Australian Government

ANSTO
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POSITION DESCRIPTION

Position Title:	Gamma Spectrometry Officer
Cluster / Business Unit / Division	Nuclear Science & Technology and Landmark Infrastructure – Research Infrastructure
Section or Unit:	Isotope Tracing in Natural Systems
Classification:	Band 5/6 (Linked)
Position Description Number:	PD-1743
Work Contract Type:	Science / Laboratory Management
STEMM/NON-STEMM:	STEMM

POSITION PURPOSE

The Gamma Spectrometry Officer operates and manages a low level gamma spectrometry facility. The position is responsible for several high purity germanium gamma ray spectrometers, complying with relevant quality standards and safety regulations and supporting research and operational objectives.

ORGANISATIONAL ENVIRONMENT

ANSTO is the national organisation for nuclear science and technology. We focus on undertaking leading edge research, delivering innovative scientific services and providing specialised advice to government, industry, academia and other research organisations.

Nuclear Science & Technology and Landmark Infrastructure (NSTLI) incorporates ANSTO's research, innovation, landmark research infrastructure and associated platforms and capabilities. NSTLI 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 Research Infrastructure portfolio comprises platforms established on scientific infrastructure and capabilities, with a number of the platforms categorised as landmark infrastructure. Research Infrastructure includes a portfolio of scientific assets, infrastructure, capability development & delivery for multi-decadal, multi-disciplinary, multi-user platforms for a collaborative user community and for internal research and development endeavours.

Isotope Tracing in Natural Systems (ITNS) is a Research Infrastructure platform that comprises three groups – Low Level Radioanalytical, Stable Isotope Analysis and Geochemical and Elemental Analysis; that operate specialist laboratories and instrumentation, providing expert analysis for high sensitivity measurements of radioisotopes, stable isotopes in environmental samples.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities – Band 5

- Manage the operation and maintenance of the low level gamma spectrometry instrumentation with minimal supervision.
- Prioritise, plan and schedule sample preparation and analysis to meet the specific needs of diverse clients, managing conflicting priorities and deadlines.
- Competent operation of the gamma spectrometer software to perform instrument calibrations, monitor detector performance and calculate reliable analytical results to meet quality assurance requirements.
- Apply basic gamma spectrometry theory and calculation of analytical results, uncertainties and minimum detectable limits, thus recognising issues with detectors and/or software and undertake necessary actions to ensure minimal down time.

- Liaise with gamma spectrometer manufacturers/service engineers to set up a new detector, resolve issues, organise repairs and replacement of old instruments.
- Prepare and maintain quality documentation to meet requirements, update, develop and revise laboratory instructions and standard operating procedures. Write clear and concise instructions and records.
- Prepare analytical reports in a timely manner to meet client needs and assist with their enquiries when required.
- Ensure accurate and timely records are made and maintained as required for regulatory and quality audit purposes, including sample analysis traceability, instrument maintenance and performance, and other records such as chemical and safety related registers.
- Ensure laboratory equipment and calibration sources are utilised in accordance with operational safety, security, sustainability requirements and adhere to applicable standards, legislative and regulatory guidelines.
- Provide regular updates to supervisor on progress of sample analysis, instrument performance, new ideas and challenges.
- Communicate well and demonstrate willingness to share information with team members, clients and collaborators to establish productive working relationships.
- Provide training and supervision to visiting researchers on gamma spectrometry analytical technique and sample preparations.
- Participate in gamma spectrometry proficiency tests, such as those organised by IAEA, to achieve results that will place ANSTO as one of the high ranking laboratories in low level gamma spectrometry measurements worldwide.
- Contribute to technical and procedural improvement activities.
- Contribute to the success of the ITNS group in meeting its strategic goals, by participating in meetings, sharing new ideas, completing administrative requests in a timely manner and other activities which may arise with limited notice.
- Ensure adequate stock of chemicals, consumables and spare parts are maintained.
- Undertake additional duties as required and during period of leave of other staff including radiochemical sample processing.

Key Accountabilities - Band 6

- Undertake all Band 5 accountabilities at a technical expert level, independently, without supervision or guidance.
- Competent at an expert level, to operate the gamma spectrometer software to perform more complex data processing such as performing coincident summing, self-absorption an sample matrix corrections.
- Liaise, collaborate and exchange information with gamma spectrometry experts, to continually improve the analytical technique and keep up to date with the latest technology in gamma spectrometry, which may involve initiating experimental development activities.
- Apply instrumental and software knowledge and expertise to diagnose and solve complex issues/problems and perform fault finding procedures to either rectify or recommend corrective action.
- Utilise specialist technical and scientific knowledge and expertise to participate in research collaboration with users, by contributing through provision of reliable and validated analytical results and interpretation. Make significant contributions to scientific publications and present results at scientific meetings/conferences.
- Provide advice on technical and capacity feasibility of the gamma spectrometry facility to analyse samples submitted through the user portal.
- Provide expert knowledge in evaluating equipment and facilities upgrades and modification to improve and extend operations to increase laboratory efficiency and to accommodate the needs of future projects and new research applications.
- Develop and expand knowledge of gamma-ray spectrometry measurement techniques, data analysis and applications.

- Facilitate new detector acquisitions and undertake necessary actions to complete the asset acquisition procedures, including providing justification for the purchase, determining the most suitable detector to purchase, liaising with the manufacturers, obtaining quotes, testing the detector to ensure they meet the manufacturer's specifications and complete the commissioning procedures.
- Promote ITNS gamma ray spectrometry and the low level radioactivity measurement facilities to external organisations, through provision of tours of the facilities to ANSTO visitors, collaboration with the Australian Institute of Nuclear Science and Engineering (AINSE) and attending workshops and conferences.

Decision Making

- The ANSTO values, organisational corporate plan, business plan, operational excellence program, the NSTLI strategy and ITNS objectives provide the context for the position.
- The position works within a framework of legislation, policies, professional standards and resource parameters. Within this framework the position has limited independence in determining how to achieve objectives of the sample environment work area.
- The position is fully accountable for the accuracy, integrity and quality of the content of advice and services provided to users and is required to ensure that activities and equipment are complaint with regulatory and safety requirements at all times.
- 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).

Key Challenges

- Meeting needs of multiple stakeholders and adjusting work plans and processes, to meet user expectations.
- Managing conflicting priorities and deadlines with short notice.
- Developing new methods and research in the relevant field. Keeping abreast of recent developments in field, ensuring continual improvement and implementation of best practice.
- Progressively gaining a reputation in field of technical development work, presenting results and publishing outcomes.
- Ensuring compliance with changes to regulatory requirements

KEY RELATIONSHIPS

Who	Purpose
Internal	
Line Manager	• Receive direction and guidance • Provide authoritative and evidence based advice • Recommend and gain endorsement for improvement or development plans and goals and other initiatives
Work area team members	• Contribute to group discussions, decision making processes and planning • Collaborate and share accountability • Negotiate and resolve scheduling or lab access conflicts
ANSTO Users (scientists, researchers, post-docs) Other NSTLI staff accessing laboratories & facilities	• Co-ordinate laboratory availability and usage • Develop sample processing strategies • Assess competence to undertake activities within laboratory/s • Understand user requirements and desired outcomes • Provide expert advice, analysis and training • Liaise and network with other gamma spectrometer users, within ANSTO to share knowledge and innovative ideas, exchange

	intelligence and discuss new developments in gamma spectrometry • Maximise the user experience
External	
Users (scientists, researches, post-docs, students)	• Co-ordinate laboratory availability and usage • Develop sample processing strategies • Assess competence to undertake activities within laboratory/s • Understand user requirements and desired outcomes • Provide expert advice, analysis and training • Maximise the user experience
External Professional Network	• Liaise and network with other gamma spectrometer users, nationally and internationally, to share knowledge and innovative ideas, exchange intelligence and discuss new developments in gamma spectrometry
Suppliers	• Purchase laboratory consumables, chemicals and equipment, negotiate prices for equipment and repairs. • Liaise with instrument supplier to trouble shoot and identify faults and arrange repairs

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Capability Area Manager
Direct Reports	Nil
Indirect Reports	Provide technical supervision to contractors, junior staff and facility users.

Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed
Travel:	May be required to travel to ANSTO sites within Australia occasionally Infrequent travel both internationally and nationally May be required to undertake field work in remote locations from time to time
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Laboratory facility physical requirements (lifting, standing for long periods, operating machinery, equipment and in some roles manipulators) If required by specific role - wearing personal protective equipment for the handling of hazardous and/or radioactive materials
Radiation areas:	If required by specific role - perform duties in an area where radioactive materials are handled under tightly controlled safety conditions Perform duties with and in an area where hazardous chemicals or materials are handled under tightly controlled safety conditions
Hours:	Willingness to work extended and varied hours based on operational requirements After hours work may be required for short and infrequent periods
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements Maybe required to obtain and maintain appropriate federal government clearance

Workplace Health & Safety	
Specific role/s as specified in AG-2362 of the ANSTO WHS Management System	All Workers May be required to undertake one or more of the specified roles within the context and course of their duties: building warden; contractor supervisor; facility officer; area supervisor 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

Band 5

1. Degree in relevant field of science (Physics, Chemistry) or demonstrated equivalent experience (e.g. TAFE tertiary qualification and experience in scientific field).
2. Practical analytical laboratory experience, processing/reporting of analytical data, operating and maintenance of instrumentation.
3. Practical knowledge and experience in analytical data calculations including uncertainties and minimum detectable limit determinations.
4. Experience in operating scientific software for data acquisition and data processing.
5. Experience in managing analytical laboratory activities, independently, with minimal supervision.
6. Experience in preparing and maintaining quality documentation and analytical records.
7. Demonstrated ability to follow policy, procedures and guidelines.
8. Experience in operating within laboratory quality and safety requirements (radiation safety, ARPANSA regulations and quality systems).
9. Strong interpersonal and communication skills including technical writing skills, with the ability to interact and communicate with a varied and multidiscipline audience, develop and maintain productive working relationships and train and supervise others in the use and application of relevant analytical technique.

Band 6

1. Knowledge, skills and experience for Band 5.
2. Proven experience in managing single or multiple laboratory operations in a user based research environment, independently, without any supervision.
3. Experience in initiating and undertaking analytical development and validation as required to meet clients/collaborators requirements.
4. Experience with diagnosis and facilitation of repair of analytical instrumentation.
5. Experience in providing experimental support and data interpretation to research scientists.
6. Experience in commissioning and maintaining scientific instrumentation.
7. Experience in using analytical software packages to undertake complicated analytical data processing.
8. Technical skills including computer programming for analytical data collations and calculations.
9. Experience in writing and understanding mathematical algorithms/codes to process analytical data.
10. Experience in presenting experimental/research outcomes at conferences.

Linked Role Transition

Transition to the higher band within the linked role is not automatic and ability to perform Band 6 accountabilities will need to be demonstrated and assessed. This can be done by completing the attached

form and completing a full written submission demonstrating and justifying how an employee meets the transition requirements

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:	Atun Zawadzki	Name:	Jennifer Harrison
Title:	Capability Area Manager	Title:	Leader, Isotope Tracing in Natural Systems
Signature:		Signature:	
Date:		Date:	

ITNS Gamma Spectrometry Officer (PD-1743) Band 5 to Band 6 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) Minimum 5 years working as Gamma Spectrometry Officer (Band 5) OR b) Minimum 5 years equivalent experience	☐ Yes ☐ No OR ☐ Yes ☐ No
Degree in Physics, Chemistry or equivalent	☐ Yes ☐ No
Extensive experience in laboratory management and demonstrate meeting all below requirements	☐ Yes ☐ No

Demonstrated ability to independently and responsibly perform band 5 accountabilities and apply required knowledge, skills and experience for the band 5 position including:	
Undertake band 5 accountabilities at a technical expert level and independently without supervision or guidance	☐ Yes ☐ No
Ability to operate the gamma spectrometer software to perform more complex data processing such as performing coincident summing, self-absorption and sample matrix corrections.	☐ Yes ☐ No
Liaise, collaborate and exchange information with gamma spectrometry experts, to improve the analytical technique and keep up to date with the latest technology in gamma spectrometry; initiate experimental development activities.	☐ Yes ☐ No
Apply instrumental and software knowledge and expertise to diagnose and solve complex issues/problems and perform fault finding procedures to either rectify or recommend corrective action.	☐ Yes ☐ No
Utilise specialist technical and scientific knowledge and expertise to participate in research collaboration with users, by contributing through provision of reliable and validated analytical results and interpretation. Make significant contributions to scientific publications, present results at scientific meetings/conferences.	☐ Yes ☐ No
Provide advice on technical and capacity feasibility of the gamma spectrometry facility to analyse samples submitted through the user portal.	
Provide expert knowledge in evaluating equipment and facilities upgrades and modification to improve and extend operations to increase laboratory efficiency and to accommodate the needs of future projects and new research applications.	☐ Yes ☐ No
Develop and expand knowledge of gamma-ray spectrometry measurement techniques, data analysis and applications.	☐ Yes ☐ No
Facilitate new detector acquisitions and undertake necessary actions to complete the asset acquisition procedures, including providing justification for the purchase, determining the most suitable detector to purchase, liaising with the manufacturers, obtaining quotes, testing the detector to ensure they meet the manufacturers specifications and complete the commissioning procedures.	☐ Yes ☐ No
Promote ITNS gamma ray spectrometry and the low level radioactivity measurement facilities to external organisations, through provision of tours of the facilities to ANSTO visitors, collaboration with the Australian Institute of Nuclear Science and Engineering (AINSE) and attending workshops and conferences.	☐ Yes ☐ No

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

ITNS LLRA Group Manager Recommendation

I have reviewed the employee's competence in accordance with Linked Role PD-1743 and certify that the employee meets all requirements for transition and recommend transition from Band 5 to Band 6 be endorsed as demonstrated in the attached written submission detailing how the employee meets each of the requirements.

Name & Title:			
Signature:		Date:	

ITNS Platform Manager

I have assessed the submission and confirm that the employee meets all requirements for transition from Band 5 to Band 6.

Name & Title:			
Signature:		Date:	

NSTLI Research Infrastructure Leader

I have reviewed all information and approve transition from Band 5 to Band 6.

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