SIAS Qualification Specification

SIAS Level 2 Award in the Introduction to the Nuclear Industry

Qualification Number: 610/6297/2

Operational Start Date: 1 September 2025

Contents

Version History

This is a live document and as such will be updated when required. It is the responsibility of the approved centre to ensure the most up-to-date version of the Qualification Specification is in use.

Version	Date	Comments
1.0	01/09/2025	First published

Introduction

Welcome to SIAS

SIAS is an Awarding Organisation regulated in England by the Office of Qualifications and Examinations Regulation (Ofqual) and in Northern Ireland by the Council for Curriculum, Examination and Assessment Regulation (CCEA Regulation).

We exist to drive positive change, and across STEM industries globally, we empower learners to achieve their full potential.

As the leading Awarding Organisation for the technical science, manufacturing, engineering and low carbon sectors, we are disrupting through innovative and collaborative approaches.

Our mission is to deliver transformational experiences and solutions that support the skills agenda.

Feedback

Customer experience and feedback is very important to us. We're always open to suggestions when it comes to enhancing and improving our services. If you have any comments or feedback on our services or products, please contact our team at info@siasuk.com or call us on 01925 515211.

About this Specification

This document has been developed to provide information for learners and centres undertaking, delivering or quality assuring this qualification.

Centre Recognition and Qualification Approval

To deliver this qualification, the centre must be recognised by SIAS.

Recognised centres must apply for approval for each qualification they intend to offer. Qualification approval must be obtained prior to conducting any learner assessments.

For details of our centre recognition and qualification approval process, visit our website or contact us at info@siasuk.com.

About this Qualification

Key Facts

Qualification Title	SIAS Level 2 Award in the Introduction to the Nuclear Industry
Qualification Number	610/6297/2
Guided Learning Hours (GLH)	7
Total Qualification Time (TQT)	11
Assessment Methods	Multiple-Choice Question Examination
Operational Start Date	1 September 2025
Review Date	31 August 2028
Operational End Date	-
Certification End Date	-
Regulation	This qualification is regulated by Ofqual

Qualification Objective

The SIAS Level 2 Award in the Introduction to the Nuclear Industry is designed to develop the learner's basic awareness of the nuclear industry. It covers the history and development of the industry, the role of regulation and safety culture, the science behind nuclear processes, and the nuclear fuel cycle. Learners will also gain an understanding of radiation, contamination, and measures to reduce exposure. This qualification is designed to prepare individuals for safe and informed work in nuclear environments or to support further study in related fields.

This qualification has been developed by SIAS in partnership with the National Skills Academy Nuclear (NSAN).

Entry Requirements

This qualification is available for learners aged 16+.

There are no formal entry requirements for the SIAS Level 2 Award in the Introduction to the Nuclear Industry. However, learners should have a basic understanding of English and mathematics. Centres should also ensure learners are able to complete this qualification, for example, through completing an initial assessment to ensure they can work at the appropriate level.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is the process of recognising previous, informal or experiential learning which could contribute to a qualification or unit. SIAS supports the use of RPL, and centres must work to the principles included in the SIAS RPL Policy which is available on the SIAS website. This policy should be reviewed alongside this guide and all other relevant SIAS qualification documentation.

Qualification Structure

To achieve the SIAS Level 2 Award in the Introduction to the Nuclear Industry, learners must achieve the following 2 mandatory units as described below:

Ofqual Unit reference	Unit title	Level	GLH	TQT
K/651/7625	Introduction to the History, Regulation and Safety Culture in the Nuclear Industry	2	3	5
L/651/7626	Introduction to Nuclear Science	2	4	6
TOTAL			**7**	**11**

Total Qualification Time (TQT) and Guided Learning Hours (GLH)

Note: Values for Total Qualification Time, including Guided Learning Hours, are calculated by considering the different activities that learners would typically complete to achieve and demonstrate the learning outcomes of a qualification. They do not include activities which are required by a learner's teacher based on the requirements of an individual learner and/or cohort. Individual learners' requirements and individual teaching styles mean there will be variation in the actual time taken to complete a qualification. Values for Total Qualification Time, including Guided Learning, are estimates.

Some examples of activities which can contribute to Total Qualification Time include:

- independent and unsupervised research/learning
- unsupervised compilation of a portfolio of work experience
- unsupervised e-learning
- unsupervised e-assessment
- unsupervised coursework
- watching a pre-recorded podcast or webinar
- unsupervised work-based learning
- all guided learning.

Some examples of activities which can contribute to Guided Learning include:

- classroom-based learning supervised by a teacher
- work-based learning supervised by a teacher
- live webinar or telephone tutorial with a teacher in real time
- e-learning supervised by a teacher in real time
- all forms of assessment which take place under the immediate guidance or supervision of a lecturer, supervisor, tutor or other appropriate provider of education or training, including where the assessment is competence-based and may be turned into a learning opportunity.

Grading

This qualification is assessed as a pass/fail.

Delivery and Assessment

Geographical Coverage

This qualification is regulated in England.

Use of Language

All learners must be assessed in English unless the qualification specification states that another language will be accepted.

Progression Opportunities

Upon successfully completing this qualification, learners may progress into further development and training in the nuclear industry.

Assessment Guidance

All SIAS assessments will be accessible and produce results that are valid, reliable, transparent and fair.

The SIAS Level 2 Award in the Introduction to the Nuclear Industry contains 2 mandatory knowledge units.

Unit No.	Unit title
1	Introduction to the History, Regulation and Safety Culture in the Nuclear Industry
2	Introduction to Nuclear Science

To achieve the qualification, learners must successfully pass one externally set and marked Multiple Choice Question (MCQ) examination covering both mandatory units as detailed in the below table:

Component	Set by	Marked by	Assessment Method	Pass Requirement	Grading
Unit 1	SIAS	SIAS	11 MCQs	Minimum 6/11 correct	Pass/Fail
Unit 2	SIAS	SIAS	14 MCQs	Minimum 8/14 correct	Pass/Fail
Overall Award	**SIAS**	**SIAS**	**One MCQ examination (25 questions for units 1 + 2)**	**Both units must be passed and a minimum of 17/25 (70%) overall**	**Pass/Fail**

Time Allowed: Learners have 50 minutes in total to complete the examination.

The assessment is available online through the SIAS secure XAMS platform.

The assessment must be undertaken in controlled conditions. This means:

- learners must complete the assessment unaided
- books and other training aids must not be accessed by the learners.
- all assessments must be invigilated to maintain authenticity and security.

All assessment results will be subject to moderation and monitoring by SIAS to ensure standards are maintained and outcomes remain fair and consistent.

Centres should have systems in place to verify a learner is ready to undertake their assessment.

Centres must ensure that no part of the assessment process, including invigilation or internal quality assurance is conducted by anyone with a personal interest in the assessment outcome.

Learners who do not achieve a pass will be permitted to retake the assessment up to two times. A resit may only be undertaken for an assessment that has previously been failed.

Documentation to support the qualification assessment process can be accessed from the SIAS Pinacle system.

ID requirements

It is the responsibility of the centre to have systems in place to ensure that the person taking an assessment is the person they are claiming to be. All centres are therefore required to ensure that each learner's identification is checked before they undertake the assessment.

SIAS recommends the following as proof of a learner's identity:

- a valid passport (any nationality)
- a photocard driving licence
- another photographic ID card, e.g. employee ID card, student ID card, travel card etc.

Centre Requirements

All SIAS centres must be approved by SIAS to deliver the qualification(s) they wish to offer. This is to ensure centres have the processes and resources in place to deliver the qualification(s). Further information can be found in the SIAS Centre Handbook.

When a centre applies to offer a qualification, they will need to provide evidence that they have sufficient resources and infrastructure in place for delivery of that qualification:

- evidence of staff competence and knowledge
- details of available resources.

Information regarding the induction and continuing professional development must be made available to SIAS by centres through the external quality assurance process.

Tutor/Trainer Requirements

For the SIAS Level 2 Award in the Introduction to the Nuclear Industry tutors/trainers are required to demonstrate they:

- have relevant occupational knowledge and competence
- hold a recognised training qualification or have equivalent training experience
- have completed recent, relevant CPD activities.

Evidence includes:

- CV and relevant occupational qualifications and experience
- up-to-date CPD Record including certification from any courses attended.

SIAS recommends that as best practice for tutors/trainers to hold or be working towards a relevant education and training qualification. These include:

- Level 3 Award in Education and Training or equivalent including Preparing to Teach in the Lifelong Sector (PTLLS), CertEd/PGCE, L4 Certificate in Education and Training, L5 Diploma in Education and Training

Where this is not the case, SIAS will look at alternative sources of evidence for training competence, such as professional qualifications, relevant work experience or internal training records. For further guidance, please contact us.

Continuing Professional Development (CPD)

Centres are expected to support their staff, ensuring that their subject knowledge remains current and is up to date with best practice.

Quality Assurance Guidance

All SIAS qualifications require centres to have in place a robust mechanism for the quality assurance of training delivery and invigilated assessment arrangements.

External Quality Assurance

External quality assurance will be undertaken by SIAS. Centres will be required to provide documentation and other evidence to support this process upon request. Please refer to our Centre Handbook for further details.

Equality and Diversity

Delivery of SIAS qualifications must comply with equality and diversity legislation. Learners should not experience any barriers to achievement in respect of:

- Age
- Disability
- Gender

- Gender reassignment
- Marriage and civil partnerships
- Pregnancy and maternity
- Race
- Religion and belief
- Sexual orientation.

Reasonable Adjustments

All learners must be treated fairly and equally and be provided with every opportunity to achieve our qualification(s). For more information or guidance, please refer to the SIAS Reasonable Adjustments Policy available on our website.

Health and Safety

SIAS are committed to ensuring the safety and wellbeing of learners. Due to the nature of some of the sectors SIAS work in, there can be a high level of risk which we expect centres to manage effectively. Centres must take appropriate measures to assess and manage these risks and implement procedures so that qualifications are delivered safely, minimizing risks to learners and those involved in the assessment process as much as possible. Working environments must comply with all required health and safety standards.

Qualification Content

Unit 1: Introduction to the History, Regulation and Safety Culture in the Nuclear Industry

Unit Reference	K/651/7625	
Level	2	
GLH	3	
Aim	This unit aims to provide learners with an overview of the history and development of the nuclear industry. It introduces the role and significance of nuclear site licenses, inspectorates, and regulators, while fostering an understanding of the importance of nuclear safety culture in maintaining safe and effective operations.	
Assessment Methodology	Multiple-choice examination	
Learning Outcomes *The learner will:*	Assessment Criteria *The learner can:*	
1. Know the history and development of the nuclear industry.	1.1	Identify why the nuclear industry is different to other high hazard sectors.
	1.2	Identify the uses of nuclear energy.
	1.3	Identify key milestones in the development of the nuclear industry.
	1.4	Outline the impact of technological advancements on the growth of the nuclear industry.
2. Understand the meaning of nuclear site licenses, inspectorates and regulators in the nuclear industry.	2.1	Identify the key regulators and inspectorates responsible for nuclear site licensing.
	2.2	State the importance of following the regulators conditions for operating nuclear sites.
	2.3	Specify the consequences of breaching regulators conditions for operating nuclear sites.
3. Understand nuclear safety culture.	3.1	Define the concept of nuclear safety culture and its importance in the industry.
	3.2	Identify practices that reflect effective nuclear safety culture.
	3.3	Identify different types of emergencies that can occur at nuclear sites.

Unit 2: Introduction to Nuclear Science

Unit Reference	L/651/7626	
Level	2	
GLH	4	
Aim	This unit aims to give learners a basic understanding of the structure of an atom and the process of nuclear fission. It also introduces the principles of radiation and contamination, while providing knowledge on how to reduce radiation exposure and prevent the spread of contamination in nuclear environments. The unit also explores the concept of the nuclear fuel cycle and its significance within the nuclear industry.	
Assessment Methodology	Multiple-choice examination	
Learning Outcomes *The learner will:*	Assessment Criteria *The learner can:*	
1. Know the basic structure of an atom and the process of nuclear fission.	1.1	Identify the main components of an atom.
	1.2	Define the concept of nuclear fission and how it releases energy.
	1.3	State the importance of moderation and control of nuclear fission.
2. Know the basic principles of radiation, exposure, contamination and radioactive decay.	2.1	Define nuclear radiation.
	2.2	Differentiate nuclear exposure from nuclear contamination.
	2.3	Define the concept of radioactive decay.
3. Understand the concept of the nuclear fuel cycle.	3.1	Identify the different stages of the nuclear fuel cycle.
	3.2	Identify different types of reactor design.
	3.3	Outline the key steps involved in generating electricity from nuclear fission.
	3.4	Identify methods used to store and dispose of nuclear waste securely and safely.
4. Understand how to reduce exposure to radiation and minimise the spread of contamination.	4.1	Identify methods of reducing radiation exposure.
	4.2	Identify safety measures to prevent or reduce the spread of contamination.

Resources

SIAS provides the following additional resources for this qualification:

- Centre Qualification Guide
- Qualification Learner Logbook
- Externally Set Assessments.

Appendix 1: Specimen Assessment

Specification for the SIAS-set, SIAS-marked Multiple Choice Question Examination.

Number of Questions	**25 questions covering 2 mandatory units.** Unit 1: 11 questions Unit 2: 14 questions
Time Allowed	50 minutes
Pass Criteria	Unit 1: A minimum of 6 correct answers out of 11 Unit 2: A minimum of 8 correct answers out of 14 **Overall pass mark: 17 out of 25 (70%)**
Grading	Pass or Fail

Sample questions:

Sample Question 1
What is a key principle of radiation protection?
A. Maximising exposure
B. Minimising distance
C. Limiting time
D. Removing dosimeters
Answer: C

Sample Question 2
What is the final stage in the nuclear fuel cycle?
A. Reprocessing
B. Waste management
C. Storage
D. Decommissioning
Answer: D

Further Information

For information about SIAS and general enquiries please see our website: www.siasuk.com or contact:

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