



POSITION DESCRIPTION

Position Title:	Lead Beamline Engineer
Cluster / Business Unit / Division	NSTLI/Clayton Campus
Section or Unit:	Engineering
Classification:	Band 7
Job Family:	Engineering
Position Description Number:	PD-1782
Work Contract Type:	Professional
STEMM/NON-STEMM:	STEMM
STEM CATEGORY:	Engineering

POSITION PURPOSE

The Lead Beamline Engineer has overall accountability and technical leadership of all engineering systems for the build and development of the new beamline. To successfully achieve this outcome the role is required to define and develop system level designs, specifications, designs, analysis, provide manufacturing supervision, installation supervision and commissioning of the beamline mechanical subsystems. The role will provide technical leadership and advice to other engineers and technicians. The role produces written reports for the purpose defining requirements, evaluating tender responses and design records for reference once the beamline is operational

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.

The Australian Synchrotron provides world-leading technical capability, and the nucleus around which new science and industry networks form as researchers interact. The synchrotron delivers better and faster experimental techniques that not only enhance current fundamental and applied research, but also open up new avenues of investigation to Australian science. The facility promotes international collaboration to enable leading-edge research and development, and is a hub for research that greatly benefits Australia and its regional neighbours.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Use significant specialist knowledge and expertise in beamline engineering to provide technical leadership, advice and guidance to the beamline project team.
- Ownership of engineering systems on the beamline. Maintaining a broad breadth of specialist knowledge of systems in the interest of development of requirements, technical specifications, engineering analysis and technical solutions.
- Decision making and technical evaluation of engineering aspects of tenders of multimillion dollar value (beamline project value is ~\$12M). Responsibility for completing and approving appropriate design reviews, factory acceptance testing and approvals with suppliers
- Development of advanced engineering technical solutions for specific beamline components or systems.

- Manage and provide direction of technical interfaces to ensure consistency between the work packages of various international suppliers and manufactures.
- Manage all engineering aspects of the beamline construction activities and coordination between various suppliers and contractors as they deliver and construct their equipment.
- Responsible for the safety of specific technical systems that are developed for the beamline and maintaining an overall risk register in the interest of personnel & equipment Review of compliance to Australian Standards and other legal/regulatory requirements, developing safe operating procedures for beamline equipment and recording.
- Lead and manage all engineering related interactions with key stakeholders. The position is accountable for the accuracy, integrity and quality of the advice provided and is required to ensure that decisions are based on sound evidence and subject matter expertise
- Define technical requirements of subprojects that may be implemented by other engineering teams in support of the beamline build and provide ongoing technical leadership and guidance to these engineers/technicians to ensure technical appropriateness and delivery.
- Develop maintain and improve opportunities and mutually beneficial collaborative relationships with in house subject matter experts, peers in industry and other world leading synchrotrons.

Decision Making

This role makes decisions related to:

- Decide the technical design requirements to meet performance objectives of the beamline – and the appropriateness of proposed solutions to meet those requirements. At times, effective judgements under pressure or in the absence of complete information may be required
- Determine key work priorities within the context of agreed work plans and consult with the stakeholders on complex, sensitive and major issues that have a significant impact on engineering aspects of the beamline build
- Decisions on corrective actions when dealing with non-compliances to technical performance requirements.
- The position has influence on defining engineering methods, technology and implementation of the beamline hardware
- 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

- Providing solutions to complex technical problems, without impact on other systems requiring a wide range of technical skills that may not be readily available and may be custom built.
- Leading a complex engineering installation project in the context of an operational facility to tight and fixed deadlines.
- Carrying out work in a heavily regulated environment where adherence to all regulations is mandatory
- Managing the interests and expectations of multiple stakeholders within an environment of differing expectations, demands and priorities for delivery
- Interpretation of scientific requirements into engineering technical requirements from which solutions will be based. Often this will require a good understanding of the scientific principals associated with the challenge being set by the beamline or accelerator.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Head of Engineering	<ul style="list-style-type: none"> Regularly, and as required to discuss 'beyond the norm' needs to complete a project phase, specific task or manage priorities where higher level input is required. Also to provide advice on technical feasibility or practicality on of solutions proposed in the development of the beamline systems.
Members of the Engineering Function	<ul style="list-style-type: none"> As required to gain expert technical advice and guidance depending on the challenge at hand. E.g. Metrology, Vacuum, Cryogenics.
Project Manager	<ul style="list-style-type: none"> Regularly, and as required to provide updates, technical feedback from suppliers, design reports etc.
Project Team	<ul style="list-style-type: none"> Daily/Weekly or as often as required to provide expert technical advice; keep 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
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. Generally seeking and provision of advice as required
Specialist contractors/suppliers	<ul style="list-style-type: none"> Monthly, and as required to provide guidance on technical requirements, seek information on progress and technical challenges. Ensuring technical interface requirements are meet, installation coordination.

POSITION DIMENSIONS

Staff Data	
Reporting Line	The position is a member of the Engineering Department and reports directly to the Head of Engineering
Direct Reports	This role has no direct reports
Indirect Reports	This role may be required to supervise and provide guidance to other engineers and technicians who may be called upon to assist the project in providing technical expertise or manpower.

Special / Physical Requirements	
Location:	Clayton
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) Standing for long periods Working in a loud environment Public speaking
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 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 Obtain and maintain appropriate federal government clearance

Workplace Health & Safety	
Specific role/s as specified in <u>AG-2362</u> 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

On File

KNOWLEDGE, SKILLS AND EXPERIENCE

1. A Degree level or higher qualification in Mechanical Engineering or similar.
2. Extensive demonstrated and relevant engineering industry experience, which would have involved the delivery of project based work packages.
3. Advanced knowledge of beamline systems gained through on the job experience.
4. Demonstrated experience in a technical environment with a breadth of advanced skills in complex design and development of advanced engineering equipment.
5. 3D CAD modelling and drafting skills.
6. Demonstrated ability to interpret user requirements into engineering technical specifications.
7. Demonstrated ability to confirm the viability of solutions proposed by vendors through appropriate engineering calculation.
8. Project management skills with proven ability and experience in technical leadership within sizeable development projects.
9. 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.
10. The ability to effectively communicate with, influence and collaborate with people at all levels including various technical groups and other experts in their field.
11. The ability to work autonomously.
12. Project management experience in a science environment or expert knowledge and skill unique to partial accelerators and X ray Beamlines would be beneficial.
13. Functional finite element skills in a high end package such as ANSYS would be beneficial.

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 is the direct manager of the position. Delegated authority is the most appropriate senior manager within the Business Area (General Manager or Head , in absence of these roles within structure, it must escalate to Group Executive).

Line Manager	Delegated Authority
Name: Brad Mountford	Name: Andrew Peele
Title: Head of Engineering	Title: Director, SLSA
Signature:	Signature:
Date:	Date: