality and regulatory requirements relevant to radiochemistry and automated systems, including ISO 9001, ARPANSA and TGA frameworks.
7. Proven ability to build and sustain high value relationships with internal leaders, researchers, engineers, operations teams, vendors, government, regulators and national/international partners.
8. Demonstrated leadership in mentoring technical staff, developing organisational capability and fostering a culture of innovation, safety, quality and continuous improvement.
9. High level communication, negotiation and influencing skills, with the ability to shape strategic decisions, guide complex issue resolution and represent ANSTO's automation capability at national and international levels.

VERIFICATION

This section verifies that the line manager and appropriate senior manager/executive confirm that this is a true and accurate reflection of the position.

Line Manager		**Delegated Authority**	
Name:	Andrew Winthorpe	Name:	Ryan Middleton
Title:	Radioisotopes Manager	Title:	Co-Director, Health RTG
Signature:		Signature:	
Date:		Date:	

Band 6 to Band 7 Transition Checklist	
Name:	
Commencement Date:	
Assessment Date:	

Written submission demonstrating and justifying how the employee meets requirements must also be attached.

Requirements for transition	Met Criteria
a) Demonstrated experience working as Senior Automation Specialist (Band X) and b) Extensive equivalent experience	☐ Yes ☐ No OR ☐ Yes ☐ No
Degree or equivalent qualification/experience in Mechatronics, or a closely related discipline, with experience in automation or control systems.	☐ Yes ☐ No
Demonstrated knowledge and experience applying mechatronics and automation principles, including PLCs, microcontrollers, motion control, fluidic systems and process instrumentation.	☐ Yes ☐ No

Demonstrated ability to independently and responsibly perform Band 6 accountabilities and apply required knowledge, skills and experience for the Band 7 position including:

Requirements for transition	Met Criteria
Undertake Band 6 accountabilities at a technical expert level and independently without supervision or guidance	☐ Yes ☐ No
Experience in designing, developing, maintaining and troubleshooting mechanical or automated systems, with the ability to translate requirements into detailed engineering designs and validated solutions.	☐ Yes ☐ No
Experience in planning and delivering technical projects, preferably within a laboratory, production, regulated or complex scientific environment.	☐ Yes ☐ No
Experience preparing technical documentation, procedures, validation records and system instructions, and providing accurate project reporting to stakeholders.	☐ Yes ☐ No
Strong understanding of Work Health & Safety, radiation safety, environmental, quality and regulatory requirements relevant to radiochemistry or laboratory operations, including ISO 9001, ARPANSA and TGA expectations.	☐ Yes ☐ No
Proven ability to build and sustain high-value relationships with internal leaders, researchers, engineers, operations teams, vendors, government, regulators and national/international partners.	☐ Yes ☐ No
Demonstrated ability to work independently, show initiative, manage competing priorities and reliably deliver outcomes within required timeframes.	☐ Yes ☐ No
Strong interpersonal, communication and negotiation skills, with the ability to convey complex technical information and influence decisions across diverse stakeholder groups	☐ Yes ☐ No
Completed all role required training as per Health RTG Training Needs Analysis	☐ Yes ☐ No

Attach written submission demonstrating and justifying how the employee meets <u>each</u> of the above requirements.

Manager Recommendation

I have reviewed the employee's competence in accordance with Linked Role PD-2613 and certify that the employee meets all requirements for transition and recommend transition from Band 6 to Band 7 be endorsed as demonstrated in the attached written submission detailing how the employee meets each of the requirements.

Name & Title:			
Signature:		Date:	

Leader, Biosciences

I have reviewed all information and approve transition from Band 6 to Band 7.

Name & Title:			
Signature:		Date:	
Effective date of transition:			