



POSITION DESCRIPTION

Position Title:	Principal Controls Engineer
Cluster / Business Unit / Division	Clayton Campus
Section or Unit:	Controls & Scientific Computing
Classification:	Band 7
Job Family:	Engineering and Technical
Position Description Number:	PD-1854
Work Contract Type:	Technical
STEMM/NON-STEMM:	STEMM

POSITION PURPOSE

The Principal Controls Engineer is responsible for providing technical leadership, subject matter expertise and consultancy services to internal stakeholders, team members and management across the facility. The area of specialist expertise may be associated with a particular skill, technical area or knowledge required in the delivery of engineering projects or initiatives. The Principal Engineer may be responsible for the ongoing development and support of a technical system or sub system in which case they will assume facility wide technical accountability of the system.

The particular area of technical expertise of the Principal Engineer will generally be considered unique in the context of general industry and ANSTO.

ORGANISATIONAL ENVIRONMENT

ANSTO leverages great science to deliver big outcomes. We partner with scientists and engineers and apply new technologies to provide real-world benefits. Our work improves human health, saves lives, builds our industries and protects the environment. ANSTO is the home of Australia's most significant landmark and national infrastructure for research. Thousands of scientists from industry and academia benefit from gaining access to state-of-the-art instruments every year.

The Controls and Scientific Computing team is responsible for enabling world-class synchrotron tools to support the Australian Synchrotron in achieving its objectives. High performance solutions come through the effective interaction of Controls and Computing with the Synchrotron's Engineering and Science teams. Controls and Computing ensures it is world-class by collaborating with peers in large science facilities nationally and internationally. Controls and Computing develops standards and specifications and engages external suppliers to provide optimal solutions. Where an appropriate solution cannot be sourced, the team designs solutions in-house.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Providing subject matter expertise, focus and leadership for a specialist skill, technology or knowledge base unique to industry required across the facility, to support the development and ongoing operation particle accelerators and beamlines.
- Technical system ownership and responsibility encompassing long term strategy development, asset management, lifecycle planning and budget planning. Providing expert technical advice to users of the system and creating technical concepts in the interest of developing new technology or functionality
- Employing engineering best practice, selecting technology solutions and ensuring standard solutions are implemented across the facility, including responsibility for documentation of the options considered, selection criteria and assessment against criteria.

- Develop and maintain mutually beneficial collaborative relationships with subject matter experts, peers in industry and other synchrotron facilities in the interest of keeping informed of latest advancements and industry trends, applying this knowledge to improve the facility, transferring knowledge and ensuring the AS remains competitive internationally.
- Ensure the technical safety of a technical system for which the Principal is responsible for. Responsibilities may include verification by calculation, adherence to Australian Standards and other legal/regulatory requirements, developing safe work procedures, education and training of staff and appropriate record keeping.
- Carry out advanced engineering analysis more akin to a purely scientific role in the interest of solving advanced technical challenges often involving knowledge of X rays, magnetics, precision mechanics and advanced metrology techniques.
- Develop, maintain and deliver conceptualize advanced engineering solutions, detailed design of scientific instrumentation to be used in a radiation environment and to take the concept through to delivery encompassing analysis, design, hands on build, commissioning, testing and implementation.
- Project management including planning, delegation and execution of large scale projects with multi-disciplined engineering aspects to ensure timely delivery
- Mentoring and coaching of junior members of the team and in the context of a facility wide initiatives in the interest of contributing to their professional and technical skills development.

Decision Making

This role makes decisions related to:

- Priorities on assigned projects and tasks e.g. technical design direction, implementation and testing strategies.
- Daily delivery of knowledge specific to their area of expertise.
- Prioritisation of project and non-project (operational) tasks
- Policy, process and procedure decisions within the area of expertise.
- Technical system responsibilities or subject matter expertise which will have impact at the facility wide level and be a major influence in technical aspects of the facility into the future.
- Definition of roles and responsibilities for safety aspects of their technical system. Including levels of authorization for work with safety implications.
- Identification of future developments, conceptual designs and projects in the interest of advancing the reliability of systems they are accountable for.
- Decisions on corrective actions to deal with incidents that have caused disruption to operations
- Influencing the decisions of senior managers e.g. resourcing of projects and solutions to problems
- 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

- Ensuring the successful implementation of strategic objectives and project completion whilst managing conflicting priorities and deadlines;
- Keeping abreast of recent developments in field, ensuring continual improvement and implementation of best practise.
- Improving customer service, response times and delivery efficiencies;
- Make complex engineering decisions based on many factors including fit for purpose, low total cost of ownership, suitability of collaborators and collaboration agreements, the skillset of team members and standardisation,
- Maintain effective relations and communication with clients, vendors, team members, engineers in other teams, and collaborators
- Ability to communicate across engineering and scientific disciplines. Interpret scientific requirements and translate them to an electronic system specification. Develop, apply and maintain standard solutions

- Provide solutions in a timely manner. Deployment of solutions is done during shutdown maintenance windows. Planning of work and your availability during these windows is essential.

Who	Purpose
Internal	
Manager	<ul style="list-style-type: none"> • Regularly, or as required to discuss 'beyond the norm' needs to complete a project or task, priorities where higher level input is required and to provide advice on technical feasibility/practicality on challenges relevant to their areas of responsibility
Members of the team and other engineering groups	<ul style="list-style-type: none"> • As required to provide expert technical advice and guidance depending on the scope of work carried out
Beamline scientists	<ul style="list-style-type: none"> • Weekly or as often as required to provide expert technical advice; discuss projects brought to Engineering and keep them informed on project progress, challenges, and request clarification of performance requirements and to identify possible solutions; communicate perceived technical problems on a Beamline before they happen; provide suggestions, solutions and troubleshoot as required
Department Heads	<ul style="list-style-type: none"> • Every 2-3 months to provide expert advice on technical issues which may affect planning and budgets
External	
Experts/colleagues at other facilities	<ul style="list-style-type: none"> • As required depending on requirements to maintain knowledge of technical developments at other facilities which may be relevant and transferrable. Seek and provide advice as required
Specialist contractors/suppliers	<ul style="list-style-type: none"> • Monthly, or as required to seek specialist services to advice or to purchase specialist equipment

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Manager, (discipline)
Direct Reports	No direct reports
Indirect Reports	The Principal Controls Engineer may be assigned a delivery / project team or an individual to deliver a scope of work and will be required to monitor progress, quality of work and take ultimate responsibility for the outcomes. Leadership responsibilities also extends to management and responsibility for contractors, interns, work experience students and their work

Special / Physical Requirements

Location:	Clayton Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time

Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Labour intensive physical requirements (sitting, standing, frequent manual handling) Standing for long periods Frequent movements (climbing, stooping, kneeling, crouching, crawling) Working in a loud environment 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 Working in confined space environment including wearing respiratory equipment
Radiation areas:	May be required to work in radiation areas under tightly regulated 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

Workplace Health & Safety

Specific role/s as specified in <u>AP-2362</u> of the ANSTO WHS Management System	All Workers
	Officer (definitions found in appendix A of AP-2362) Group Executive / General Manager Managers / Leaders / Supervisors Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

ORGANISATIONAL CHART

Refer to the org chart

KNOWLEDGE, SKILLS AND EXPERIENCE

Essential

- A Degree level or higher qualification in an Engineering discipline
- A minimum of 10 years demonstrated and relevant engineering industry experience, at least 5 years of which would have involved working at the level of recognized expert
- Demonstrated experience in a technical environment with advanced skills in complex design and development.
- Project management skills with proven ability and experience to lead sizable development projects.
- Ability to quickly understand scientific concepts in X Ray and Accelerator physics to a sufficient level where design decisions can autonomously be made knowing and understanding the physics of the problem.
- The ability to effectively communicate with, influence and collaborate with people at all levels including various technical groups and other experts in their field.
- The ability to work autonomously
- Project management experience

Desirable

- Experience in a science environment or expert knowledge and skill unique to partial accelerators and X ray environments

- Formal Project Management qualification

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: Alan Ng	Name: Paul Martin
Title: Manager, Controls Systems	Title: Senior Manager, Controls & Scientific Computing
Signature:	Signature:
Date: 06/06/2023	Date: 06/06/2023

Appendix 1

ANSTO Job Families
Accounting & Finance
Administration
Communications & Marketing
Compliance & Regulation
Engineering and Technical
Human Resources
ICT & Digital Solutions
Information & Knowledge Management
Legal
Manufacturing
Monitoring & Audit
Operations
Organisational Leadership
Project & Program
Research
Science
Security & Intelligence
Senior Executive
Service Delivery
Strategic Policy
Trades & Labour