

What makes Safety?



The strategic skills alliance for the Nuclear Industry

Human Performance Training Standards

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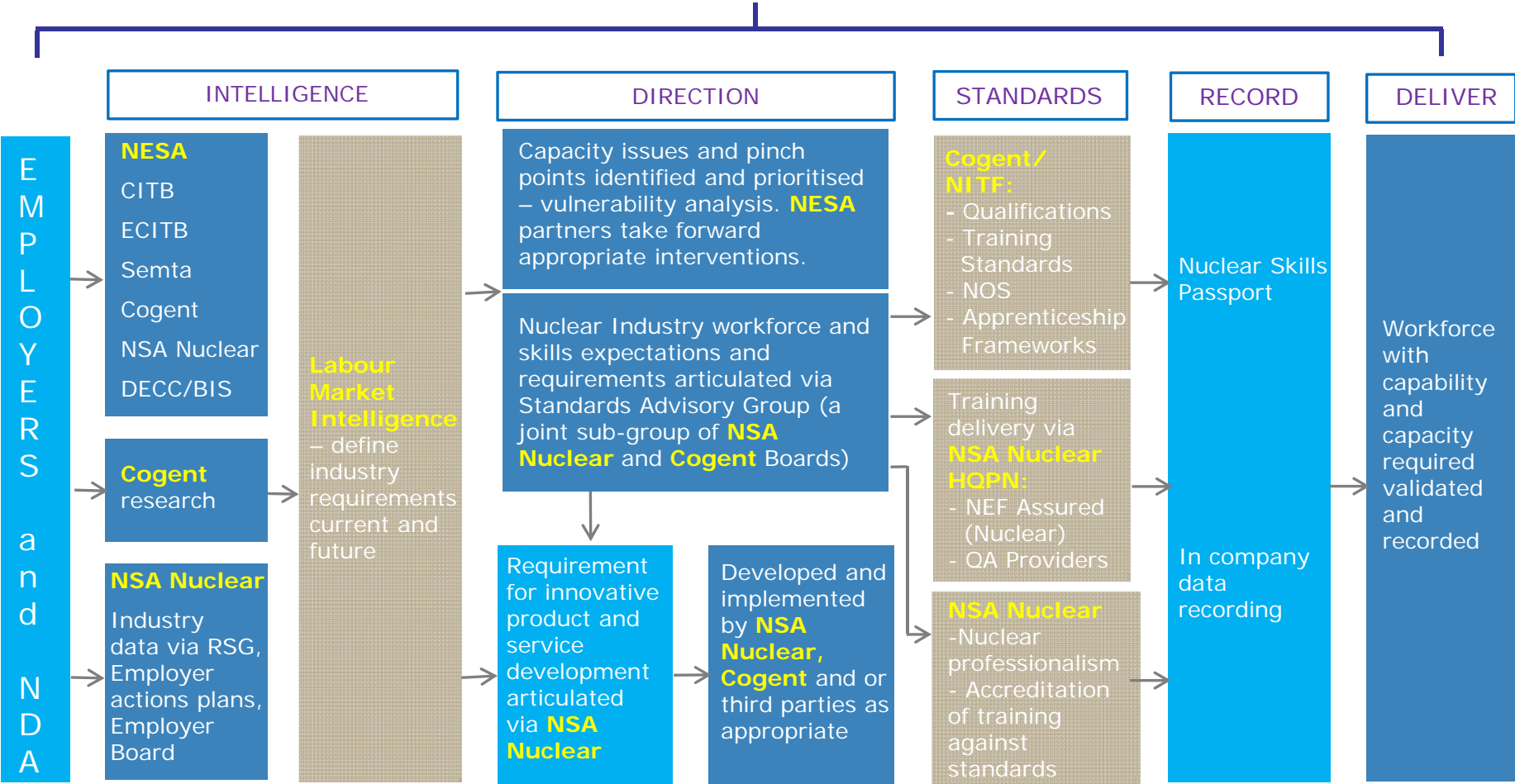
What makes Safety? Safety Cases?

Outline

- Governance and Roles of Cogent and National Skills Academy Nuclear
 - Labour Market Intelligence
 - Qualifications, Frameworks and Standards
 - High Quality Provider Network / Quality Assurance
 - Deployment of Training Products
 - Nuclear Skills Passport
- Human Performance Training Standards

Skills Value Chain

National Skills Academy Nuclear Strategic Overview (Includes an Annual Systematic Review)



HQPN High Quality Provider Network – also includes HE Members, Employer Nominated, International Providers

NESA Nuclear Energy Skills Alliance **RSG** Regional Steering Group **NITF** Nuclear Industry Training Framework

Capturing Nuclear Industry Skills Needs

- Lack of national data – limited SIC/SOC coverage
- Lack of common role descriptors
- A description of the roles in the nuclear industry required to achieve granularity of LMI.
- On formation of NDA ~900 role description now at 51. Another company has 22 skillsets, another 54 resource codes, another 9 competence frameworks
.....
- Need a common language for resource counting and skills needs capture – Job Contexts

Job Contexts

1. Energy Production Operations
2. Decommissioning Operations
3. Process Operations
4. Maintenance Operations
5. Safety & Security
6. Radiation Protection
7. Project Management
8. Engineering Design
9. Scientific & Technical Support
10. Business
11. Construction
12. Waste & Repository Operations
13. Commissioning Operations
14. Manufacturing

Role Levels

5. Senior Managers
4. Middle Managers/Graduates
3. Technician
2. Skilled
1. Semi-skilled

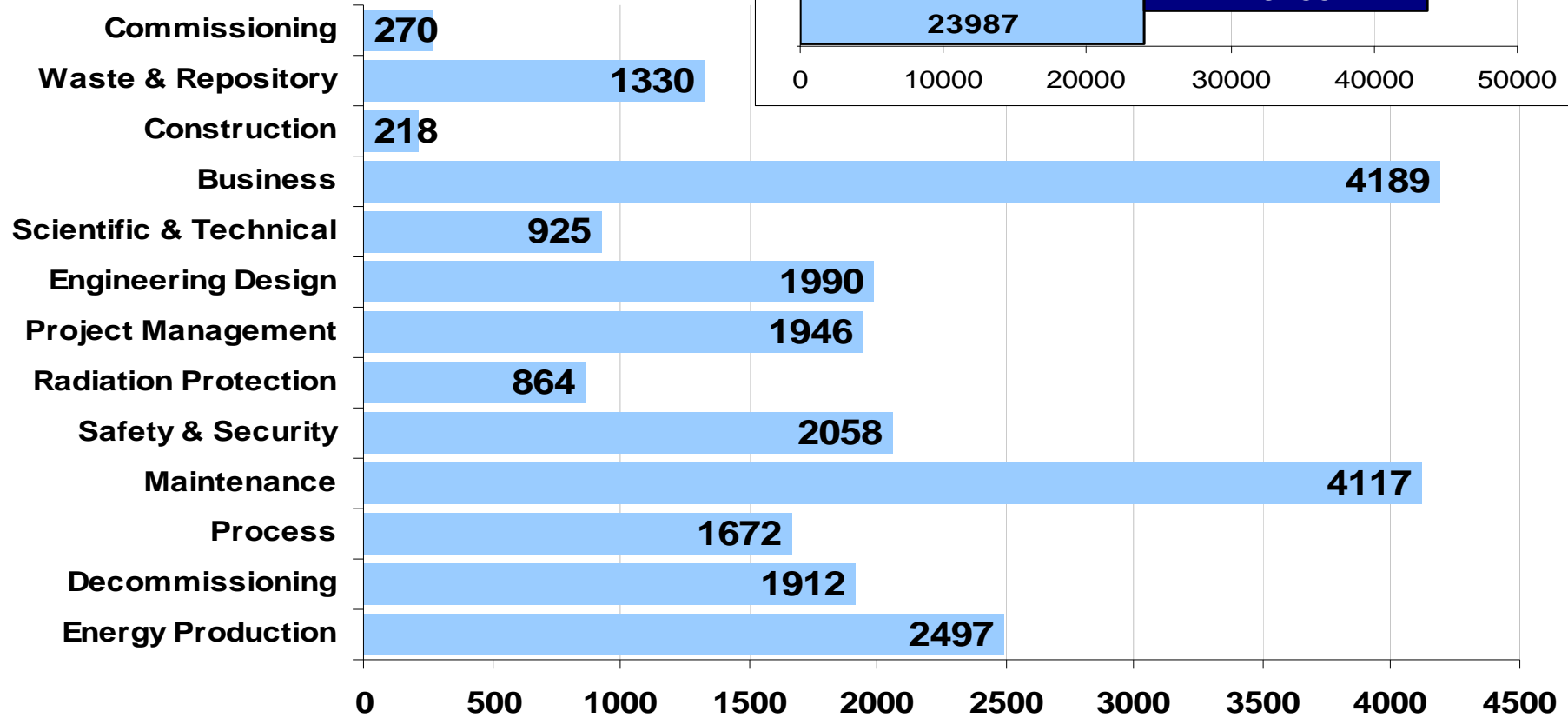


Role of Job Contexts:

- Collect LMI
- www.cogent-ssc.com/research/nuclearresearch.php

Civil Nuclear Industry - Job Context Population 2009

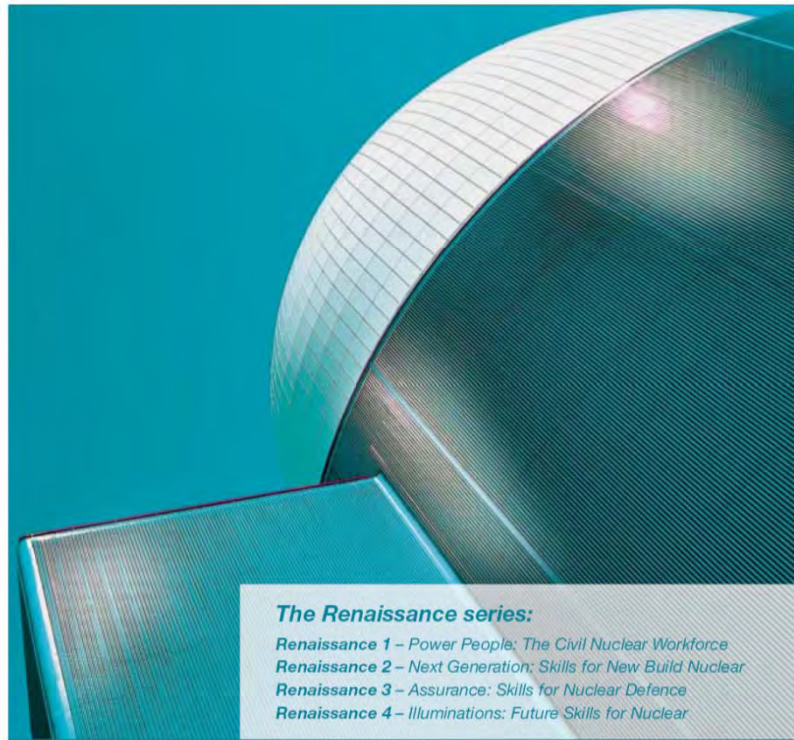
Total: 43,690



NUCLEAR

Next Generation

Skills for New Build Nuclear



[www.cogent-ssc.com/research/
nuclearresearch.php](http://www.cogent-ssc.com/research/nuclearresearch.php)

Renaissance 1:

Power People: The Civil Nuclear Workforce

Renaissance 2:

Next Generation: Skills for New Build Nuclear

Renaissance 3:

Assurance: Skills for Nuclear Defence

Renaissance 4:

Illuminations: Future Skills for Nuclear

Role of Job Contexts:

- Collect LMI

www.cogent-ssc.com/research/nuclearresearch.php

- Detail Competences and Qualifications/Training Standards www.cogent-ssc.com/industry/nuclear/nitfjs.php



Skill Area	Knowledge and behaviours	qualifications and training standards
<p>Technical Competence</p>	<ul style="list-style-type: none"> •Prepare work for decomm' •Assemble and dismantle decomm equipment •Operate, maintain, monitor and adjust equipment •Dismantle contaminated plant etc. •Decontaminate radioactive plant etc •Remover and transfer hazardous materials. •Operate in pressurised suite environment 	<p>PAA/VQSET Level 2 Diploma in Nuclear Decommissioning (NVQ) (QCF)</p>
<p>Business Improvement</p>	<p>Solve routine decomm problems with efficiency techniques Apply workplace organisation techniques Understand variety of efficiency improvement techniques</p>	<p><i>Optional</i> Level 2 Diploma in Business Improvement</p>
<p>Compliance</p>	<ul style="list-style-type: none"> •safety, security expectations on nuclear sites •Principles and implications of radiation hazards •Procedures for radioactive discharge, waste, enviro' control, e •Safety management systems eg Permit to Work, SOPs and Ris •Company policy, legislation and regulation 	<p>Basic Common Induction Standard Basic NI Behaviours training Basic NI Context Training Standard * Working Safely Training Standard</p>
<p>Functional and Behavioural</p>	<p>Communications Numeracy ICT Team working and Personal Development Take responsibility for completing tasks and procedures Coach others</p>	<p>Can be acquired through GCSE and Core/Functional Skills programmes</p> <p><i>Optional</i> Level 2 ILM Award in Personal Development</p>



Skill Area	Knowledge and behaviours	qualifications and training standards
<p>Technical Competence</p>	<ul style="list-style-type: none"> •the individual can produce nuclear safety cases, including... liaison with stakeholders involved with the safety case. obtaining contextual information for nuclear safety cases. identifying safety hazards by a range of complementary techniques. developing safety claims for use in nuclear safety cases. commissioning the production of evidence. providing risk assessments which can be implemented. verifying evidence for use in 'fit for purpose' nuclear safety cases. project managing the review and approval process. supporting through-life safety issues. providing information and advice on nuclear safety cases. <ul style="list-style-type: none"> •The individual understands... <ul style="list-style-type: none"> The structure of modern standards nuclear safety cases the requirements of nuclear safety case Due Process. ALARP and its application throughout the safety case lifecycle. the engineering design and operation of the assessed plant. how the safety case can be implemented and how it integrates with the design and operation of the plant/equipment. 	<p>Relevant Honours or Foundation Degree or HNC with Suitable Experience</p> <p>Safety Case Lead Author Training Standard (being developed)</p>
<p>Compliance</p>	<ul style="list-style-type: none"> •safety, security expectations on nuclear sites •Principles and implications of radiation hazards •Procedures for radioactive discharge, waste, enviro' control, emerge •Safety management systems eg Permit to Work, SOPs and Risk Ass •Company policy, legislation and regulation 	<p>Basic Common Induction Standard Basic NI Behaviours training Basic NI Context Training Standard * Working Safely Training Standard</p>

Training Standards

- **Basic Common Induction Standard**
- **Basic Nuclear Industry Context**
- **Basic Nuclear Industry Behaviours**
- Managing Safely
- Working Safely
- First Aid at Work & Re-qualifier
- Working at Height
- Ladder Safety
- Introduction to Project Management
- Foundations in Project Management
- Project Management Practitioner
- Occupational Health and Safety (Engineering Contractors)
- Occupational Health and Safety (Engineering Supervisors)
- Asbestos Awareness
- Radiation Protection – Health Physicist
- Gas Bottle Safety
- Safety Case in development – Lead Author, Peer Reviewer, SC Officer, Process Owner
- **Human Performance**



High Quality Provider Network

- Higher Education Providers
- Quality Assured Providers
 - Further Education Colleges & Private Training Providers
- NEF Assured
 - Site Licence Companies
- Employer Nominated Providers
- International Affiliate Providers

Further details on Skills Academy website:

<http://www.nuclear.nsacademy.co.uk/providers>



Deployment of Training Products

Licencing Process with Providers

Regional Example:

Bridgwater College, Triple Bar & Award for Nuclear Industry Awareness

HuP Practitioner Standard

Eol – 5 providers have responded



Nuclear Skills Passport

- Web Based Secure Repository for Training Records
- Contains Job Contexts
- Contains NITF
- Directory of High Quality Training Providers
- Skills Analysis Tools & Suite of Reports

Allowing....

Nuclear Skills Passport

Allowing....

- Increased Flexibility & Mobility
- Retention of Skills
- Demonstration of SQEP
- Attraction & Career Progression
- Skills Forecasting
- Efficiency of Delivery

For Further Details:

<http://www.nuclearskillspassport.co.uk/>



NUCLEAR SKILLS PASSPORT OVERVIEW





- UK Nuclear Human Performance Forum • established in 2008 to focus upon the development of human performance across the UK. At this time there were no established UK or European standards for human performance training for practitioners, or any consistent approach to the development of human performance in the UK nuclear industry.
- Sub Group of the Safety Directors Forum

Principles.

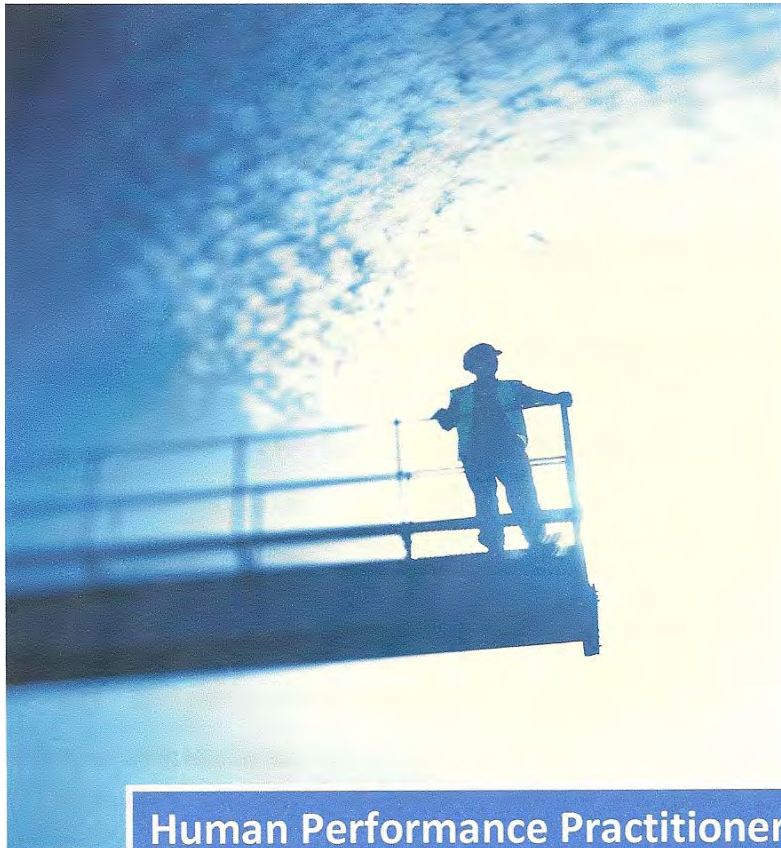
Human Performance focuses on both *reducing errors* and *managing defenses* to create immunity to significant events
Specific human performance principles outlined in INPO and WANO documentation, include:

- People are fallible, even the best make mistakes
- Error likely situations are predictable, manageable, and preventable
- Individual behaviour is influenced by organisational processes and values
- People achieve high levels of performance based largely on the encouragement and reinforcement received from leaders, peers, and subordinates
- Events can be avoided by an understanding of the reasons mistakes occur and application of the lessons learned from past events

Human Performance Training Standards

- Basic Nuclear Industry Behaviours – developed and integral part of the Triple Bar
- Nuclear Worker/Advanced Behaviours – to be developed as industry standard and capture good practice
- Human Performance Practitioner – provides standard for driving forward good practice across industry.

Human Performance Practitioner Training Standards



Human Performance Practitioner
Training Standards

1. Advanced Human Performance Principles and Tools
2. Implement changes in own area of responsibility
3. Observation, Coaching and Influencing
4. Safety culture assessment and improvement
5. Human Factors (Basic Ergonomics, Human Reliability & Workload Assessment)
6. Operating experience process and event investigation
7. Build and deliver training

**Extract from Human Performance Practitioner
Training Standard No 5**

Title Human Factors (Basic Ergonomics, Human Reliability & Workload Assessment)	
Learning Outcomes <i>The learner will...</i>	Assessment Criteria <i>The learner can...</i>
Understand the links between Human Factors and Human Performance	<p>Explain what is meant by Human Factors with reference to human reliability, ergonomics and workload</p> <p>Explain what is meant by Human Performance, and how it relates to the broader subject of Human Factors</p> <p>Describe the key elements of legislation related to human factors and human performance (eg HSG 48)</p>
Know how ergonomics affects human behaviour	<p>Outline the ergonomic standards applied to nuclear facilities and suppliers</p> <p>Outline how the design of equipment, process and management systems can affect human behaviour</p> <p>Outline the different assessment methods used to evaluate the impact of ergonomics on human behaviour</p>

Way Forward

- Map Training Programmes to Training Standards
- Register successful Training on Nuclear Skills Passport
- Accredit RPL on Nuclear Skills Passport
- Continue Liaison with INPO to produce an International Human Performance Practitioner Training Standard.

What makes Safety? ~~Safety Cases?~~

People

The strategic skills alliance for the Nuclear Industry

