



NQC UAE NATIONAL QUALIFICATION/AWARD

For use by developers of UAE national qualifications based on national occupational standards (Q+NOS)

1. General Profile of Qualification

1.1	Title	Level 4 Award for Radiation Emergency Workers - Tier 1			
1.2	Code	HLT04002NQ23			
1.3	Type	<input type="checkbox"/> Principal Qualification		<input checked="" type="checkbox"/> Award	
1.4	Credit and duration	Credit value	4 credits	Duration	60 hours
1.5	QF Emirates Level	Level 4			
1.6	Aim	This award aims to provide learners with the basic knowledge, skills and competencies to respond during the first phases of a nuclear or radiological emergency in a quick, safe and responsible manner, in accordance to agreed plans and in line with Emergency Response established policies, standards and procedures, to ensure that best Radiation Protection practices are maintained.			
1.7	Qualification outcomes	Upon successful completion of this award, learners will be able to:			
		QO01	Demonstrate basic knowledge in providing appropriate response actions as a member of a radiation emergency response team, during the first phases of a nuclear or radiological emergency		
		QO02	Demonstrate basic knowledge of radiation hazard identification and control		
		QO03	Demonstrate basic knowledge in mitigation of potential damage to the environment from sources of radiation		
		QO04	Demonstrate basic understanding of response measures to safeguard life during the first phases of a nuclear or radiological emergency		
		QO05	Demonstrate ability to use personal protective equipment and respiratory protective equipment during the first phases of a nuclear or radiological emergency		
		QO06	Describe the fundamentals of radioactive decontamination		
		QO07	Describe how to decontaminate areas and people, and safely manage radioactive waste		
		QO08	Select the appropriate instrument and perform basic radiation measurements during the first phases of a nuclear or radiological emergency		
		QO09	Demonstrate how to use and manage personal dosimeters		
1.8	Functions	<input type="checkbox"/> Policy and strategy	QF 9-10	<input type="checkbox"/> Controlling	QF 6
		<input type="checkbox"/> Managing	QF 7-8	<input checked="" type="checkbox"/> Maintaining capability	QF 4-6
		<input type="checkbox"/> Specifying	QF 6-7	<input type="checkbox"/> Performing/carry out	QF 1-4

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1.9	Pathways/progression into other qualifications (if any)	Successful Candidates may progress to the Level 4 Award for Radiation Emergency Workers - Tier 2	
1.10	Licensing/regulatory requirements (if any)	Not applicable	
2. Occupation and industry sector			
2.1	ISCO title and code	Occupation title	Protective services workers not elsewhere classified
		4-digit ISCO code	5419
2.2	Industry sector	Sector	Community, health and social services
		Sub-sector	Health Services
3. Entry requirements for this qualification			
3.1	Minimum requirements (if any)	Qualification(s) required for entry	Grade 11 education.
		Other minimum requirements e.g. competence, experience	Candidates should already be employed in a sector in which work activity in the course of radiation emergencies is likely, or be students or trainees in nuclear or radiological sciences. English language literacy. Computational abilities.
3.2	Advisory requirements (if any)	Recommended requirements	It is recommended that medical fitness to work in a radiation emergency environment be obtained prior to work assignment. Grade 12 education.
4. Rules of combination			
4.1	The learner must successfully complete the following minimum number of credits		
	Unit type	Min. Credits	Guidance on the rules of combination (if any)
	Core	4	The learner must successfully complete 4 credits

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4.2 Core unit standards			
Title	Code (NQC to enter)	QF level	Credit value
Gain Knowledge on how to deal with radiation emergency situations – Nuclear and Radiation Emergency Worker Tier 1	HLT04094NU23	Level 4	1
Instigate protective measures to safeguard life – Nuclear and Radiation Emergency Worker Tier 1	HLT04095NU23	Level 4	1
Perform decontamination on people and facilities – Nuclear and Radiation Emergency Worker Tier 1	HLT04096NU23	Level 4	1
Conduct radiation measurements during emergency situations – Nuclear and Radiation Emergency Worker Tier 1	HLT04097NU23	Level 4	1
Total number of credits from <u>core</u> unit standards to be completed			4
4.3 Stream unit standards			
Title	Code (NQC to enter)	QF level	Credit value
4.4 Optional unit standards			
Title	Code (NQC to enter)	QF level	Credit value

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5. Assessment advice

The assessment advice for the qualification to guide learners, assessors and verifiers must consider evidence requirements in NOS unit standards and summarise the main assessment approach and methods for the qualification that will ensure learners meet the qualification learning outcomes. (Note: Trainers, assessors, internal verifiers and external verifiers for this qualification must be occupationally competent in the occupational field of the qualification).

Assessment must be conducted in an environment where evidence gathered demonstrates consistent performance.

Learners must demonstrate consistent performance in conditions that are safe and replicate a potential accident workplace.

Assessment methods can include:

- Scenario setting
- Presentations
- Virtual simulations (or role plays) and modelling
- Written material and reports, including authenticated evidence from workplace and/or training courses
- Checklists and comparative charts
- Statements
- Evidence of written reports summarising results of candidate skills assessment
- Oral or written questioning

Evidence:

- Verbal or written questioning to assess candidate's knowledge
- Summative assessment to ensure consistency of performance in a range of contexts
- Formative evidence for this unit can be written, oral or diagrammatic
- Formative evidence ought to assist learners to learn and increase performance
- Summative assessment is based on real live work situations or simulated situations

Assessors and verifiers must satisfy NQC/VETAC requirements with subject matter expert related to radiation emergency assessments.

All evidence submitted by the learner must be verified and documented by the assessor for future evaluation purpose.

Summative assessment is based on real live work situations or simulated situations.

Assessment judgements are based on evidence that is documented valid, authentic, current, and sufficient, and are consistent with previous judgements made on similar evidence.

Re-submissions are permissible

6. Glossary

Term	Definition
Radiation Emergency Worker - Tier 1	First responders directly involved in the initial activities on site, during the radiation accident, across all sectors (industrial, nuclear, research, medical, etc.). They should be trained in general radiation protection and have a basic, broad understanding of radiological risks, and in detection of radiation.

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Radiation Emergency Worker - Tier 2	Radiation Emergency Workers involved in subsequent accidental situation phases, and who would potentially be involved in activities of radiation levels' assessment and of decontamination. They should be able to measure radiation and to take appropriate actions in case decontamination is required. Additionally, the training should include more complex elements of radiation detection and measurement.
FANR Safety, Security, and Safeguards Glossary	<p>FANR Safety, Security, and Safeguards Glossary aims to provide with a comprehensive compilation of all the terms included in the Federal Law by Decree No.6 of 2009 Concerning the Peaceful Uses of Nuclear Energy (the Nuclear Law) , the Federal Law by Decree No.4 of 2012 Concerning Civil Liability for Nuclear Damage, FANR regulations and FANR regulatory guides and their respective definitions.</p> <p>The 2021 Edition of the FANR Glossary is an updated version of the initial Glossary issued in 2011 and reflects the updates in the legislative and regulatory framework of FANR. This document is developed for information purposes only, the official and authentic definitions being the ones contained in the laws, FANR regulations and regulatory guides as available on the FANR website.</p> <p>https://www.fanr.gov.ae/en/open-data/fnar-glossary (in English) https://www.fanr.gov.ae/ar/open-data/fnar-glossary (in Arabic)</p>

7. Developer details

7.1 Organisation(s)	Radiation Protection RNDC
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8. Key dates

8.1 Endorsement date	01/06/2023
8.2 Review date	31/05/2028



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NQC UAE-NOS TEMPLATE

For use by developers of UAE national occupational standards (UAE-NOS) packaged as unit standards

1.	Title	Gain Knowledge on how to deal with radiation emergency situations – Nuclear and Radiation Emergency Worker Tier 1			
2.	Code	HLT04094NU23			
3.	Credit and duration	3a) Credit value	1	3b) Duration	15
4.	Aim	This unit aims to provide Radiation Emergency Workers with the basic knowledge of radiation physics and radiation protection, and the basic skills to respond effectively, as Member of an Emergency Team, during the first phases of a nuclear or a radiological emergency situation			
5.	Learning outcomes	At the end of this unit, learners will be able to:			
		LO01	Demonstrate knowledge in providing appropriate actions as a member of a radiation emergency response team in the UAE		
		LO02	Demonstrate knowledge of radiation hazard identification and control		
		LO03	Demonstrate knowledge in mitigation of potential damage to the environment from sources of radiation		
6.	QFEmirates Level	Level 4			
7.	Outcomes, performance criteria, and evidence requirements				

Outcome 1 LO01

Performance criteria

PC01	Translate knowledge and understanding of basic radiation physics, namely the basic structure of an atom, including its three primary components
PC02	Explain the following: Alpha radiation Beta radiation Gamma radiation X-ray radiation Neutron radiation Radioactive decay Half-life Fission
PC03	State and explain the three Radiation Protection Principles (justification, optimization and limitation)
PC04	Describe the second principle: "As Low As Reasonably Achievable" (ALARA), in the context of a radiological/nuclear emergency
PC05	Describe the difference between irradiation and contamination
PC06	Describe the three main techniques for mitigating external exposure hazards
PC07	Describe techniques to avoiding or mitigating internal exposure hazards

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PC08	Explain principles of Incident Command System (ICS) and the structure that allows for a cooperative response by multiple agencies in the UAE
PC09	Define Incident Command System
PC10	State the aims of the Incident Command System
PC11	Explain the importance of establishing, maintaining and completing legible incident reporting
PC12	Explain the importance of collaborating with the organisation's management to implement emergency response arrangements

Specific evidence requirements

Candidate must demonstrate knowledge and understanding of the basic principles of radiation physics and protection plus basic emergency response procedures and the importance of implementing an effective Incident Command System and collaborating with the organisation's management.

The following information is provided to aid the training provider in developing the course work:

PC1.05: irradiation (external exposure to radiation) and contamination (potential external and internal exposure to radiation)

PC1.06: Time-Distance-Shielding

PC1.07: confinement, Personal Protective Equipment, decontamination

PC1.11: provides chronological sequence of events; aids root cause analysis; provides feedback on lessons learned etc.

PC1.12: provides necessary foundation for development of site response plans and procurement of related equipment

Outcome 2 LO02

Performance criteria

PC01	Describe the process to perform a basic radiation risk assessment during an emergency
PC02	Describe potential sources of radiation exposure during an emergency situation
PC03	Explain methods for measuring dose rates and contamination levels during an emergency situation
PC04	Explain biological effects of exposure to ionizing radiation
PC05	Explain guidance values for restricting radiation exposure to emergency workers in the UAE
PC06	Explain general protocols to test and conduct routine maintenance on the organisation's resources

Specific evidence requirements

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Candidate must demonstrate knowledge and understanding of the basic principles of hazard identification and control and the potential sources/effects of radiation. Candidate must demonstrate knowledge and understanding of demonstrating effective preparedness for emergency scenarios.

The following information is provided to aid the training provider in developing the course work

PC2.01: identify radiation sources; evaluate dose rates and contaminations levels; decide who/what may be harmed and how; decide on precautions and implement them; review assessment and update as required

PC2.02: describe potential emergency situations cases in industrial, medical and nuclear environments

PC2.03: state gamma and neutron dose rate measurements, surface and air contamination level measurements

PC2.04: tissue reactions and dose thresholds, stochastic effects and their potential outcome

PC2.05: state dose limits for workers and the general public, reference levels in emergency situations

PC2.06: e.g. appliances and equipment, personal protective equipment, radiation detectors, etc.

Outcome 3 LO03

Performance criteria

PC01	Explain potential health hazards to populations during and after nuclear or radiological emergencies
PC02	Explain potential hazards to the environment during and after nuclear or radiological emergencies
PC03	Explain the importance of emergency response exercises in building preparedness for threats and hazards)
PC04	Identify the lessons learned from historical nuclear and radiological emergencies

Specific evidence requirements

Candidate must demonstrate knowledge and understanding of mitigating actual and potential impact to the environment from radioactive materials, the role of emergency response exercises in testing plans, policies, procedures and capabilities, plus learning from historical radiation accidents and incidents.

The following information is provided to aid the training provider in developing the course work

PC3.01: state tissue reactions and dose thresholds, stochastic effects and their potential outcome, nuclear accidents, sheltering, iodine profilaxis, population evacuation, impact on society and social/economic consequences

PC3.02: state environmental contamination and remediation

PC3.03: Test and validate plans, policies, procedures and capabilities

PC3.04: Nuclear emergencies can include: Chernobyl, Ukraine, 1986; Tokaimura, Japan, 1997/1999; Fukushima, Japan, 2011. Radiological emergencies can include: Goiania, Brasil, 1987; Soreq, Israel, 1990; Gilan, Iran, 1996; Samut Prakarn, Thailand, 2000; Cochabamba, Bolivia 2002; Chilca, Peru 2012; Nueva Aldea, Chile 2009)

8.	Range statement	This Unit may be assessed in a simulated environment under conditions that safely replicate workplace emergency situations
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9.	Assessment advice	<p>Assessment must be conducted in an environment where evidence gathered by Learners demonstrates consistent performance in conditions that are safe and replicate a potential accident workplace.</p> <p>Assessment methods can include:</p> <ul style="list-style-type: none"> • Scenario setting • Presentations • Virtual simulations and modelling • Written material and report • Checklists and comparative charts • Statements • Topologies • Evidence of written reports summarising results of candidate skills assessment • Oral or written questioning <p>Evidence:</p> <ul style="list-style-type: none"> • Verbal or written questioning to assess candidate’s knowledge • Summative assessment to ensure consistency of performance in a range of contexts • Formative evidence for this unit can be written, oral or diagrammatic • Formative evidence ought to assist learners to learn and increase performance • Summative assessment is based on real live work situations or simulated situations <p>Assessors and verifiers must satisfy NQC/VETAC requirements with subject matter expert related to radiation emergency assessment.</p> <p>All evidence submitted by the learner must be verified and documented by the assessor for future evaluation purpose.</p> <p>Summative assessment is based on real work situations or simulated situations.</p> <p>Assessment judgements are based on evidence that is documented as valid, authentic, current, and sufficient, and are consistent with previous judgements made on similar evidence.</p> <p>Re-submissions are permissible</p>		
10.	Entry requirements	10a) Mandatory	None	
		10b) Advisory	None	
11.	Grading	Percentile 100%: ____%		
		80% is the pass mark		

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12.	Resources required	<p>Reference materials related to this unit, for consideration, and which correlate with international nuclear industry acceptance, for working in a workplace environment include:</p> <p>relevant and contemporary reference documents, manuals, instructions, procedures, standards;</p> <p>relevant industry policies and organizational procedures</p> <p>Other reference documents, including:</p> <p>Regulation for Radiation Protection and Predisposal Radioactive Waste Management in Nuclear Facilities (FANR-REG-11)</p> <p>Regulation for Emergency Preparedness and Response for Nuclear Facilities (FANR-REG-12)</p> <p>Requirements for Off-site Emergency Plans for Nuclear Facilities (FANR-REG-15)</p> <p>Basic Safety Standards for Facilities and Activities involving Ionizing Radiation other than in Nuclear Facilities (FANR-REG-24)</p> <p>IAEA Safety Standards Series, Building Competence in Radiation Protection and the Safe Use of Radiation Sources, No. RS-G-1.4</p> <p>IAEA Safety Standards Series, Preparedness and Response for a Nuclear or Radiological Emergency, No. GS-R-2</p> <p>IAEA Safety Standards, Preparedness and Response for a Nuclear or Radiological Emergency, No. GSR Part 7</p>	
13.	Relevant CoreLife Skills	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Collecting, analysing, organising and applying information in a given context <input checked="" type="checkbox"/> Communicating information, concepts and ideas <input checked="" type="checkbox"/> Initiating and organising self and activities incl. motivation, exploration and creativity <input checked="" type="checkbox"/> Working with others in teams incl. leadership <input checked="" type="checkbox"/> Solving problems incl. using mathematical ideas and techniques <input type="checkbox"/> Applying information and communication technology (ICT) <input type="checkbox"/> Participating in social and civic life incl. ethical practice 	
14.	Industry sector	14a) Sector	Community, health and social services
		14b) Sub-sector	Health Services
15.	Developing organisation	RNDC in Radiation Protection	
16.	Approval date	01/06/2023	
17.	Review date	31/05/2028	



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NQC UAE-NOS TEMPLATE

For use by developers of UAE national occupational standards (UAE-NOS) packaged as unit standards

1.	Title	Instigate protective measures to safeguard life – Nuclear and Radiation Emergency Worker Tier 1			
2.	Code	HLT04095NU23			
3.	Credit and duration	3a) Credit value	1	3b) Duration	15
4.	Aim	This unit aims to provide Radiation Emergency Workers with basic knowledge and skills to respond effectively to preserving life during the first phase of a nuclear or a radiological emergency situation			
5.	Learning outcomes	At the end of this unit, learners will be able to:			
		LO01	Demonstrate understanding of initial response measures to safeguard life during a radiation emergency		
		LO02	Demonstrate ability to use personal protective equipment and respiratory protective equipment		
6.	QF <i>Emirates</i> Level	Level 4			
7.	Outcomes, performance criteria, and evidence requirements				

Outcome 1 LO01

Performance criteria

PC01	Explain the importance of prioritizing life-saving emergency care activities
PC02	Discuss the importance of working effectively as an integral part of a disciplined team with particular emphasis on preserving life during radiation emergency situations
PC03	Explain procedures to evacuate injured persons from an immediate radiation danger
PC04	Identify the key considerations for securing the scene in a radiation emergency situation

Specific evidence requirements

Candidate must demonstrate knowledge and understanding of the basic principles of preserving life in a radiation emergency.

The following information is provided to aid the training provider in developing the course work:

PC1.02: This can include evacuating staff as required, provision of first aid and medical care, accounting for all personnel and implementation of immediate corrective actions to prevent further incidents from occurring

PC1.04: Include preservation of evidence to aid investigation and help identify root and contributory causes. Help identify any system or equipment failures. Provide feedback for education purposes, e.g. lessons-learned

Outcome 2 LO02

Performance criteria

PC01	Select the appropriate personal protective equipment for use in a radiation emergency situation
PC02	Select the appropriate respiratory protective equipment for use in a radiation emergency

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PC03	Explain the general application and limitations of an air-purifying respirator
PC04	Explain the general application and limitations of an air-supplying respirator
PC05	Demonstrate the ability to correctly don, use and doff personal protective equipment for use in a radiation emergency
PC06	Demonstrate the ability to correctly perform preoperational checks, don, use and doff respiratory protective equipment
PC07	Describe the effects on normal work practices of wearing personal and respiratory protective equipment, and the physical individual limitations that arise from their prolonged use

Specific evidence requirements

Candidates shall demonstrate knowledge, understanding and practical ability in correctly selecting and using both personal and respiratory protection.

Demonstration must include practical tests on various equipment, in a protected environment.

The following information is provided to aid the training provider in developing the course work

PC2.07: Candidates must understand and explain how wearing personal and respiratory protection equipment may alter the normal perception of space, may reduce the speed at which basic work activities can be performed, and may significantly increase fatigue. Candidates must understand and explain the increase in breathing difficulty, due to the use of various respiratory protection. Candidates must be able to explain the consequences of prolonged use of some respiratory protection, and the potential risks.

8.	Range statement	This Unit may be assessed in a simulated environment under conditions that safely replicate workplace emergency situations. Practical experience in donning, using and doffing personal and respiratory protective equipment must be provided.
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9.	Assessment advice	<p>Assessment must be conducted in an environment where evidence gathered by Learners demonstrates consistent performance in conditions that are safe and replicate a potential accident workplace.</p> <p>Assessment methods can include:</p> <ul style="list-style-type: none"> • Scenario setting • Presentations • Virtual simulations and modelling • Written material and report • Checklists and comparative charts • Statements • Topologies • Evidence of written reports summarising results of candidate skills assessment • Oral or written questioning <p>Evidence:</p> <ul style="list-style-type: none"> • Verbal or written questioning to assess candidate’s knowledge • Summative assessment to ensure consistency of performance in a range of contexts • Formative evidence for this unit can be written, oral or diagrammatic • Formative evidence ought to assist learners to learn and increase performance • Summative assessment is based on real live work situations or simulated situations <p>Assessors and verifiers must satisfy NQC/VETAC requirements with subject matter expert related to radiation emergency assessment.</p> <p>All evidence submitted by the learner must be verified and documented by the assessor for future evaluation purpose.</p> <p>Summative assessment is based on real work situations or simulated situations.</p> <p>Assessment judgements are based on evidence that is documented as valid, authentic, current, and sufficient, and are consistent with previous judgements made on similar evidence.</p> <p>Re-submissions are permissible</p>		
10.	Entry requirements	10a) Mandatory	None	
		10b) Advisory	None	
11.	Grading	Percentile 100%: ____%		
		80% pass mark		

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12.	Resources required	<p>Reference materials related to this unit, for consideration, and which correlate with international nuclear industry acceptance, for working in a workplace environment include:</p> <p>relevant and contemporary reference documents, manuals, instructions, procedures, standards;</p> <p>relevant industry policies and organizational procedures</p> <p>Other reference documents, including:</p> <p>Regulation for Radiation Protection and Predisposal Radioactive Waste Management in Nuclear Facilities (FANR-REG-11)</p> <p>Regulation for Emergency Preparedness and Response for Nuclear Facilities (FANR-REG-12)</p> <p>Requirements for Off-site Emergency Plans for Nuclear Facilities (FANR-REG-15)</p> <p>Basic Safety Standards for Facilities and Activities involving Ionizing Radiation other than in Nuclear Facilities (FANR-REG-24)</p> <p>IAEA Safety Standards Series, Building Competence in Radiation Protection and the Safe Use of Radiation Sources, No. RS-G-1.4</p> <p>IAEA Safety Standards Series, Preparedness and Response for a Nuclear or Radiological Emergency, No. GS-R-2</p> <p>IAEA Safety Standards, Preparedness and Response for a Nuclear or Radiological Emergency, No. GSR Part 7</p>	
13.	Relevant CoreLife Skills	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Collecting, analysing, organising and applying information in a given context <input checked="" type="checkbox"/> Communicating information, concepts and ideas <input checked="" type="checkbox"/> Initiating and organising self and activities incl. motivation, exploration and creativity <input checked="" type="checkbox"/> Working with others in teams incl. leadership <input checked="" type="checkbox"/> Solving problems incl. using mathematical ideas and techniques <input type="checkbox"/> Applying information and communication technology (ICT) <input type="checkbox"/> Participating in social and civic life incl. ethical practice 	
14.	Industry sector	14a) Sector	Community, health and social services
		14b) Sub-sector	Health Services
15.	Developing organisation	RNDC in Radiation Protection	
16.	Approval date	01/06/2023	
17.	Review date	31/05/2028	



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NQC UAE-NOS TEMPLATE

For use by developers of UAE national occupational standards (UAE-NOS) packaged as unit standards

1.	Title	Perform decontamination on people and facilities – Nuclear and Radiation Emergency Worker Tier 1			
2.	Code	HLT04096NU23			
3.	Credit and duration	3a) Credit value	1	3b) Duration	15
4.	Aim	This unit aims to provide Radiation Emergency Workers with basic knowledge and skills to perform decontamination of people or facilities during the first phases of a nuclear or a radiological emergency situation			
5.	Learning outcomes	At the end of this unit, learners will be able to:			
		LO01	Describe the fundamentals of radioactive contamination		
		LO02	Describe how to decontaminate people and facilities		
6.	QF <i>Emirates</i> Level	Level 4			
7.	Outcomes, performance criteria, and evidence requirements				

Outcome 1 LO01

Performance criteria

PC01	Describe the various types of radioactive contamination during an emergency situation
PC02	Describe various radioactive contamination matrices
PC03	Describe quantities and units used to quantify radioactive contamination in various matrices
PC04	Explain the use and purpose of iodine thyroid blocking during exposure to radioactive iodine

Specific evidence requirements

Candidate must demonstrate basic knowledge of the principles of radioactive contamination in a radiation emergency.

The following information is provided to aid the Training Provider in developing the course work:

PC1.01: fixed, removable, surface, airborne, volume, etc. radioactive contamination

PC1.02: surface (concrete, soil, floor, tables, etc.), volume (air, liquid)

PC1.03: Candidates should demonstrate to understand the magnitude of radioactive contamination when expressed in Bq/cm², Bq/km², Bq/L, Bq/m³, and any other units used in a specific context

Outcome 2 LO02

Performance criteria

PC01	Describe the purpose and organization of decontamination activities
PC02	Describe some techniques used to prevent the spread of contamination during decontamination work
PC03	Describe basic decontamination procedures of people, and specifically of emergency workers

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PC04	Describe basic practices for the decontamination of assets and facilities
PC05	Describe how to select and prepare a location for decontamination
PC06	Describe basic protocols in safe handling radioactive waste
PC07	Explain basic protocols in supporting other individuals and other agencies involved in radiation emergencies

Specific evidence requirements

Candidate must demonstrate basic knowledge and understanding of managing decontamination and safely disposing of radioactive waste materials during a radiation emergency.

The following information is provided to aid the Training Provider in developing the course work:

PC2.02: e.g.: transit points, use of benches, confinement, pressure cascades, etc.

PC2.03: emergency workers' clothing and other equipment, including protective and respiratory protection equipment, they may be using

PC2.06: this also includes minimization, segregation, labeling, storage and transportation

8.	Range statement	This Unit may be assessed in a simulated environment under conditions that safely replicate workplace emergency situations. Practical experience in dealing with decontamination work and radioactive waste management must be provided.
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9.	Assessment advice	<p>Assessment must be conducted in an environment where evidence gathered by Learners demonstrates consistent performance in conditions that are safe and replicate a potential accident workplace.</p> <p>Assessment methods can include:</p> <ul style="list-style-type: none"> • Scenario setting • Presentations • Virtual simulations and modelling • Written material and report • Checklists and comparative charts • Statements • Topologies • Evidence of written reports summarizing results of candidate skills assessment • Oral or written questioning <p>Evidence:</p> <ul style="list-style-type: none"> • Verbal or written questioning to assess candidate’s knowledge • Summative assessment to ensure consistency of performance in a range of contexts • Formative evidence for this unit can be written, oral or diagrammatic • Formative evidence ought to assist learners to learn and increase performance • Summative assessment is based on real live work situations or simulated situations <p>Assessors and verifiers must satisfy NQC/VETAC requirements with subject matter expert related to radiation emergency assessment.</p> <p>All evidence submitted by the learner must be verified and documented by the assessor for future evaluation purpose.</p> <p>Summative assessment is based on real work situations or simulated situations.</p> <p>Assessment judgements are based on evidence that is documented as valid, authentic, current, and sufficient, and are consistent with previous judgements made on similar evidence.</p> <p>Re-submissions are permissible</p>		
10.	Entry requirements	10a) Mandatory	None	
		10b) Advisory	None	
11.	Grading	Percentile 100%: ____%		
		80% pass mark		

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12.	Resources required	<p>Reference materials related to this unit, for consideration, and which correlate with international nuclear industry acceptance, for working in a workplace environment include:</p> <p>relevant and contemporary reference documents, manuals, instructions, procedures, standards;</p> <p>relevant industry policies and organizational procedures</p> <p>Other reference documents, including:</p> <p>Regulation for Radiation Protection and Predisposal Radioactive Waste Management in Nuclear Facilities (FANR-REG-11)</p> <p>Regulation for Emergency Preparedness and Response for Nuclear Facilities (FANR-REG-12)</p> <p>Requirements for Off-site Emergency Plans for Nuclear Facilities (FANR-REG-15)</p> <p>Basic Safety Standards for Facilities and Activities involving Ionizing Radiation other than in Nuclear Facilities (FANR-REG-24)</p> <p>IAEA Safety Standards Series, Building Competence in Radiation Protection and the Safe Use of Radiation Sources, No. RS-G-1.4</p> <p>IAEA Safety Standards Series, Preparedness and Response for a Nuclear or Radiological Emergency, No. GS-R-2</p> <p>IAEA Safety Standards, Preparedness and Response for a Nuclear or Radiological Emergency, No. GSR Part 7</p>		
13.	Relevant CoreLife Skills	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Collecting, analysing, organising and applying information in a given context <input checked="" type="checkbox"/> Communicating information, concepts and ideas <input checked="" type="checkbox"/> Initiating and organising self and activities incl. motivation, exploration and creativity <input checked="" type="checkbox"/> Working with others in teams incl. leadership <input checked="" type="checkbox"/> Solving problems incl. using mathematical ideas and techniques <input type="checkbox"/> Applying information and communication technology (ICT) <input type="checkbox"/> Participating in social and civic life incl. ethical practice 		
14.	Industry sector	14a) Sector	Community, health and social services	
		14b) Sub-sector	Health Services	
15.	Developing organisation	RNDC in Radiation Protection		
16.	Approval date	01/06/2023		
17.	Review date	31/05/2028		



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NQC UAE-NOS TEMPLATE

For use by developers of UAE national occupational standards (UAE-NOS) packaged as unit standards

1.	Title	Conduct radiation measurements during emergency situations – Nuclear and Radiation Emergency Worker Tier 1			
2.	Code	HLT04097NU23			
3.	Credit and duration	3a) Credit value	1	3b) Duration	15
4.	Aim	This unit aims to provide Radiation Emergency Workers with basic knowledge and skills to properly conduct radiation measurements during the early phases of a radiation emergency situation			
5.	Learning outcomes	At the end of this unit, learners will be able to:			
		LO01	Select the appropriate radiation detection instrument		
		LO02	Perform basic radiation measurements		
		LO03	Demonstrate use and management of personal dosimeters		
6.	QF <i>Emirates</i> Level	Level 4			
7.	Outcomes, performance criteria, and evidence requirements				

Outcome 1	LO01
Performance criteria	
PC01	Describe and select the appropriate instrument/technique for the radiation field to be measured
PC02	Explain how to check the status and functioning of the instrumentation, prior to commencement of testing
PC03	Describe how to measure radiation fields and samples, according to applicable standards and procedures
Specific evidence requirements	
Candidate must demonstrate basic knowledge in selecting the appropriate instrument to perform basic direct radiation measurements.	

Outcome 2	LO02
Performance criteria	
PC01	Correctly use dose rate and direct contamination meters
PC02	Interpret readings of dose rate meters, for gamma and for neutron radiation
PC03	Interpret readings of a contamination meter, including to distinguish alpha from beta/gamma contamination
Specific evidence requirements	

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Candidate must demonstrate basic knowledge in performing basic direct radiation measurements and interpreting their results.

Practical experience with radiation detectors used during the early phases of emergency response must be provided.

Outcome 3 LO03

Performance criteria

PC01	Explain the function and types of personal dosimeters used during a radiation emergency situation
PC02	Describe the appropriate use of personal dosimeters
PC03	Interpret personal dosimeter readings, including various units to express radiation doses
PC04	Explain the importance to store and report personal dosimetry data in accordance with FANR Regulations

Specific evidence requirements

Candidates must demonstrate basic functional knowledge and understanding of dosimeter use and their readings during the early phases of a radiation emergency.

8.	Range statement	This Unit may be assessed in a simulated environment under conditions that safely replicate workplace emergency situations. Practical experience in dealing with instrumentation and dosimeters must be provided.
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9.	Assessment advice	<p>Assessment must be conducted in an environment where evidence gathered by Learners demonstrates consistent performance in conditions that are safe and replicate a potential accident workplace.</p> <p>Assessment methods can include:</p> <ul style="list-style-type: none"> • Scenario setting • Presentations • Virtual simulations and modelling • Written material and report • Checklists and comparative charts • Statements • Topologies • Evidence of written reports summarizing results of candidate skills assessment • Oral or written questioning <p>Evidence:</p> <ul style="list-style-type: none"> • Verbal or written questioning to assess candidate’s knowledge • Summative assessment to ensure consistency of performance in a range of contexts • Formative evidence for this unit can be written, oral or diagrammatic • Formative evidence ought to assist learners to learn and increase performance • Summative assessment is based on real live work situations or simulated situations <p>Assessors and verifiers must satisfy NQC/VETAC requirements with subject matter expert related to radiation emergency assessment.</p> <p>All evidence submitted by the learner must be verified and documented by the assessor for future evaluation purpose.</p> <p>Summative assessment is based on real work situations or simulated situations.</p> <p>Assessment judgements are based on evidence that is documented as valid, authentic, current, and sufficient, and are consistent with previous judgements made on similar evidence.</p> <p>Re-submissions are permissible</p>		
10.	Entry requirements	10a) Mandatory	None	
		10b) Advisory	None	
11.	Grading	Percentile 100%: ____%		
		80% pass mark		

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12.	Resources required	<p>Reference materials related to this unit, for consideration, and which correlate with international nuclear industry acceptance, for working in a workplace environment include:</p> <p>relevant and contemporary reference documents, manuals, instructions, procedures, standards;</p> <p>relevant industry policies and organizational procedures</p> <p>Other reference documents, including:</p> <p>Regulation for Radiation Protection and Predisposal Radioactive Waste Management in Nuclear Facilities (FANR-REG-11)</p> <p>Regulation for Emergency Preparedness and Response for Nuclear Facilities (FANR-REG-12)</p> <p>Requirements for Off-site Emergency Plans for Nuclear Facilities (FANR-REG-15)</p> <p>Basic Safety Standards for Facilities and Activities involving Ionizing Radiation other than in Nuclear Facilities (FANR-REG-24)</p> <p>IAEA Safety Standards Series, Building Competence in Radiation Protection and the Safe Use of Radiation Sources, No. RS-G-1.4</p> <p>IAEA Safety Standards Series, Preparedness and Response for a Nuclear or Radiological Emergency, No. GS-R-2</p> <p>IAEA Safety Standards, Preparedness and Response for a Nuclear or Radiological Emergency, No. GSR Part 7</p>		
13.	Relevant CoreLife Skills	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Collecting, analysing, organising and applying information in a given context <input checked="" type="checkbox"/> Communicating information, concepts and ideas <input checked="" type="checkbox"/> Initiating and organising self and activities incl. motivation, exploration and creativity <input checked="" type="checkbox"/> Working with others in teams incl. leadership <input checked="" type="checkbox"/> Solving problems incl. using mathematical ideas and techniques <input type="checkbox"/> Applying information and communication technology (ICT) <input type="checkbox"/> Participating in social and civic life incl. ethical practice 		
14.	Industry sector	14a) Sector	Community, health and social services	
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