Australian Government

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POSITION DESCRIPTION

Position Title:	Instrumentation and Control Engineer
Cluster / Business Unit / Division	NSTLI -ANSTO Synroc
Section or Unit:	Engineering and Technology Development
Classification:	Band 5/6 Linked
Position Description Number:	PD-2078
Work Contract Type:	Professional
STEMM/NON-STEMM:	STEMM

POSITION PURPOSE

The primary objective of the I&C Engineer is to provide technical input into specific engineering packages and ensure engineering and process systems are designed and validated from concept through to deployment. This role shall provide technical input into the design and engineering of scaled-up process technologies for ANSTO Synroc, be involved in the design of specific nuclearised equipment and processes for the team's technology development and provide engineering support to ANSTO Synroc Facilities.

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) integrates 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.

NSTLI's Research Portfolio undertakes world class applied and translational research utilising nuclear techniques to foster innovation in research and development programs to enhance ANSTO's contribution to supporting a sustainable and healthier future for our planet and people everywhere. The Research Portfolio consists of research themes that define the broad subject areas of research with underlying research programs that are focussed activity groupings that contribute to the overall objectives of the research theme and also conducting research sub-programs within platforms. The Research Themes are Environment, Human Health, Nuclear Fuel Cycle and Synroc.

Synroc has been given the challenge of developing markets for ANSTO's wasteform science and processing technology and develop tailored solutions for nuclear waste stream including advancement of engineering designs and solutions for waste processing plants and equipment within ANSTO and for external clients

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities- Band 5

- Assist in the design and development of nuclear and non-nuclear electrical, control, and instrumentation engineering problems by applying relevant expertise and professional skills under the supervision of a more senior team member.
- Participate in the complete engineering process from concept development through to realised manufacture, assembly and commissioning to provide solutions that are fit for purpose, cost effective, practical and that meet project requirements.

- Work closely with the technical lead to deliver design packages and ensure changes or discrepancies are addressed. Support the prototype development and deployment of process instrumentation for large scale engineered systems including their maintenance and repair as part of the asset management plan.
- Verify the application of sound engineering methods meeting design codes and standards for detailed engineering documentation for process systems and verify engineering designs are safe to construct, commission, operate, maintain and decommission.
- Ensure engineering and process systems are accurately documented and appropriate for the QA standards of the project and clients. Develop design documentation including reports, datasheets and specifications and review supplier documentation.
- Interface with internal stakeholders as part of a team and provide feedback on other systems being designed by others within a project or work group. Collaborate with other disciplines and develop an understanding of the work and execution sequences needed in successful multi-disciplinary design and delivery.
- Work as part of a team delivering technology solutions to meet the requirements of the client
- Undertake additional duties as required and during period of leave of other staff.

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

- Develop existing and new concepts from conceptual through to detailed engineering that will allow ANSTO Synroc to demonstrate the feasibility of its process technology to deliver a final product which meets a performance requirement determined by the client;
- Lead technical input into instrumentation and control engineering for simple plant or sections within more complex plant, in conformance with ANSTO Synroc or approved project guidelines and procedures;
- Lead the technical review of design and specification of equipment, instruments and control system;
- Develop and coordinate evaluation test plans for I&C packages and provide instruction and feedback to the project process engineering team;
- Utilise demonstrated knowledge to address any changes or discrepancies during the installation phase of the project to ensure the technical adequacy of the design package/s developed;
- Utilise demonstrated knowledge and judgement to independently assess priorities of project tasks and job flow to deliver projects to an agreed timeline
- Provide leadership in technical and engineering collaborations or partnerships with other engineering disciplines. Develop and understand engineering disciplines to provide a total integrated solution. Implement plans needed to ensure successful multi-disciplinary design and delivery of projects;
- Lead and integrate continuous improvement methodologies through considering alternative design concepts, constructability, operability and maintainability factors, and the application of Lessons Learnt, and strive to deliver improvements;
- Represent ANSTO nationally or internationally, building networks to develop linkages with nuclear industry.

Decision Making

- The ANSTO values, organisational corporate plan, business plan, operational excellence program, the NSTLI strategy and Synroc Technologies defined 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 and is required to ensure 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.
- 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
- The development of new designs and methodologies for nuclear applications that need to be operable, reliable and maintainable.
- Utilise significant judgement and technical experience to undertake technically challenging development and design which requires constant learning and keeping abreast of technological and statutory changes in mechanical design.
- Undertaking activities in a heavily regulated environment and comply at all times with regulatory & safety requirements, codes, standards and specifications.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Manager/Executive	• Receive guidance and direction • Provide expert, authoritative and evidence based advice and recommendations • 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 team members and work collaboratively to contribute to achieving project outcomes • Band 6 - lead the delivery of specific work package 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
Other departments	• Report on technical development and outcomes • Consult regarding results and stakeholder requirements • Provide advice and recommendations

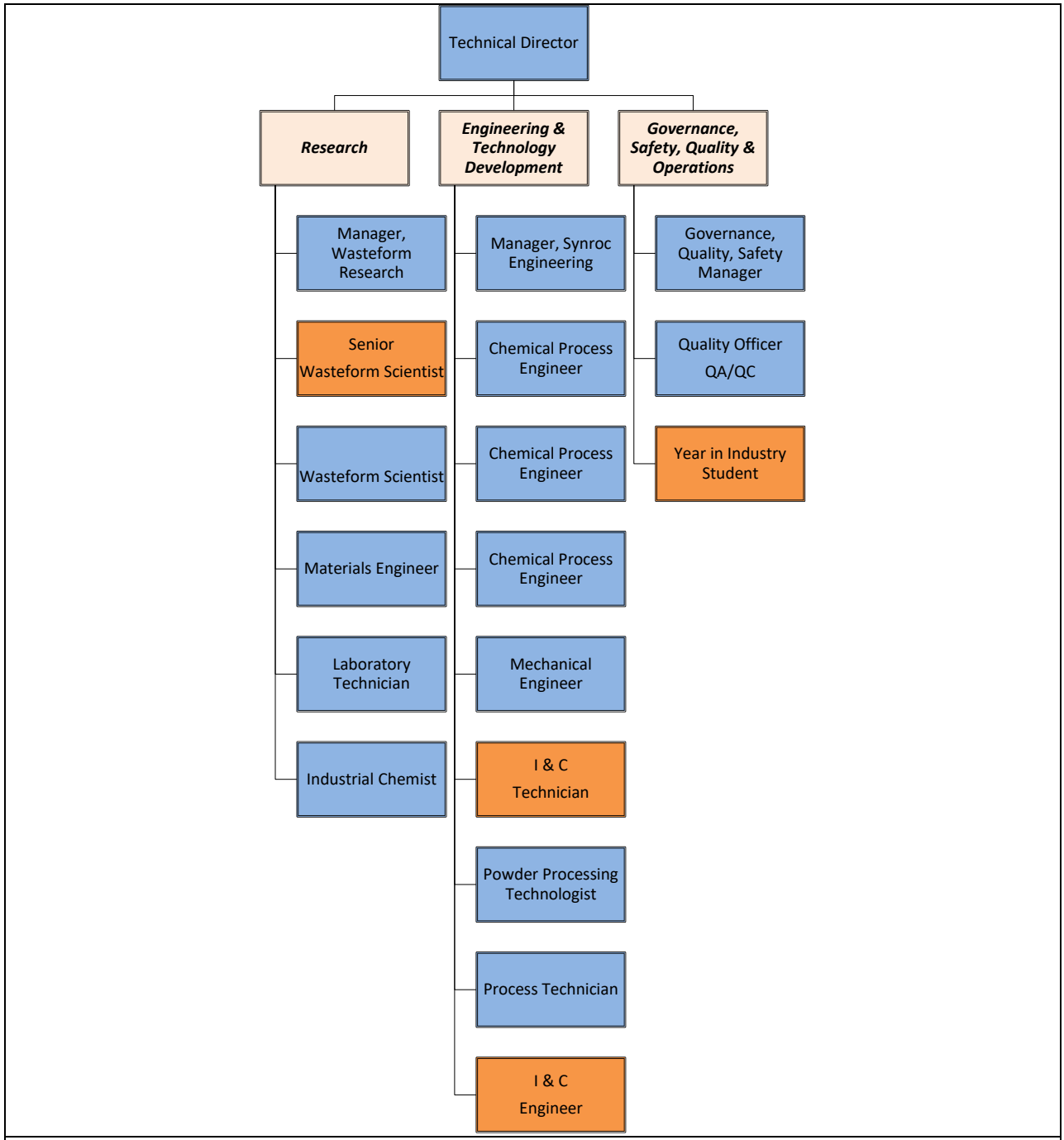
POSITION DIMENSIONS

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 Frequent 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:	May 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 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 Officer (definitions found in appendix 1 of AG-2362) Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

ORGANISATIONAL CHART



Synroc Technologies Org Chart

KNOWLEDGE, SKILLS AND EXPERIENCE

Band 5	Band 6
1. Degree or higher in Electrical Engineering, Mechatronics Engineering, or equivalent discipline	Same as Band 5
2. Demonstrated experience working within teams as part of research and engineering development. This includes design, development, and implementation of instrumentation and control for industrial applications.	Demonstrated experience leading design packages as part of research and engineering development. This includes design, development, and implementation of instrumentation and control for industrial applications
3. Demonstrated experience participating in prototype development, validation and the development of testing procedures ensuring the design meets client specifications and needs.	Demonstrated experience leading prototype development, validation and the development of testing procedures ensuring the design meets client specifications and needs.
4. Demonstrated ability to develop software for the control of individual simple unit operations.	Demonstrated ability to develop software that allows for the integration of multiple unit operations into automated functional equipment.
5. Demonstrated ability to produce detailed engineering and technical documents including calculation reports, descriptive reports and standard technical drawings	Same as Band 5
6. Demonstrated ability to show initiative and to support work to meet deadlines and reliably follow through with actions	Demonstrated ability to independently prioritise projects and tasks to optimise allocation of resources
7. Ability to develop and maintain productive working relationships across a broad range of internal and external stakeholders	Same as Band 5
8. Personal qualities that add value to a team operating in a high level client delivery, safety & quality environment	Same as Band 5
9. Excellent interpersonal and communication skills, both written and verbal	Same as Band 5
10.	Extensive demonstrated experience working within the electrical and or mechatronics engineering field
11. Demonstrated experience interpreting local and international Engineering Design Codes and Regulations, and Customer specified Standards/specifications and methodologies	Demonstrated experience implementing and applying local and international Engineering Design Codes and Regulations, and Customer specified Standards/specifications and methodologies.
12.	Work as part of a multidisciplinary engineering team for the development of solutions that meet ANSTO Synroc project requirements.

LINKED ROLE TRANSITION REQUIREMENTS

- Extensive experience in Chemical Process Engineering (Band 5) or equivalent experience
- Demonstrated capability to independently manage engineering projects to successful completion
- Demonstrated ability to independently and responsibly perform Band 6 accountabilities and apply required knowledge, skills and experience for the Band 6 position including:
  - Undertake Band 6 accountabilities independently with little or no direct supervision
  - Apply extensive engineering knowledge and experience to troubleshoot, investigate and resolve complex systems and problems (relevant to discipline) with little or no supervision or guidance.
  - Independently manage large and complex engineering tasks within projects.
  - Utilise judgement to independently assess priorities of projects and tasks to optimise the allocation of resources.
  - Providing feedback and contribute to the process of continual improvement in safety, reliability and efficiency and individual knowledge and competency.

Transition from Band 5 to Band 6 will occur following a recommendation from the relevant line manager, assessment by management and approval from Technical Director, ANSTO Synroc

Transition within the linked role is not automatic and ability to perform Band 6 accountabilities will need to be demonstrated and assessed. This is to be done by completing the attached form and completing a full written submission demonstrating and justifying how the employee meets the transition requirements noted above.

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:	Gerry Triani	Name:	Suzanne Hollins
Title:	Technical Director, ANSTO Synroc	Title:	Head of Research NSTLI
Signature:		Signature:	
Date:		Date:	

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Instrument and Control Engineer (PD-XXXX) Position transition requirements

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 Chemical Process Engineer (Band 5) OR b) Minimum 5 years equivalent experience	☐ Yes ☐ No OR ☐ Yes ☐ No
Demonstrated capability to independently manage engineering 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 large and complex engineering projects	☐ Yes ☐ No
Utilise judgement to independently assess priorities of projects and tasks to optimise the allocation of resources	☐ Yes ☐ No
Lead and coordinate a project team of engineers and technical staff to achieve outcomes	☐ Yes ☐ No
Providing feedback and contributing to the process of continual improvement in safety, reliability and efficiency and individual knowledge and competency	☐ Yes ☐ No
Training and transfer of knowledge to other engineering and technical staff	☐ Yes ☐ No

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

Manager Recommendation

I have reviewed the employee's competence in accordance with Linked Role PD-XXXX 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, Synroc Technologies

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:	

Head of Research, NSTLI

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

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