Australian Government

POSITION DESCRIPTION

Position Title:	System Engineer *(Mechanical/Process/Chemical, I&C Electrical, OT)*
Cluster / Business Unit / Division	Nuclear Operations
Section or Unit:	Nuclear Medicine - Technical
Classification:	Band 5/6 – Linked Role
Position Description Number:	PD-2088
Work Contract Type:	Professional

POSITION PURPOSE

The System Engineer is responsible for delivering engineering maintenance solutions that deliver safe, secure and sustainable production technologies and processes for the manufacture of Nuclear Medicine.

This is a key role in relation to asset performance & compliance management. Ensuring operating, maintenance and capital investment strategies are optimised, and continuously improved through data feedback and operational experience. The role includes a level of responsibility for the engineering design and configuration of allocated plant systems to support safety, reliability, maintainability and regulatory compliance requirements.

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 Nuclear Operations division includes a number of plant facilities including OPAL Reactor, Waste Operations, and Nuclear Medicine with Health Products and ANSTO Nuclear Medicine (ANM).

Nuclear Medicine is engaged in the manufacture and sales of radiopharmaceutical and radiochemical products. Manufacturing is strictly controlled, where processes must meet certain standards based upon the requirements in the current Guide to Good Manufacturing Practice (GMP). Quality Assurance (QA) is essential and, due the time sensitive nature of the products, just-in-time principles are applied.

The Technical Unit is responsible for planning and conducting plant maintenance, managing and implementing plant and process modification projects, providing engineering, process and quality support for Nuclear Medicine.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Undertake delegated ownership and accountability for allocated asset systems
- Develop, implement and optimise maintenance strategies to deliver safe, secure and sustainable operations
- Investigate and develop long term capital investment strategies
- Conduct root cause analysis and undertake corrective action for equipment failures
- Monitor and report system performance trend and KPIs
- Develop and implement continuous improvement initiatives for plant reliability
- Conceptualise and design continuous improvement solutions that are fit for purpose, cost effective and practical.
- Participate in end-to-end engineering including manufacturing, testing, commissioning and validation of equipment/system.
- Undertake additional duties as require and during periods of leave of other staff.

In addition to performing all Band 5 key accountabilities with little or no direct supervision, the key accountabilities for a Band 6 position include:

- Lead, mentor and develop other engineers across Nuclear Medicine. Allocate workload and responsibilities as required
- Initiate projects and lead small teams, ensuring timelines are met, budget is controlled and risks are managed.
- Be proactive in encouraging and sharing of knowledge and experience within Nuclear Medicine.
- Lead end-to-end engineering to develop, construct, install, commission and validate equipment and processes.

Decision Making

- 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 objectives of the unit, including deciding on methods and approaches, operations, project planning and allocation of resources.
- Accountable for the accuracy, integrity and quality of the content of advice provided to management and Service Providers, and is required to ensure that decisions are based on sound evidence. May be required to make effective judgements in the absence of complete information or expert advice.
- Assesses and determines key work priorities within the context of agreed work plans. Consults with the manager on complex, sensitive and major issues that have a significant impact on the business unit.
- 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

- Introducing, teaching and establishing Reliability Centred Maintenance methodologies.
- Developing innovative and creative solutions to system issues where there may be few precedents.
- Delivering sustainable and predictable result in a highly complex and stringent regulatory operating environment.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Manager	• Receive guidance and direction • Provide expert, authoritative and evidence based advice • Negotiate and report on project budgets and resources consistent with strategic plans and goals
Work area team members	• Provide expert advice and analysis on a full range of matters • Contribute to group decision making processes, planning and goals • Collaborate and share accountability • Negotiate and resolve conflicts
Direct Reports	• N/A
Other Departments (eg AME, BOS, NM Ops/Quality/Production)	• Collaborate and share accountability • Negotiate and resolve conflicts
External	

Contractors	• Manage contractor work to ensure delivery as per requirement
ARPANSA	• Nuclear regulatory body
TGA	• GMP regulatory body

POSITION DIMENSIONS

Staff Data	
Reporting Line	Nuclear Medicine Engineering/Asset/Technical Manager
Direct Reports	Nil
Indirect Reports	Maintenance Technicians for applicable tasks

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 May be required to 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)
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 and project 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
Linked Role:	Transition from Band 5 to Band 6 will occur following an assessment and recommendation from the relevant manager, and approval from the GM Nuclear Medicine. Transition is not automatic and compliance with each transition criteria will need to be demonstrated, documented, assessed and approved.

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

On file.

KNOWLEDGE, SKILLS AND EXPERIENCE

Band 5

1. Degree qualification in Engineering or a related field.
2. Demonstrated industrial experience relevant to discipline.
3. Experience working under GMP or other strict quality assurance system in a tightly regulated environment.
4. Problem solving skills and ability to assess and resolve technical issues.
5. Demonstrated interpersonal and communication skills, both verbal and written.

6. Engineering reliability experience and an understanding of asset management principles.
7. Demonstrated initiative working independently, deadline driven, and reliable in following through with actions.
8. Demonstrated understanding of safety management standards and practices.
9. Demonstrated experience in managing effective relationships with key stakeholders.

In addition to demonstrating strong knowledge, skills and experience at a Band 5 level, the Band 6 position also requires:

1. Significant industrial engineering experience working within the specified systems.
2. Experience managing improvement projects to initiate, manage, co-ordinate and meet objectives within scope, time and budget.
3. Experience leading and coordinating a small team, including motivating, coaching and mentoring staff.
4. Experience developing and implementing innovative approaches to process improvements and the desire to seek and promote continuous improvement.
5. Demonstrated ability to independently develop, implement and optimise maintenance strategies.

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

Delegated Authority		
Name:	Name:	Ian Martin
Title:	Title:	General Manager, Nuclear Medicine Operations
Signature:	Signature:	
Date:	Date:	

Specific Criteria for Assessing Experience and Technical Knowledge for System Engineer Disciplines

Discipline	Criteria
Mechanical / Process/Chemical	• Ability to read and interpret P&I Diagrams and/or Mechanical fabrication drawings. • Experience in development of Task/Plant Risk Assessments, including SWMES/FMECA/HAZOP. • Plant experience with the following equipment: – Pumps/compressors – Fans / HVAC chillers – Instrumentation – Valves (manual & actuated) – Pneumatics/Vacuum Systems • Use of Condition Monitoring techniques, including VA / thermography, leak testing (pressure / helium). • Requirements for mechanical fabrication of items in workshop and/or in the field, including QC processes, documentation requirements, welding procedures/qualifications, NDE techniques / standards. • cGMP Experience • Engineering software experience: – Mechanical: AutoCAD / SolidWorks FEA / ANSYS
Instrumentation and Control	• Ability to read and interpret P&ID's, single line diagrams and other I&C engineering documentation • cGMP Experience • Technical knowledge / experience working with the following systems: – Industrial DCS's – PLC's – Industrial Safety Instrumented Systems – Industrial process instrumentation (sensors, transmitters, gauges, etc) and their calibration/use in industrial applications – Radiation monitoring instrumentation – Electronics / signal processing
Electrical	• Ability to read and interpret electrical schematics and other electrical engineering documentation • Experience with circuit design calculations (component / cable selection) • Good knowledge of AS3000 • Technical knowledge / experience working with the following systems: – LV power distribution systems – Standby power systems – UPS systems
Operational Technology	• Knowledge and experience of relevant cyber security standards and guides including a detailed understanding of IEC 62443, NIST SP 800-82, ISO/IEC 27001, ASD ISM. • Cyber security industry accreditations (e.g.: CISSP, CEH, CISM, CISA, GIAC) are desirable. • High level of UNIX / Linux / Windows and virtualisation operating systems experience. • High level of IP networking and network security experience. • Experience with cyber security forensic and analysis tools.