

POSITION DESCRIPTION

Position Title:	Professional Officer – Powder Processing
Cluster / Business Unit / Division	Nuclear Science and Technology
Section or Unit:	NST-NMRTG
Classification:	Band 5/6 (Linked)
Job Family:	Research
Position Description Number:	PD-2668
Work Contract Type:	Professional
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Research & Sciences

POSITION PURPOSE

The primary objective of the Professional Officer – Powder Processing is to provide technical expertise for powder and thermal processing of both surrogate (inactive) and active materials for demonstrating ANSTO's Synroc technology at both laboratory and larger engineering scale.

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) integrates ANSTO's research, innovation, landmark research infrastructure and associated platforms and 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 Nuclear Materials Research and Technology Group (NM-RTG) is a leading centre for nuclear materials expertise in Australia. It incorporates a multidisciplinary team of scientists, technical specialists and engineers, supporting the design, development and performance of materials and technologies that span the nuclear fission energy life cycle. The NM-RTG Facilities and Capabilities Group are the custodians of a unique combination of research infrastructure, underpinned by relevant expertise, to enable synthesis, manufacture, handling, characterisation and modelling of nuclear fuels, structural materials and wasteforms. To this end, the NM-RTG Facilities and Capabilities Group provide an integrated multidisciplinary technical support to ANSTO operations, academia and industry across a variety of research and engineering sectors, both within Australia and in collaboration with international stakeholders.

ANSTO Synroc is in the Nuclear Materials Research and Technology Group and has been given the challenge of developing markets for ANSTO's wasteform science and processing technology and to develop tailored solutions for nuclear waste streams including the advancement of process technology and materials performance requirements that support engineering designs for waste processing plants and equipment within ANSTO and for external clients.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities- Band 5

- Maintain knowledge and understanding of materials processing and characterisation (focussed on powder processing) to support the development of new capabilities for materials processing and characterisation.
- Under supervision produce waste simulants, wasteform precursors (powders and liquids), and processing additives to support process demonstration at scale.
- Under supervision, operate high-temperature processing equipment to densify materials into solid samples for product evaluation and support the Hot Isostatic Pressing capability at ANSTO.
- Support characterisation (particle sizing, densitometry, porosimetry, and thermal analysis) of input materials, process intermediates, and plant products, including uncertainty quantification to support acceptance/release decisions.
- Under supervision, operate, maintain and manage processing equipment to ensure availability to support the delivery of projects.
- Perform the role of the Area Supervisor or Deputy Area Supervisor for ANSTO Synroc processing facilities and laboratories. Ensure the designated area is maintained safe and functional, risk assessments and operating procedures are regularly reviewed and updated, and that quality assurance standards are met.
- Ensure all work is accurately documented and meets the requirements of the ANSTO Synroc Quality Management System.
- Support the maintenance of key processing equipment within the ANSTO Synroc Demonstration Plant, laboratories, and active materials handling facilities to ensure statutory and regulatory requirements are satisfied and that equipment is available to operate when required.
- Contribute to continuous improvement to documentation, processes, and support capability development through, identifying alternatives, applying lessons learned, and implementing changes that enhance safety, quality, reliability, and efficiency.
- Work in a highly collaborative manner within multidisciplinary teams to deliver agreed work plans and schedules that meet client, project, and operational needs.
- Undertake additional duties as required to support team capability, workload demands, and continuity during periods of staff absence.

In addition to performing all lower Band 5 accountabilities, the higher Band 6 role includes these additional accountabilities

- Apply in-depth knowledge and understanding of materials processing and characterisation (focussed on powder processing) for the development of new materials processing and characterisation capabilities.
- Lead the production of waste simulants, wasteform precursors (powders and liquids), and processing additives to support process demonstration at scale.
- Lead characterisation (particle sizing, densitometry, porosimetry, and thermal analysis) of input materials, process intermediates, and plant products, including uncertainty quantification to support acceptance/release decisions.
- Independently operate high-temperature processing equipment to densify materials into solid samples for product evaluation and support the Hot Isostatic Pressing capability at ANSTO.
- Lead the implementation of active materials handling capabilities for ANSTO Synroc.
- Lead and deliver specific tasks aligned with client and stakeholder requirements.

- Be responsible for establishing and maintaining asset maintenance plans, standard operating procedures, work instructions, risk assessments, and data-integrity controls for process equipment and laboratories as part of the quality management system.
- Lead continuous improvement to documentation, processes, and support capability development through, identifying alternatives, applying lessons learned, and implementing changes that enhance safety, quality, reliability, and efficiency.
- Develop comprehensive reports detailing work in alignment with ANSTO Synroc Quality Management System requirements.
- Interface with stakeholders to provide technical input, feedback, and guidance on characterisation activities and work packages
- Exercise expert judgement to prioritise tasks, resources, and workflows across concurrent projects, ensuring delivery to agreed milestones and timelines.

Decision Making

- The ANSTO values, organisational corporate plan, business plan, operational excellence program, the NST strategy including ANSTO Synroc's strategy and plans 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 some independence in determining how to achieve assigned objectives however will be constrained by the project deliverables and timeframes.
- The position is fully accountable for the accuracy, integrity, and quality of the content of advice provided to the Technical Director or one of his delegates and is required to make effective decisions are based on sound evidence.
- Determine key work priorities within the context of agreed work plans and project plans and consult with the line manager on complex, sensitive and major issues that have a significant impact on the project.
- The levels of authority delegated to this position are those approved in accordance with the project management structure 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

- Carry out work in accordance with project delivery schedule while working across numerous projects with varying deadlines.
- Liaising with internal and external stakeholders to ensure that open communication is kept and that all remain aware of their obligations.
- Utilise significant judgement and technical experience to undertake technically challenging development which requires constant learning and keeping abreast of technological and statutory changes in nuclear materials handling and process technologies.
- Undertaking activities in a heavily regulated environment and always comply with regulatory & safety requirements, codes, standards, and specifications.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Manager/Leader	• Receive guidance and direction • Provide expert, authoritative and evidence-based advice, and recommendations

	• Recommend improvement initiatives • Provide regular updates on key tasks, issues & priorities • Negotiate and report on progress of project outcomes consistent with project plans and goals • Recommend and gain endorsement for project activities and other initiatives • Escalate issues and propose solutions
Project team members	• Band 5 Support facilities management and team members, work collaboratively to contribute to achieving project outcomes • Band 6 Responsible for facilities and equipment operations and maintenance whilst leading the delivery of specific work packages as defined by the project. • Provide expert advice and analysis on a full range of matters • Contribute to group decision making processes, planning and goals • Collaborate and share accountability • Identify, negotiate and resolve technical conflicts
Engineers (Synroc/NMRTG)	• Liaise with Engineers to implement process, safety, and quality improvements to the Hot Isostatic Pressing capability.
Other departments	• Report on technical development and/or outcomes • Consult regarding results and stakeholder requirements • Provide advice and recommendations

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Manager Synroc Engineering
Direct Reports	Nil
Indirect Reports	Nil
Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time Travel both internationally and nationally
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Public speaking Industrial facility physical requirements (lifting, standing for long periods, operating machinery, equipment and manipulators) Wearing personal protective equipment for the handling of hazardous and/or radioactive materials
Radiation areas:	Shall be required to work in radiation areas under tightly regulated conditions 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
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements

Linked Role:	The Transition from Band 5 to Band 6 is not automatic and requires a full written submission, in addition to the attached checklist, to demonstrate how the employee meets the requirements. Transition will only occur following approvals from the Technical Director ANSTO Synroc and Director, Nuclear Materials Research and Technology Group.
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Workplace Health & Safety	
Specific role/s as specified in <u>AG-2362</u> 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: • Area Supervisor • Building Warden • Contractor Supervisor • Designated First Aid Officer <u>Health and Safety Committee Member</u>

ORGANISATIONAL CHART

Refer to published Organisational Chart.

KNOWLEDGE, SKILLS AND EXPERIENCE

Band 5		Band 6
1.	Degree or higher in Physics, Chemistry, Materials Science, Process Engineering or related discipline	Same as Band 5
2.	Demonstrated knowledge of powder and thermal processing of materials	Demonstrated experience in powder and thermal processing of materials
3.	Demonstrated experience in materials handling and processing	Demonstrated experience in processing (including critical analysis of processing steps) and handling powders for research, scale up, and technology translation/maturation.
4.	Knowledge of active materials handling and processing.	Demonstrated experience handling and processing of active materials.
5.	Knowledge and experience of materials characterisation.	Demonstrated experience in materials characterisation.
6.	Demonstrated ability to maintain records and contribute to technical or commercial reports.	Demonstrated ability to maintain records and develop technical or commercial reports.
7.	Understanding of the implementation and interpretation of standards and client specifications.	Capable of interpreting and applying engineering design codes, standards, and regulations, including client nominated specifications and standards.
8.	Knowledge of maintenance, statutory, and licencing requirements for plant.	Demonstrated experience in managing maintenance, statutory, and licencing requirements for plant.
9.	Demonstrated ability to work under guidance show initiative, able to work independently and be deadline driven and reliable in following through with actions.	Demonstrated ability to independently prioritise projects and tasks to optimise allocation of resources.
10.	Demonstrated ability to follow and adhere to procedures to ensure safety, quality, and client objectives are achieved.	Demonstrated ability to continuously improve and develop procedures to ensure safety, quality, and client requirements are achieved.
11.	Excellent interpersonal and communication skills (both written and verbal).	Demonstrated ability to effectively communicate with a broad range of stakeholders including technical, professional, and management.
12.	Demonstrated ability to work with others.	Ability to develop and maintain productive working relationships across a broad range of internal and external stakeholders.

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:	Rohan Holmes	Name:	Prof Michael Moody
Title:	Manager, Synroc Engineering	Title:	Director of Nuclear Materials Research and Technology Group
Signature:		Signature:	
Date:		Date:	


Professional Officer – Powder Processing (PD-2668)
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) Demonstrated experience working as Professional Officer – Powder Processing (Band 5)	☐ Yes ☐ No
OR	
b) Demonstrated equivalent experience	☐ Yes ☐ No
Demonstrated capability to independently manage specific tasks within projects to successful completion.	☐ Yes ☐ No

Demonstrated ability to independently and responsibly perform Band 5 accountabilities and apply required knowledge, skills and experience for the Band 6 position including:	
Undertake Band 5 accountabilities independently with little or no direct supervision.	☐ Yes ☐ No
Independently manage specific tasks or projects to deliver outcomes in accordance with client requirements.	☐ Yes ☐ No
Utilise judgement to independently assess priorities of tasks to optimise project outcomes.	☐ Yes ☐ No
Lead and manage the operations and maintenance of key equipment including manage, any safety and compliance requirements for process plant.	☐ Yes ☐ No
Providing feedback and contribute to the process of continual improvement in safety, quality, and reliability, to meet project or client objectives.	☐ Yes ☐ No
Training and transfer of knowledge to other research, engineering, and technical staff.	☐ Yes ☐ No

Attach written submission demonstrating and justifying how the employee meets each of the requirements.

Manager Recommendation

I have reviewed the employee's competence in accordance with Linked Role PD-2668 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:	

Technical Director, ANSTO Synroc

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:	

Director of Research NMRTG

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

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