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National Occupational Standards for Chemical, Pharmaceutical and Petro-chemical Operations

Technical Support

Approved by UKCG May 2005



**The Sector Skills Council for Chemicals, Nuclear, Oil and Gas
Petroleum and Polymers**



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Commentary for Unit 1.13:

Working effectively in a team

This unit addresses the competence required to work with others. This involves:

- those working in isolation, who need to communicate with others
- those working in groups
- accepting and clarifying responsibilities
- providing and receiving support and feedback
- working in ways which maintain your own and other's safety

There are three elements in this unit, each of which has performance standards and a knowledge base associated with it.

1.13.1 Determine and agree individual responsibilities in working with others

1.13.2 Complete work activities in conjunction with others

1.13.3 Provide and receive support and feedback

There is also a glossary of terms which appear within the unit and have a specific meaning.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Responsibility	That which is given by the appropriate authority
Authority activities	This gives the individual/s, permission to perform the
Personnel/work situation	This may include one, or a combination of: <ul style="list-style-type: none"> • one to one • group/team work • where disagreement occurs • on person to a group situation
Communicate	This may include all forms of communication including: <ul style="list-style-type: none"> • spoken • written • electronic
Documentation	This may include all types of documentation that may be used in the organisation, in relation to the activity.
Corrective action	To be aware of potential hazards involved in the process, and take corrective action when necessary, including emergency shutdown.
Problems	These include those encountered with either plant/equipment/materials/and/or personnel.
Feedback/Support	Assistance given or received within the organisation. All forms of feedback and support should be constructive.
Health, Safety and Environmental legislation	To be aware of all relevant legislation.

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ELEMENT 1.13.1 Determine and agree individual responsibilities in working with others

In carrying out this work you must:

1. Check that you have the required **authority** to complete the required activity
2. Check whether you need to inform others who may be affected by this activity
3. If required, **communicate** with others by the appropriate method
4. Check that all **personnel** have received the necessary information
5. Check that all **personnel** understand and agree to their responsibilities
6. Deal promptly with any **problems** that arise, that are your **responsibility**
7. For **problems** that you cannot solve and/or are not your **responsibility** inform the appropriate person/s
8. Follow safe working procedures at all times
9. Work within agreed time schedules
10. Complete any required **documentation** clearly and accurately

To do this you need to know

- a) the definition of authority and responsibility within the organisation
- b) how to check whether you have the required authority
- c) your personal responsibility in the operation
- d) how to check whether others need to be informed
- e) methods of communication within the organisation
- f) how to check that all parties understand what is required of them (if required)
- g) your personal responsibilities with regard to health, safety and environment
- h) what typical problems may arise and how to deal with them
- i) who to inform if you cannot solve the problem and/or it is not your responsibility
- j) the importance of keeping to agreed time schedules
- k) what documentation to use and what information needs to be recorded

ELEMENT 1.13.2 Complete work activities in conjunction with others

In carrying out this work you must:

1. Check that you understand the work activity
2. Ensure that you know and understand your **responsibility** in the activity
3. Check, when required, that all other **personnel** understand their responsibilities
4. Ensure that the activity proceeds as planned
5. Keep other relevant **personnel** informed of the progress of the activity
6. Deal promptly with any **problems** in the activity that are your responsibility

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7. Take appropriate **action** when disagreement occurs
8. Inform the appropriate person of any **problems** you cannot solve and/or are not your **responsibility**
9. Work safely at all times with regard to material, equipment and personal safety
10. Use appropriate methods of **communication**

To do this you need to know

- a) the method of work activity planned
- b) what your responsibilities are in the activity
- c) why it is important that all personnel understand what is required of them
- d) methods of monitoring the activity
- e) how to keep all relevant personnel informed of the progress of the activity
- f) how to deal with problems that are your responsibility
- g) who to contact if you cannot deal with the problem and/or it is not your responsibility
- h) what actions could be taken when disagreement occurs
- i) your personal responsibilities with regard to health, safety and environment
- j) what methods of communication to use and when to use them

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ELEMENT 1.13.3 Provide and receive support and feedback

In carrying out this work you must

1. Ensure that all **personnel** know their responsibilities
2. Use appropriate methods of **communication** to keep all **personnel** informed
3. Identify when assistance is required
4. Give assistance when required if it is within the limit of your **authority**
5. Deal with any **problems** effectively, if they are your **responsibility**
6. Inform the appropriate person when you cannot solve a **problem** and/or it is not your **responsibility**
7. Give constructive **support** and **feedback** to appropriate **personnel**
8. Receive **support** and **feedback** from **personnel**
9. Follow safe working procedures at all times
10. Complete any **documentation** clearly and accurately

To do this you need to know

- a) the meaning of responsibility and authority in the organisation
- b) methods of communication within the organisation
- c) how to identify when assistance may be required
- d) how to give assistance within your limit of authority
- e) why it is important to give constructive feedback and support in the operation
- f) how to give constructive feedback and support within the organisation
- g) why it is important to deal with problems effectively
- h) who to inform if you cannot solve the problem and /or it is not your responsibility or within your limit of authority
- i) what your personal responsibilities are with regard to health, safety and environment
- j) what documentation needs to be completed
- k) the importance of completing documentation/records accurately and clearly

Unit 3.10 : Emergency procedure

This unit addresses the competence required to comply with site/plant emergency procedures. This involves:

- raising the alarm once an emergency has been identified
- informing others
- minimising the effect of an emergency
- maintaining your own and other's safety while working

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There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

3.10.1 Raise the alarm on discovering an emergency

3.10.2 Minimise the effect of an emergency

Element 3.10.1 Raise the alarm on discovering an emergency

Performance statements

In achieving this unit you must:

- a. Activate the appropriate **alarm** on discovering the **emergency**
- b. Take **action** appropriate to the **emergency**
- c. Check the location and type of the **emergency**
- d. Provide accurate details on nature and location of the **emergency** to emergency services
- e. If necessary, alert other people to the **emergency**
- f. Try to ensure that people do not panic
- g. **Communicate** with relevant people
- h. Follow safe working procedures at all times

Knowledge and Understanding

- i. the methods of raising the alarm
- ii. why it is important to take action which is appropriate to the emergency
- iii. the consequence of taking no action
- iv. what type of action to take
- v. why it is important to check on the location of the emergency
- vi. how to provide clear and accurate details on the nature and location of the emergency
- vii. when and how to alert other personnel to the emergency
- viii. methods to try to stop panic
- ix. why it is important to communicate with relevant others
- x. methods of communication to use
- xi. why it is important to follow safe working procedures

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Element 3.10.2 Minimise the effect of an emergency

Performance statements

In achieving this unit you must:

- a. Take **action** appropriate to the **emergency**
- b. Ensure any **action** is taken promptly
- c. **Communicate** with others during the **emergency**
- d. Try to ensure that panic is minimised
- e. Assess the **risk** to yourself and others of trying to contain the **emergency**
- f. If the **risk** is not increased take appropriate **action** by following the correct procedure
- g. Minimise the effect on the **environment** by using appropriate techniques
- h. Comfort and reassure any casualties in the **emergency**
- i. Give a full and accurate report of the **emergency**
- j. Work safely at all times

Knowledge and Understanding

- i. the importance of taking the appropriate action
- ii. the importance of taking immediate action
- iii. the consequences of not taking immediate action
- iv. methods of communicating during an emergency
- v. ways to minimise panic
- vi. why it is important to contain the emergency
- vii. how to assess the risk of containing the emergency
- viii. methods of containing emergencies
- ix. why it is important to assess the risk to the environment
- x. how to minimise environmental damage
- xi. how to comfort and reassure casualties
- xii. why it is important to give a full and accurate report of the incident
- xiii. what your personal responsibilities are with regard to health, safety and environment

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Emergency

Emergencies could include:

- fire
- release/spillage of materials
- explosion
- discovery of suspect package
- discovery of injured person
- accident involving person/equipment
- major services failure

Raising the alarm

This could be done by :

- mechanical/electrical means
- notifying someone else
- shouting

Action

Other actions to be taken could include:

- emergency shut down of the plant



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- evacuation of the plant
- notifying other people
- assessing risk
- emergency first aid
- shut down of the operation

Materials	May include solids, liquids and gases.
Equipment/plant	This may include any equipment/plant where there is some interaction between items and/or people
Problems	These can relate to either personnel and/or equipment.
Documentation	Including that relating to emergencies, including reports and any other relevant documentation.
Health, safety & environmental legislation	To include relevant legislation and company policy.
Assess the hazard	To assess the likelihood of harming yourself and/or others by taking some form of action.
Communication/ Communicate	May include spoken, written and/or electronic

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is acceptable in the assessment of this unit to cover the full scope of the unit as defined by the glossary.

Commentary for Unit 1.12:

Handover

This unit addresses the competence required to handover operational responsibility, materials and/or information to others in the workplace. This involves:

- completion of handover information
- communication with incoming operator/s
- maintaining the operation of the equipment during handover
- accepting and confirming responsibility taken over
- maintaining your own and other's safety while working

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

1.12.1 Follow handover procedure

1.12.2 Confirm responsibility accepted

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There is also a glossary of terms which appear within the unit and have a specific meaning.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Materials	May include solids, liquids and gases.
Operating instructions out,	The set of instructions which describe the work to be carried out, including details of the operating parameters.
Operating parameters place	The conditions under which the processing should take place
Handover	The handing over of operational responsibility
Handover situation	May include some or all of the following: <ul style="list-style-type: none"> • at the end of a shift • during a shift at an appropriate point • illness • accident • emergency situation • exchange of responsibility during an operating procedure • exchange of information during an operating procedure • transfer of materials during an operating procedure
Handover method	May include some or all of the following methods: <ul style="list-style-type: none"> • written handover • verbal handover • electronic handover
Equipment/plant interaction	This may include equipment/plant where there is some interaction between items and/or people. Also may include a number of parameters within the operator's control, and some control instrumentation. Typical equipment within workplace area may include: <ul style="list-style-type: none"> • chemical reactors • addition tanks • phase separators • receiving vessels • pipework and pumps • film coaters • solution make-up vessels • filters and spray equipment
PPE necessary.	Personal protective equipment to be specified, when necessary.

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PTW continue with the	May include permit to work. Authority to start, and/or operation or the equivalent. Process type Batch and/or continuous processing. The following types may be included: <ul style="list-style-type: none"> • batch operations, where there are a number of batch operations running simultaneously, and also a multi-staged batch operation. . • continuous operations, such as reaction, recovery, separation and purification processes, mixing, granulating, drying and compressing.
Problems	These can relate to either personnel, materials, equipment , operating instructions and/or specifications. Where a problem requires another person, the person would be expected to report the problem to the person who has the necessary authority to deal with it.
Corrective actions	May include adjust, request assistance or shutdown.
Documentation	Including that relating to handover, and any other relevant documentation.
Conditions	Control of conditions may include: temperature, flow, humidity, pressure, ph , density and level
Responsibility confirm that	To be in charge of a certain operation, and accept and responsibility
Confidentiality have it.	Only providing information to those who are authorised to
Communicate	To include spoken, written and/or electronic.
Health, safety & environmental legislation	To include all relevant legislation and company policy.

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ELEMENT 1.12.1 Follow handover procedure

In carrying out this work you must:

1. Check that you know the required **handover method**
2. Check that if required, you have the necessary **PTW** or equivalent
3. Check that you are aware of the current **handover situation**
4. Check that the **handover** time is correct
5. Ensure that you complete any relevant handover **documentation** clearly and accurately
6. Check and confirm that the information contained in the **handover situation** is correct
7. Ensure that all relevant **handover** information is given to the incoming operator
8. **Handover** at the correct time and place
9. Maintain safe and effective operation of the **equipment** during **handover**
10. Wear appropriate **PPE**
11. **Communicate**, if required, with relevant personnel
12. Deal promptly with any **problems** that arise, reporting any which you cannot solve and/or are not your responsibility
13. Follow safe working procedures at all times

To do this you need to know

- a) handover methods, and specifically the one to be used in the operation
- b) what the current handover time and handover situation is
- c) the importance of the correct handover time and method
- d) why it is important to complete all documentation clearly and accurately
- e) the consequences of not checking and confirming handover information
- f) why it is important to give the incoming operator all relevant information
- g) the importance of knowing the correct time and place for the handover
- h) how to maintain safe and effective operation of equipment during handover
- i) the importance of communication, keeping others informed during the operation
- j) your personal responsibilities with regard to health, safety and environment
- k) what personal protective equipment to use and why
- l) the types of problems that can occur and how to recognise and deal with them
- m) who to contact if there is an unsolvable problem and/ or it is not your responsibility

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ELEMENT 1.12.2 Confirm responsibility accepted

In carrying out this work you must:

1. Check that you have the correct **handover** information
2. Check that you can interpret and understand the **handover** information
3. Clarify any concerns over the **handover** information with the appropriate person
4. Check that you have any relevant **documentation** that you may need to proceed
5. Complete any relevant **documentation** clearly and accurately
6. Check that any information is recorded correctly at time of **handover**
7. **Accept** and confirm **responsibility**, by appropriate method, after **handover** of information, responsibility and / or materials has taken place
8. **Communicate** if required with relevant personnel
9. Check that the **PTW** or equivalent, is complete (if necessary)
10. Wear appropriate **PPE**
11. Deal promptly with any **problems** in the procedure that are your responsibility
12. Inform the appropriate person of any **problems** you cannot solve and/or are not your responsibility
13. Work safely at all times
14. Ensure that security and **confidentiality** is observed where necessary

To do this you need to know

- a) the importance of confirming that you have the correct handover information
- b) how to interpret handover information
- c) why it is important to clarify any points
- d) what documentation may need to be obtained before proceeding
- e) why it is important to complete any documentation clearly and accurately
- f) methods of accepting and confirming responsibility
- g) why it may be important that the permit to work is complete
- h) why it is important to complete documentation clearly and accurately
- i) methods of communication
- j) what problems may occur in the operation and how to deal with them
- k) who to report to with unsolvable problems and/or those which are not your responsibility
- l) your personal responsibilities with regard to health, safety and environment
- m) when and why PPE needs to be worn
- n) when it may be important to observe security/confidentiality

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Commentary for Unit 2.10:

Clean and prepare complex items of plant and equipment for production

This unit addresses the competence required to clean the area and /or equipment to prepare for production . This involves:

- dismantling of equipment
- cleaning of equipment
- re-instating the equipment
- confirming the status of the plant and/or equipment
- liaising with maintenance personnel where appropriate
- maintaining your own production and other's safety while working

There are three elements in this unit, each of which has performance standards and a knowledge base associated with it.

2.10.1 Clear, clean plant, equipment and area of process

2.10.2 Liase with relevant personnel

2.10.3 Confirm the status of plant, equipment and area after cleaning

There is also a glossary of terms which appear within the unit and have a specific meaning.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Materials	May include solids, liquids and gases.
Operating instructions/specification	The set of instructions which describe the work to be carried out, including details of the parameters for doing so.
Dismantling operations	May include, within limits of own authority: <ul style="list-style-type: none"> • disconnecting • isolating • disassembling
Cleaning operations	May include the removal of solids, liquids and gases by appropriate procedures.
Equipment/plant	This may include equipment/plant where there is some interaction between items and/or people. Also may include single items of equipment comprising a few parts. Types of equipment to be cleaned may include heat exchangers, dryers, filtration systems, tablet presses and sterile filtration units.
PPE	Personal protective equipment to be specified, when necessary.
Problems	These may relate to either materials, equipment, personnel and/or specifications.
Corrective actions	May include adjust, request assistance or shutdown.
Documentation	May include any relevant documentation.
Communication/Communicate	May include either, spoken, written and/or electronic.
Liaison	To keep personnel informed throughout the operation.
Maintenance	Work which may be carried out to enable the process to run as smoothly as possible.
Health, safety and environmental legislation	May include any relevant legislation and company policy
Authority/Authorisation	The permission that is needed to complete the task.
SOP	Standard Operating Procedure. The method of completing a task according to stated guidelines in the organisation.
Current Status	Confirmation of plant and equipment

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Relevant personnel
and any

May include process, utilities, materials handling, laboratory
other relevant personnel.

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ELEMENT 2.10.1 Clear, clean plant, equipment and area of process

In carrying out this work you must:

1. Check that you have the required **authorisation** to proceed
2. Check that you have the **specification** detailing the work to be carried out
3. Identify correct **plant** and/or **equipment** to be isolated
4. Isolate **plant** and/or **equipment** according to SOP
5. If required, dismantle **plant** and/or **equipment** correctly
6. Clear and clean all residual **materials** and/or waste from the area to the required standard
7. If required re-assemble **plant** and/or **equipment** ready for the next operation
8. Wear specified **PPE** if necessary
9. Deal promptly with any **problems** that arise, reporting any which you cannot solve and/or are not your responsibility
10. Follow safe working procedures when using **equipment** and dealing with hazardous materials

To do this you need to know

- a) the importance of having the necessary authorisation to proceed
- b) the meaning of terms used in specifications concerned with cleaning
- c) the importance of identifying the correct plant/equipment
- d) methods of isolating plant/equipment
- e) how to handle equipment safely in ways that protect yourself and others from risk
- f) methods of cleaning plant/equipment
- g) how to dismantle and reassemble plant and/or equipment when necessary
- h) your personal responsibilities with regard to health, safety and environment
- i) what personal protective equipment to use and why
- j) the types of problems that can occur and how to recognise and deal with them
- k) who to contact if there is an unsolvable problem and/ or it is not your responsibility

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ELEMENT 2.10.2 Liase with relevant personnel

In carrying out this work you must:

1. Ensure that relevant personnel are clear about the nature of the **plant/equipment** to be maintained
2. **Communicate** effectively with relevant personnel
3. Explain to relevant personnel about any **problems** and current status of the **plant/equipment**
4. Give warnings as appropriate about specific hazards and/ or safety requirements
5. Ensure that when the **plant/equipment** is received from maintenance you are clear about the work undertaken
6. Record information accurately on correct documentation
7. Wear appropriate **PPE**
8. Deal promptly with any **problems** in the procedure that are your responsibility
9. Inform the appropriate person of any **problems** you cannot solve and/or are not your responsibility
10. Work safely at all times with regard to **material, equipment** and personal safety

To do this you need to know

- a) how to contact the appropriate maintenance personnel
- b) the importance of communication through the procedure
- c) why it is important to explain about the current status of the plant/ equipment
- d) why it is important to give warnings about specific hazards and /or safety issues
- e) when and why PPE needs to be worn
- f) what problems may occur and how to deal with them
- g) who to report to with unsolvable problems and/or those which are not your responsibility
- h) your personal responsibilities with regard to health, safety and environment
- i) methods of documentation that are used
- m) why it is important to complete documentation accurately

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ELEMENT 2.10.3 Confirm the status of plant, equipment and area after cleaning

In carrying out this work you must

1. Ensure that all **plant/equipment** is confirmed as being clean and operational
2. Check the status of all **plant/equipment**, identifying any areas of concern
3. Deal promptly with any **problems** that arise, reporting any which you cannot solve
4. Ensure that the condition of all **plant/equipment** is recorded accurately
5. Confirm that the area is in a suitable condition for the next activity
6. **Communicate** with relevant personnel when required
7. Wear **PPE** if appropriate
8. Follow safe working procedures at all times
9. Complete any **documentation** correctly

To do this you need to know

- a) Why it is important to check that plant and equipment is clean and operational
- b) the importance of checking the status of the plant and equipment
- c) why it is important to identify any 'areas of concern'
- d) why it is important to record all information accurately
- e) why it is important to confirm and record the status of the plant and equipment
- f) why it is important to communicate with relevant personnel
- g) what problems may occur and how to deal with them
- h) who to report to if you cannot solve problems and/or they are not your responsibility
- i) what your personal responsibilities are with regard to health, safety and environment
- j) what documentation needs to be completed and how

Unit 3.7 : Plan to maintain product integrity

NB This unit is a tailored version of a Level 3 LATA unit produced by the ST & M Council and was originally designated Unit 2.

This unit is for those with responsibility for the detailed planning of sampling and testing procedures which have to be produced as a result of the initial technical plan. This overall technical plan may have been produced by a different person. It describes competences involved in implementing the technical components of the plan. It is designed for technical experts inside the organisation who devise specifications and procedures to be followed when conducting sampling and testing.

Sampling and testing procedures may be developed, adapted from existing procedures and standards or existing procedures assessed for their suitability and adopted unchanged.

Customers for the plans can be either external to the organisation or internal, e.g. other departments within the organisation.

The unit states the competences required in:



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- defining what constitutes a representative sample
- establishing the conditions for sampling
- developing a sampling procedure
- identifying the properties to be tested for
- developing a testing procedure.

Possible contexts in which these competences could be used include:

- establishing a procedure for sampling effluent levels
- developing procedures for where and how materials will be tested for strength
- selecting test procedures to apply to new materials being prepared for an external customer.

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

- Plan sampling requirements
- Plan testing requirements

The unit will be assessed by applying the Evidence Requirements stated in the introduction to these standards and the specific assessment guidance attached to each Element.

The following unit-wide knowledge will be assessed via a generic knowledge bank and assessor supplementary questioning:

- Principles of planning.
- Safety, health and environmental requirements and procedures for sampling and testing.
- Calibration requirements for equipment.
- Principles of sampling and testing systems and techniques.
- Requirements regarding handling, storage and disposal of materials.

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Element 3.7.1 Plan sampling requirements

Performance statements

In achieving this unit you must:

- a. Accurately define the characteristics of a representative sample
- b. Define the **conditions** under which the sample is to be obtained
- c. Accurately assess the appropriateness and accessibility of the sampling site
- d. Decide the sampling points and frequency of sample taking in order to provide a
- e. Representative sample
- f. Identify appropriate equipment
- g. Identify appropriate sampling **procedures** and incorporate into **testing plan**
- h. Incorporate into the plan the procedures for maintaining the integrity of the sample
- i. Identify hazards and accurately assess risks
- j. Define with **testing plan** the system for correct disposal of sample in accordance with
- k. safe
- l. operating procedures
- l. Make plans to deal with contingencies during sample taking
- m. Ensure **testing plan** contains all relevant information in a form usable by others
- n. Ensure sampling methodology meets customer requirements

Knowledge and Understanding

- i. the characteristics of a representative sample in terms of correlation of sample to source; variability; properties; size; location
- ii. impact, of sampling method chosen upon source and sample
- iii. extent of required statistical significance
- iv. sources and methods of accessing relevant sampling standards
- v. factors influencing integrity of the sample
- vi. correct disposal; safety, health and environmental standard procedures
- vii. contingencies and how to deal with them including: equipment failure; delays; limitations to access; changes in variables affecting sample condition; safety and environmental changes.

Element 3.7.2 Plan testing requirements

Performance statements

In achieving this unit you must:

- a. Define properties to be tested for
- b. Specify appropriate **equipment**
- c. Identify appropriate procedures and incorporated into **testing plan**
- d. Accurately quantify resource requirements for testing
- e. Accurately quantify conditions for testing
- f. Ensure sample conforms with test requirements
- g. Identify hazards and accurately assess risks
- h. Define a system for correct disposal of **waste materials**
- i. Ensure **testing plan** includes procedures to deal with contingencies during testing
- j. Ensure **testing plan** contains all relevant information in a form usable by others
- k. Ensure testing methodology meets customer requirements

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Knowledge and Understanding

- i. relevant testing methods appropriate to achieve objectives
- ii. relevant test resources and their suitability
- iii. potential impact of test upon health, safety and the environment
- iv. correct disposal: environmental, health and safety procedures
- v. contingencies arising during testing and how to deal with them including: equipment failure; delays changes in variables affecting testing conditions; safety and environmental changes

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Materials	May include solids, liquids and gases.
Specification out.	The set of instructions which describe the work to be carried out. Including customer requirements, both qualitative and quantitative, and the time within which it must be completed.
Sample request	Could include the following: <ul style="list-style-type: none"> • quality assurance testing during production • later moisture content testing • on-site sample
Sampling plan	Contains all relevant information. Could include: <ul style="list-style-type: none"> • conditions • sampling method • access • location • timing • frequency • duration • recording methods
Testing request	Could include the following: <ul style="list-style-type: none"> • conducting density/moisture tests • establishing liquid and plastic limits • performing viscosity tests • cell identification/in-numeration
Testing plan	Contains all relevant information to be used. Could include: <ul style="list-style-type: none"> • calibration of equipment • testing method • cleanliness • environment • time • acceptable variations • recording methods

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Equipment as PPE to be specified, when necessary. Sampling equipment specified with in the specification.

Problems materials These can relate to either materials, equipment and/or and/or delivery specifications. The person carrying out this work would be expected to resolve any equipment problem for which maintenance engineers are not required. Where a problem does require a maintenance engineer, the person would be expected to report the problem to a more senior person. Other problems include, contamination, disruption and disturbance.

Documentation relevant Includes specifications, reports, schedules and any other documentation.

Conditions Control of conditions may include:

- temperature
- pressure
- flow
- level
- humidity
- density
- ph

Risk assessment To include hazardous materials and contamination.

Waste materials To include off specification product and waste materials.

Health, safety and Environmental legislation To include all relevant legislation and company policy.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

Unit 3.8 : Contribute to standard operating procedures

This unit addresses the competence required to review, evaluate and offer ideas and suggestions on procedures for the operation of plant/equipment and or related activities. This involves:

- reviewing existing procedures
- evaluating existing procedures
- offering ideas based on evaluation
- completing necessary documentation
- maintaining your own and other's safety while working

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There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

3.8.1 Review existing procedure/s

3.8.2. Evaluate procedure/s and offer ideas

Element 3.8.1 Review existing procedure/s

Performance statements

In achieving this unit you must:

- a. Check that you have accurate details concerning **operational requirements** for the process
- b. Analyse **operational methods** for the process
- c. Identify all the resources that are necessary for the **procedure/s**
- d. Check that the objectives of quality, quantity, cost and time are being met by the **procedure/s**
- e. Record the **operational method** accurately and clearly
- f. Ensure that all relevant **health, safety and environmental** considerations are covered
- g. Wear appropriate **PPE**
- h. **Communicate**, if required, with relevant personnel
- i. Deal promptly with any **problems** that arise, reporting any which you cannot solve and/or are not your responsibility
- j. Follow safe working procedures at all times

Knowledge and Understanding

- i. how to obtain details of operational requirements for the process
- ii. how to analyse the various operational methods
- iii. the importance of ensuring all objectives are met by the method
- iv. how to identify what resources are needed for the procedure
- v. how to record all information accurately and clearly
- vi. the importance of communication, and of keeping others informed during the operation
- vii. the importance of covering all health, safety and environmental considerations
- viii. your personal responsibilities with regard to health, safety and environment
- ix. what personal protective equipment to use and why
- x. the types of problems that may occur and how to recognise and deal with them
- xi. who to contact if there is an unsolvable problem and/ or it is not your responsibility

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Element 3.8.2 Evaluate procedure/s and offer ideas

Performance statements

In achieving this unit you must:

- a. Evaluate selected **operational procedure/s**
- b. Ensure that required objectives are being met by existing **procedure/s**
- c. If required objectives are not being met, investigate other methods of **procedure/s**
- d. When necessary, submit **recommendations** to appropriate **authority**
- e. Ensure that all relevant **health, safety and environmental** considerations are covered
- f. Record the suggested method of improvement of **operational method** accurately and clearly
- g. **Communicate** with all relevant personnel
- h. Record information accurately using correct **documentation**
- i. Wear appropriate **PPE**
- j. Deal promptly with any **problems** that are your responsibility
- k. Inform the appropriate person of any **problems** you cannot solve and/or are not your responsibility
- l. Work safely at all times with regard to **materials, equipment/plant** and personal safety

Knowledge and Understanding

- i. the required objectives of the operation
- ii. methods of evaluating operational procedures
- iii. the importance of ensuring all objectives are met by the operational procedure/s
- iv. how to evaluate various operational methods
- v. the importance of, and how to select the most appropriate method
- vi. how to make recommendations on procedure/s, if required
- vii. the importance of keeping all relevant personnel informed
- viii. the importance of keeping clear and accurate documentation
- ix. who to submit recommendations to
- x. the importance of covering all health, safety and environmental considerations
- xi. who to report to with unsolvable problems and/or those which are not your responsibility
- xii. your personal responsibilities with regard to health, safety and environment
- xiii. when and why PPE needs to be worn

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Operational requirement	What is required by the operation.
Operational method	The preferred method /way of operating according to best practice and equipment operating instructions.
Procedure/s	May include <ul style="list-style-type: none"> • new and/or revised <i>procedures for the operation of equipment/plant. (At least as complex as a single unit operation.)</i> • related activities such as sampling, testing, cleaning etc.

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SOP	<p>Standard operating procedure. The set of instructions that describe the operational requirements for the work to be carried out, including details of the operating instructions/methods. If followed, the required organisational objectives should be more easily achieved in the following areas:</p> <ul style="list-style-type: none"> • quantity • quality • cost • time • safety, health and environment
Operating/control parameters	The conditions under which the SOP should take place
Operating conditions	<p>Control of conditions may include:</p> <ul style="list-style-type: none"> • temperature, flow, humidity, pressure, density, ph and level
Operational methods the type	<p>May include the different types of operational methods for of plant/equipment or activity to be used.</p>
Equipment/plant	<p>This may include equipment/plant where there is some interaction between items and/or people. Also may include a number of parameters within the operator's control, and some control instrumentation.</p> <p>Typical equipment may include:</p> <ul style="list-style-type: none"> • chemical reactors • addition tanks • phase separators • receiving vessels • pipework and pumps • film coaters • solution make-up vessels • filters and spray equipment
PPE	Personal protective equipment to be specified, where necessary.
PTW	May include permit to work. Authority to start, and/or continue with the operation or the equivalent.
Process type/operations	<p>Batch and/or continuous processing. The following types may be included:</p> <ul style="list-style-type: none"> • batch operations, where there may be a number of batch operations running simultaneously, and also may be multi-staged batch operation. . • continuous operations, such as reaction, recovery, separation and purification processes, mixing, granulating, drying and compressing.

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- Problems** These can relate to either people and or equipment. Obtaining relevant authority to proceed, drafting, testing, evaluating, obtaining final approval.
- Documentation** May include that relating to drafting ,evaluating and obtaining approval, and any other relevant documentation.
- Communication/ Communicate** May include either written, spoken and/or electronic
- Authority** *The method in an organisation whereby permission is given to continue and/or proceed.*
- Personnel** Any other people in the organisation who are relevant to the process.
- Health, safety & environment** To include all relevant legislation and company policy.
- Recommendations** These may include some or all of the following:
- improving quality
 - improving quantity
 - reducing costs
 - safety aspects
 - environmental aspects
 - improving time scales

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

Unit 3.11 : Solving process problems

This unit addresses the competence required to solve process problems. This involves:

- finding out the nature of process quality problems
- checking out the significance of process quality problems
- deciding what action needs to be taken when a problem arises
- making sure that the right actions are carried out, either by yourself or by calling on others
- assessing how effective the actions taken have been

There are three elements in this unit, each of which has performance standards and a knowledge base associated with it.

- 3.11.1 Determine the nature and significance of process problems
- 3.11.2 Diagnose faults/causes and select solutions to process problems
- 3.11.3 Implement and evaluate chosen solutions

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Element 3.11.1 Determine the nature and significance of process problems

Performance statements

In achieving this unit you must:

- a. Promptly identify when a **problem** has occurred
- b. Gather enough information to be able to accurately identify the sort of **problem** that has occurred
- c. Use the correct criteria to decide whether the **problem** needs immediate action or whether it can be allowed to continue until a more convenient time before dealing with it
- d. Use the correct criteria and a logical approach to decide on the likely cause of the **problem**
- e. Use the correct criteria to decide whether the assistance of others will be needed to deal with the **problem**
- f. Wear **PPE** when appropriate
- g. Work safely at all times

Knowledge and Understanding

- i. what the main functions are of process equipment and systems, how the various parts of a system interact, and what types of services used by process equipment and systems
- ii. what materials are used in different processes, what happens to them as they are processed, and why they have to be prepared
- iii. what working practices and authorisations apply, the lines of communication and procedures that should be followed in a given situation and why it is important to work within the 'rules' of the organisation
- iv. what should the readings be, what readings to expect and why, what process control involves, the sorts of problems that can arise with the process and what early warning signs there are, what interventions should be applied, when and by whom, what process control records are kept and why it is important that these are complete and accurate
- v. what level of monitoring is required by different processes, what information to gather and when, how to compare data with expected values, the importance of following specified monitoring procedures, and when a process problem should be considered minor and when significant
- vi. the sorts of records kept, how to complete them, where they are stored and who has access to them
- vii. when and how to wear appropriate PPE
- viii. what your personal responsibilities are with regard to health and safety

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Element 3.11.2 Diagnose faults/causes and select solutions to process problems

Performance statements

In achieving this unit you must:

- a. Use all relevant information to help identify possible **faults and causes**
- b. Investigate **possible faults and causes** of production **problems**
- c. Diagnose **possible faults and causes** and select appropriate action
- d. Take decisions and set them in motion without any unnecessary delay
- e. Choose a course of action which will safely limit unwanted effects on the system and process
- f. Modify the actions taken if the **problem** changes or they do not work as intended
- g. Provide those carrying out remedial actions with enough detail to ensure that the **problem** is dealt with fully and effectively
- h. Maintain safety standards at all times
- i. Keep accurate and complete **documentation** on the actions taken
- j. Work safely at all times

Knowledge and Understanding

- i. what the main functions are of process equipment and systems, how the various parts of a system interact, and what types of services used by process equipment and systems
- ii. what materials are used in different processes, what happens to them as they are processed, and why they have to be prepared
- iii. what working practices and authorisations apply, the lines of communication and procedures that should be followed in a given situation and why it is important to work within the 'rules' of the organisation
- iv. what should the readings be, what readings to expect and why, what process control involves, the sorts of problems that can arise with the process and what early warning signs there are, what interventions should be applied, when and by whom, what process control records are kept and why it is important that these are complete and accurate
- v. what level of monitoring is required by different processes, what information to gather and when, how to compare data with expected values, the importance of following specified monitoring procedures, and when a process problem should be considered minor and when significant
- vi. the sorts of records kept, how to complete them, where they are stored and who has access to them
- vii. what agreed health and safety procedures relate to controlling risks to health and safety and the process the environment
- viii. what your personal responsibilities are with regard to health and safety

Element 3.11.3 Implement and evaluate chosen solutions

Performance statements

In achieving this unit you must:

- a. Implement chosen **solution/s** within the limits of your **authority**
- b. The implementation of the chosen **solution** should result in operating conditions being restored without unduly delaying the schedule, without compromising quality and safety and without wasting resources
- c. Gather sufficient information to allow you to accurately monitor how effective a **solution** is in dealing with the problem
- d. Carry out assessments within a sensible timescale according to how quickly the effects of the **solution** should be apparent
- e. Continue with assessments until the **problem** has been fully resolved

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- f. Use the correct criteria in evaluating the **solution**
- g. Keep accurate and complete **documentation** on the result
- h. Identify and report any information arising during monitoring which may affect the diagnosis and response to similar **problems** in the future
- i. Make **recommendations** to the appropriate people based on the information gained from the evaluation

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Knowledge and Understanding

- i. what the limits of your authority are
- ii. why it is important that the solution results in operating conditions being restored
- iii. what the main functions are of process equipment and systems, how the various parts of a system interact, and what types of services used by process equipment and systems
- iv. what materials are used in different processes, what happens to them as they are processed, and why they have to be prepared
- v. what working practices and authorisations apply, the lines of communication and procedures that should be followed in a given situation and why it is important to work within the 'rules' of the organisation
- vi. what should the readings be, what readings to expect and why, what process control involves, the sorts of problems that can arise with the process and what early warning signs there are, what interventions should be applied, when and by whom, what process control records are kept and why it is important that these are complete and accurate
- vii. what level of monitoring is required by different processes, what information to gather and when, how to compare data with expected values, the importance of following specified monitoring procedures, and when a process problem should be considered minor and when significant
- viii. why it is logical to first investigate the most likely causes of a problem, before looking any further, and why it is important to gather sufficient information about a problem before drawing conclusions
- ix. how to read and analyse relevant data in tables, print-outs and schematics, what conventions are used in the process and the units of measurement used and what they mean

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Problems problems

Problems may arise from different causes. They can be which you can deal with directly, which may require the assistance of others, or problems which must be notified to a superior or specialist colleague. Problems may include significant or minor deviations from process quality specifications, and/or significant or minor departure of process parameters from expected norms.

Possible faults and causes

The following may cause problems:

- faults or malfunctioning of the process equipment or system
- faults or malfunctioning of control system for the process
- faults in the materials supplied to the process

Solution/s system others

Solution/s that could be carried out could involve making adjustments and changes yourself, seeking the assistance of with particular expertise, reporting the problem to a superior

Materials

May include solids, liquids and gases.



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Operating instructions/and/or specification

The set of instructions which detail the process and the quality/quantity/time outcomes for the operation. Including normal operating parameters.

Equipment/plant there is

This could be expected to include equipment/plant where some interaction between items and/or people. PPE to be specified, when necessary.

Problem materials

These can relate to either materials, equipment and/or and/or specifications. Typical production problems include:

- product contamination
- loss of yield
- equipment damage
- non-conformance
- non-achievement of specified quantity/time and/or quality requirements
- health/safety/environmental problems
- Not to include emergency shutdown.

Investigative methods To find the solution some or all of the following may be used:

- inspecting
- interviewing
- testing of materials
- testing of equipment
- trying out solutions

Authority operation.

That which is given to the person responsible for the

Documentation any

Includes any relevant reports/records/recommendations and other documentation.

Communication/ Communicate

Methods to include individually or in groups, either:

- written
- spoken
- electronic

Recommendations

These may include some or all of the following:

- improving quality
- improving quantity
- reducing costs
- safety aspects
- environmental aspects
- improving time scales

Health, safety and environmental legislation

To include all relevant legislation



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PPE

Personal Protective Equipment to be specified, when necessary

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation will only be considered relevant and acceptable in the rare or dangerous occurrences* (see below) in the assessment of this unit, to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for the rest of unit.

- *• health, safety and environmental issues
- emergency scenarios
- rare occurrences at work

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Commentary for Unit 3.2:

Control emergencies and critical situations in chemical, pharmaceutical and petro-chemical manufacture

NB This unit is a contextualised version of a unit produced by OPITO, which was originally designated Unit C5.

This unit is about controlling emergencies and critical situations. This involves:

- maintaining a state of readiness
- controlling critical situations
- co-ordinating the response to emergencies

There are three elements in this unit, each of which has performance standards and a knowledge base associated with it.

3.2.1 Maintain a state of readiness

3.2.2 Control critical situations

3.2.3 Co-ordinate the response to emergencies

There is also a glossary of terms which appear within the unit and have a specific meaning.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation will only be considered relevant and acceptable in the rare or dangerous occurrences* (see below) in the assessment of this unit, to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for the rest of unit.

- *• health, safety and environmental issues
- emergency scenarios
- rare occurrences at work

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Emergency

Emergencies could include:

- fire
- release/spillage of materials
- release/spillage of materials
- explosion
- discovery of suspect package
- discovery of injured person
- accident involving person/equipment
- major services failure

Raising the alarm

This could be done by :

- mechanical/electrical means
- notifying someone else
- shouting

Action/operational requirements

Other actions to be taken could include:

- emergency shut down of the plant
- evacuation of the plant
- notifying other people
- assessing risk
- emergency first aid
- shut down of the operation

Communication/Communicate

To include spoken, written and/or electronic.

PPE

Personal Protective Equipment

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ELEMENT 3.2.1 Maintain a state of readiness

In carrying out this work you must:

1. Effectively access current **emergency** procedures and report all anomalies
2. Identify all conditions which may affect the **emergency** response
3. Effectively hand over all safety critical information
4. Correctly take part in drills and exercises
5. Work safely in accordance with **operational requirements**

To do this you need to know

- a) how to select, use and care for PPE (to include sight/hearing protection, gloves, footwear, hard hats, respirators)
 - b) the implications of statutory (e.g. HASAWA and COSHH) and organisational requirements
 - c) how to interpret operational requirements (e.g. policies, procedures, instructions, codes of practice, standards, schedules)
 - d) emergency procedures for the installation
 - e) plant layout and its integration with other processes and systems
 - f) the internals of equipment and their function and operation
 - g) methods and consequences of isolation and depressurisation
 - h) functioning of remote process control (to include instrumentation and logic)
 - i) normal operating parameters and their tolerances
 - j) how to access and interpret drawings and manuals regarding the plant
 - k) the composition and properties of produced fluids and gases (to include toxicity, flammability, specific gravity (SG), temperature)
 - l) the reactions taking place and the effect of changes to the physical and chemical properties
 - m) the effects of changes in ambient conditions on plant operation
 - n) the principles and effect of Hydrocarbon hydrate formation, prevention and dispersion
 - o) the operation of and potential implications of the ESD control systems
 - p) the operation of and potential implications of the Fire and Gas control systems
 - q) the effect and potential implications of loss of any system and its reinstatement
 - r) consequences of emissions to the environment
 - s) how to access and interpret the status of the appropriate equipment and systems, to include detection; protection; communications; evacuation
 - t) how to access and interpret the status of operations and simultaneous operations
 - u) how to access and interpret information on weather conditions
- how to access and interpret information on the availability of key emergency response personnel

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ELEMENT 3.2.2 Control critical situations

In carrying out this work you must:

1. Identify developing and existing critical solutions
2. Activate all relevant **alarms** and take appropriate **action** to the situation
3. Effectively monitor the situation and minimise risks to personnel, process, plant and equipment
4. Report the critical situation correctly
5. Work safely in accordance with **operational requirements**

To do this you need to know

- a) how to select, use and care for PPE (to include sight/hearing protection, gloves, footwear, hard hats, respirators)
- b) the implications of statutory (e.g. HASAWA and COSHH) and organisational requirements
- c) how to interpret operational requirements (e.g. policies, procedures, instructions, codes of practice, standards, schedules)
- d) emergency procedures for the installation
- e) plant layout and its integration with other processes and systems
- f) the internals of equipment and their function and operation
- g) methods and consequences of isolation and depressurisation
- h) functioning of remote process control (to include instrumentation and logic)
- i) normal operating parameters and their tolerances
- j) how to access and interpret drawings and manuals regarding the plant
- k) the composition and properties of produced fluids and gases (to include toxicity, flammability, specific gravity (SG), temperature)
- l) the reactions taking place and the effect of changes to the physical and chemical properties
- m) the effects of changes in ambient conditions on plant operation
- n) the operation of and potential implications of the ESD control systems
- o) the operation of and potential implications of the Fire and Gas control systems
- p) the effect and potential implications of loss of any system and its reinstatement
- q) consequences of emissions to the environment
- r) the operations of and potential implications of the Emergency Shutdown control systems
- s) the operation of and potential implications of the Fire and Gas control systems

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ELEMENT 3.2.3 Co-ordinate the response to emergencies

In carrying out this work you must

1. Accurately identify and immediately take the **actions** required to make the situation safe
2. Activate all relevant **alarms**
3. Effectively **communicate** all relevant information and instructions
4. Clarify and act upon information received
5. Record critical information
6. Work safely in accordance with **operational requirements**

To do this you need to know

- a) how to select, use and care for PPE (to include sight/hearing protection, gloves, footwear, hard hats, respirators)
- b) the implications of statutory (e.g. HASAWA and COSHH) and organisational requirements
- c) how to interpret operational requirements (e.g. policies, procedures, instructions, codes of practice, standards, schedules)
- d) emergency procedures for the installation
- e) plant layout and its integration with other processes and systems
- f) the internals of equipment and their function and operation
- g) methods and consequences of isolation and depressurisation
- h) functioning of remote process control (to include instrumentation and logic)
- i) normal operating parameters and their tolerances
- j) how to access and interpret drawings and manuals regarding the plant
- k) the composition and properties of produced fluids and gases (to include toxicity, flammability, specific gravity (SG), temperature)
- l) the reactions taking place and the effect of changes to the physical and chemical properties
- m) the effects of changes in ambient conditions on plant operation
- n) the operation of and potential implications of the ESD control systems
- o) the operation of and potential implications of the Fire and Gas control systems
- p) the effect and potential implications of loss of any system and its reinstatement
- q) consequences of emissions to the environment
- r) how to react appropriately (to include make safe; isolate; shutdown; evacuate the work area; informing connecting installations and others; do nothing; activate internal emergency response teams; inform duty personnel; inform adjacent facilities; activate ESD; account for people)
- s) those who must be contacted and how to contact them

Unit 3.6 : Contribute to the maintenance of product quality



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NB This unit is a tailored version of a Combined Working Practices unit produced by PINTOG, which was originally designated Unit 3.

This unit addresses the competence required to contribute to the maintenance of product quality. This involves:

- identifying problems using guidance materials
- selecting and carrying out defined procedures to deal with a problem

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

3.6.1 Carry out quality checks

3.6.2 Deal with quality problems according to procedures

Element 3.6.1 Carry out quality checks

Performance statements

In achieving this unit you must:

- a. Accurately identify quality requirements from **operating/sampling instructions**
- b. Make the quality checks required in accordance with **operating/sampling instructions**
- c. Promptly and correctly identify quality **problems**
- d. Accurately record the details of the **problem** in the correct records
- e. Seek the advice of others when you cannot be certain about the nature of the **problem** and what to do about it
- f. **Communicate** effectively at all times
- g. Wear **PPE** when appropriate
- h. Work safely at all times

Knowledge and Understanding

- i. what materials are used in different processes, what happens to them as they are processed, and why they have to be prepared
- ii. what working practices and authorisations apply, the lines of communication and procedures that should be followed in a given situation and why it is important to work within the 'rules' of the organisation
- iii. why it is logical to first investigate the most likely causes of a problem, before looking any further, and why it is important to gather sufficient information about a problem before drawing conclusions
- iv. what quality control measurements are taken with regard to product quality, at what stages are product quality checked, and what quality control systems are in your workplace
- v. what typical problems may occur and how to deal with them in the procedure
- vi. when and how to wear PPE
- vii. what your personal responsibilities are with regard to health and safety

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Element 3.6.2 Deal with quality problems according to procedures

Performance statement

In achieving this unit you must:

- a. Segregate non complying items according to the **operating/sampling instruction**
- b. Label and record appropriately
- c. Work safely, following all **safety, health and environment (SHE)** requirements relevant to the process
- d. Deal effectively with **problems**
- e. Report any **problems** that you cannot solve and or and not your responsibility
- f. Wear PPE when appropriate
- g. **Document** all information accurately
- h. Work safely at all times

Knowledge and Understanding

- i. what materials are used in different processes, what happens to them as they are processed, and why they have to be prepared
- ii. what working practices and authorisations apply, the lines of communication and procedures that should be followed in a given situation and why it is important to work within the 'rules' of the organisation
- iii. the sorts of records kept, how to complete them, where they are stored and who has access to them
- iv. what your personal responsibilities are with regard to health and safety
- v. how to deal with typical problems
- vi. who to report unsolvable problems to
- vii. What quality control measurements are taken with regard to product quality, at what stages are product quality checked, and what quality control systems are in your workplace
- viii. When and how to wear PPE

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Materials	May include solids, liquids and gases.
Specification / operating Instructions	The set of instructions which describe the work to be carried out. Including customer requirements, both qualitative and quantitative, and the time within which it must be completed
Sample request / sampling instructions	Could include the following: <ul style="list-style-type: none"> • quality assurance testing during production • later moisture content testing • on-site sample
Sampling plan	Contains all relevant information. Could include <ul style="list-style-type: none"> • conditions • sampling method

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- access
- location
- timing
- frequency
- duration
- recording methods

Testing request

Could include the following:

- conducting density/moisture tests
- establishing liquid and plastic limits
- performing viscosity tests
- cell identification/in-numeration

Testing plan

Contains all relevant information to be used. Could include

- calibration of equipment
- testing method
- cleanliness
- environment
- time
- acceptable variations
- recording methods

Sampling equipment

Sampling equipment to include (to be completed)

Equipment

PPE to be specified, when necessary.

Problems materials

These can relate to either materials, equipment and/or and/or delivery specifications. The person carrying out this work would be expected to resolve any equipment problem for which maintenance engineers are not required. Where a problem does require a maintenance engineer, the person would be expected to report the problem to a more senior person. Other problems include, contamination, disruption and disturbance.

Documentation relevant

Includes specifications, reports, schedules and any other documentation.

Conditions

Control of conditions includes:

- temperature
- pressure
- flow
- level
- humidity
- density
- ph

Risk assessment

To include hazardous materials and contamination.

Health, safety and Environmental legislation

To include all relevant legislation and company policy.



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Quality checks

Quality checks can be carried out on both materials and products.

PPE

Personal Protective Equipment to be worn when specified.

**Communication/
Communicate**

May include spoken, written and/or electronic

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation will only be considered relevant and acceptable in the rare or dangerous occurrences* (see below) in the assessment of this unit, to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for the rest of unit.

- *• health, safety and environmental issues
- emergency scenarios
- rare occurrences at work

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Unit 3.7 : Plan to maintain product integrity

NB This unit is a tailored version of a Level 3 LATA unit produced by the ST & M Council and was originally designated Unit 2.

This unit is for those with responsibility for the detailed planning of sampling and testing procedures which have to be produced as a result of the initial technical plan. This overall technical plan may have been produced by a different person. It describes competences involved in implementing the technical components of the plan. It is designed for technical experts inside the organisation who devise specifications and procedures to be followed when conducting sampling and testing.

Sampling and testing procedures may be developed, adapted from existing procedures and standards or existing procedures assessed for their suitability and adopted unchanged.

Customers for the plans can be either external to the organisation or internal, e.g. other departments within the organisation.

The unit states the competences required in:

- defining what constitutes a representative sample
- establishing the conditions for sampling
- developing a sampling procedure
- identifying the properties to be tested for
- developing a testing procedure.

Possible contexts in which these competences could be used include:

- establishing a procedure for sampling effluent levels
- developing procedures for where and how materials will be tested for strength
- selecting test procedures to apply to new materials being prepared for an external customer.

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

- Plan sampling requirements
- Plan testing requirements

The unit will be assessed by applying the Evidence Requirements stated in the introduction to these standards and the specific assessment guidance attached to each Element.

The following unit-wide knowledge will be assessed via a generic knowledge bank and assessor supplementary questioning:

- Principles of planning.
- Safety, health and environmental requirements and procedures for sampling and testing.
- Calibration requirements for equipment.
- Principles of sampling and testing systems and techniques.
- Requirements regarding handling, storage and disposal of materials.

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Element 3.7.1 Plan sampling requirements

Performance statements

In achieving this unit you must:

- o. Accurately define the characteristics of a representative sample
- p. Define the **conditions** under which the sample is to be obtained
- q. Accurately assess the appropriateness and accessibility of the sampling site
- r. Decide the sampling points and frequency of sample taking in order to provide a
- s. Representative sample
- t. Identify appropriate equipment
- u. Identify appropriate sampling **procedures** and incorporate into **testing plan**
- v. Incorporate into the plan the procedures for maintaining the integrity of the sample
- w. Identify hazards and accurately assess risks
- x. Define with **testing plan** the system for correct disposal of sample in accordance with
- y. safe operating procedures
- z. Make plans to deal with contingencies during sample taking
- aa. Ensure **testing plan** contains all relevant information in a form usable by others
- bb. Ensure sampling methodology meets customer requirements

Knowledge and Understanding

- viii. the characteristics of a representative sample in terms of correlation of sample to source; variability; properties; size; location
- ix. impact, of sampling method chosen upon source and sample
- x. extent of required statistical significance
- xi. sources and methods of accessing relevant sampling standards
- xii. factors influencing integrity of the sample
- xiii. correct disposal; safety, health and environmental standard procedures
- xiv. contingencies and how to deal with them including: equipment failure; delays; limitations to access; changes in variables affecting sample condition; safety and environmental changes.

Element 3.7.2 Plan testing requirements

Performance statements

In achieving this unit you must:

- l. Define properties to be tested for
- m. Specify appropriate **equipment**
- n. Identify appropriate procedures and incorporated into **testing plan**
- o. Accurately quantify resource requirements for testing
- p. Accurately quantify conditions for testing
- q. Ensure sample conforms with test requirements
- r. Identify hazards and accurately assess risks
- s. Define a system for correct disposal of **waste materials**
- t. Ensure **testing plan** includes procedures to deal with contingencies during testing
- u. Ensure **testing plan** contains all relevant information in a form usable by others
- v. Ensure testing methodology meets customer requirements

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Knowledge and Understanding

- vi. relevant testing methods appropriate to achieve objectives
- vii. relevant test resources and their suitability
- viii. potential impact of test upon health, safety and the environment
- ix. correct disposal: environmental, health and safety procedures
- x. contingencies arising during testing and how to deal with them including: equipment failure; delays changes in variables affecting testing conditions; safety and environmental changes

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Materials	May include solids, liquids and gases.
Specification out.	The set of instructions which describe the work to be carried out. Including customer requirements, both qualitative and quantitative, and the time within which it must be completed.
Sample request	Could include the following: <ul style="list-style-type: none"> • quality assurance testing during production • later moisture content testing • on-site sample
Sampling plan	Contains all relevant information. Could include: <ul style="list-style-type: none"> • conditions • sampling method • access • location • timing • frequency • duration • recording methods
Testing request	Could include the following: <ul style="list-style-type: none"> • conducting density/moisture tests • establishing liquid and plastic limits • performing viscosity tests • cell identification/in-numeration
Testing plan	Contains all relevant information to be used. Could include: <ul style="list-style-type: none"> • calibration of equipment • testing method • cleanliness • environment • time • acceptable variations • recording methods

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Equipment as PPE to be specified, when necessary. Sampling equipment specified with in the specification.

Problems materials These can relate to either materials, equipment and/or and/or delivery specifications. The person carrying out this work would be expected to resolve any equipment problem for which maintenance engineers are not required. Where a problem does require a maintenance engineer, the person would be expected to report the problem to a more senior person. Other problems include, contamination, disruption and disturbance.

Documentation relevant Includes specifications, reports, schedules and any other documentation.

Conditions Control of conditions may include:

- temperature
- pressure
- flow
- level
- humidity
- density
- ph

Risk assessment To include hazardous materials and contamination.

Waste materials To include off specification product and waste materials.

Health, safety and Environmental legislation To include all relevant legislation and company policy.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

Unit 3.9 : Allocate personnel to maintain processing

This unit addresses the competence required to allocate personnel to ensure the processing operation achieves its objectives. This involves:

- planning the work of teams and individuals
- providing feedback when necessary for teams and individuals
- ensuring planned process objectives are achieved
- maintaining your own and other's safety while working

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.



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- 3.9.1 Plan the work
- 3.9.2 Achieve the objectives

Element 3.9.1 Plan the work

Performance statements

In achieving this unit you must:

- a. Check that you have the required **work schedule** and that it is clear and complete
- b. Check that you have the required **objectives** and that they are clear and complete
- c. **Allocate work** taking into account **team members** and/or individuals abilities
- d. Ensure the **plans** and **schedules** cover all relevant personnel
- e. Ensure plans and schedules are realistic and achievable within **organisational constraints**
- f. Check that all **team members** and/or individuals agree with the **plans** and **schedules**
- g. Confirm team members and/or individuals agree with, and understand the **plans** and **schedules**
- h. When appropriate wear **PPE**
- i. **Communicate**, when required, with relevant personnel
- j. Deal promptly with any **problems** that occur in the planning stage of the operation
- k. Follow safe working procedures at all times
- l. Complete any required **documentation** accurately and clearly

Knowledge and Understanding

- i. the meaning of terms used in work schedules
- ii. the objectives which need to be achieved
- iii. the importance of meeting objectives
- iv. how to allocate work taking into account individual's/ team member's abilities
- v. the importance of ensuring plans and schedules cover all personnel
- vi. what organisational constraints there are and how they may affect the plans and schedules
- vii. the importance of gaining agreement
- viii. the importance of confirming that individuals and team members agree and understand the plans and schedules
- ix. the importance of communication, keeping others informed during the operation
- x. the problems that may occur in the planning stage
- xi. your personal responsibilities with regard to health, safety and environment
- xii. what personal protective equipment to use and why
- xiii. the types of problems that can occur and how to recognise and deal with them
- xiv. who to contact if there is an unsolvable problem and/ or it is not your responsibility
- xv. what documentation needs to be used and how to complete it

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Element 3.9.2 Achieve the objectives

Performance statements

In achieving this unit you must:

- a. Check that you have the required work **schedule/objectives** and that they are clear and complete
- b. **Monitor** actual **performance**
- c. Assess the **performance** against agreed **plans** and **schedules**
- d. Provide **feedback** to individuals and/or team members when appropriate
- e. Take **corrective action** when necessary to ensure **objectives** are met
- f. Deal promptly with any **problems** that arise which may affect the achievement of **objectives**
- g. Inform the appropriate person of any **problems** which you cannot solve and/or which are not your responsibility
- h. Ensure that the relevant **documentation** is completed accurately and clearly
- i. When appropriate wear **PPE**
- j. Work safely at all times
- k. Ensure that security and **confidentiality** is observed when necessary

Knowledge and Understanding

- i. the required objectives and the importance of meeting objectives
- ii. methods of monitoring individuals and teams members performance
- iii. how to assess performance
- iv. the importance of comparing actual performance against planned performance
- v. methods of providing feedback
- vi. the importance of providing constructive feedback
- vii. what corrective action to take to meet objectives
- viii. typical problems that may occur
- ix. how to deal with problems that may affect the meeting of objectives
- x. why it is important to complete documentation clearly and accurately
- xi. who to report to with unsolvable problems and/or those which are not your responsibility
- xii. your personal responsibilities with regard to health, safety and the environment
- xiii. when and why PPE needs to be worn
- xiv. when it may be important to observe security/confidentiality at times

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Allocate work	Giving teams and individuals responsibility for tasks which should achieve agreed work objectives.
Confidentiality	Only providing information to those who are authorised to have it.
Feedback on performance	Information to give to others on how well they are performing against the objectives which have been agreed.
Objectives	Clearly defined results which you need to achieve which are specific, measurable, agreed with others, realistic and within time constraints.

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Organisational constraints	Organisational policies, objectives, level of resources which limit your actions and decisions.
Plans	Documents or spoken agreements which describe the work to be carried out, when, by whom, to what standard and with what resources, in the order that requirements and objectives can be met.
Schedules	Documents showing the work to be done, when and sometimes by whom.
Team members	People who work with you as part of a functional or project team; team members may report to you either as their line/shift manger/foreman, or as the manger / foreman in charge of a specific process/ activity /project on which they are working.
Performance	How individuals and /or team members perform in relation to achievement of objectives.
Monitor	Method used to compare actual with planned performance.
Work schedule	The set of instructions which describe the work to be carried out, and the objectives that need to be achieved.
PPE	Personal protective equipment to be specified, when necessary.
Problems	These can relate to either personnel, materials , equipment , operating instructions and/or specifications. Where a problem requires a maintenance engineer, the person would be expected to report the problem to a more senior person.
Corrective actions	May include adjust, request extra personnel, other assistance or shutdown
Documentation	Including that relating to allocation of personnel, and any other relevant documentation.
Communication/ Communicate	To include either written, spoken and/or electronic
Health, safety and environmental legislation	To include all relevant legislation and company policy.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Commentary for Unit 3.12:

Enable individual learning through coaching

NB This unit is a tailored version of a Health and Safety unit produced by EMPNTO, which was originally designated Unit L12

This unit addresses the competence required to coach individual learners and/or assist individual learners to apply their learning. This involves:

- identifying individual needs and learning styles
- choosing the manner and speed of coaching
- checking on the progress of learners
- giving feedback to learners
- reviewing the potential for e-learning support for learners
- helping learners to apply their learning
- giving ongoing support to learners

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

3.12.1 Coach individual learners

3.12.2 Helping individual learners to apply their learning

There is also a glossary of terms which appear within the unit and have a specific meaning.

Assessment Strategy Statement

In the context of N/SVQ assessment, evidence must be derived from workplace performance, with the exception of element 2, criterion b) where candidate presentation of Information Learning Technology (ILT) alternatives is considered, in order to cover the full scope of the unit as defined in the glossary.

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Learning needs/objectives	An individual's and/or organisations needs and learning objectives.
Learning outcome/s	That which an individual gains from the process, (coaching)
Assessment methods	To include appropriate methods for checking learner's progress.
Coaching	The method where the primary source of teaching is by demonstration. To include how to match coaching opportunities with individual learning needs. How to sequence and pace the information for individual learners.
Feedback	The information that is given to learners to assess their progress.
Documentation	Including that relating to learning, and any other relevant documentation
Responsibility	To be in charge of a certain operation, and accept and confirm that responsibility
Confidentiality	Only providing information to those who are authorised to have it.
Communication	May include spoken, written and/or electronic.
Health, safety & environment	To include all relevant legislation and company policy.
Materials	May include solids, liquids and gases.
Equipment/plant	This may include equipment/plant where there is some interaction
	between items and/or people. Also may include a number of parameters within the operator's control, and some control instrumentation.
	Typical equipment may include:
	<ul style="list-style-type: none"> • chemical reactors • addition tanks • phase separators • receiving vessels • pipework and pumps • film coaters • solution make-up vessels • filters and spray equipment

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PPE
necessary.

Personal protective equipment to be specified, when

PTW
operation

Permit to work. Authority to start, and/or continue with the
or the equivalent.

Process type
may be

Batch and/or continuous processing. The following types
included:

- batch operations, where there are a number of batch operations running simultaneously, and also a multi-staged batch operation.
- continuous operations, such as reaction, recovery, separation and purification processes, mixing, granulating, drying and compressing.

Problems

These can relate to either personnel, materials, equipment , operating instructions, specifications, learning needs and/or assessment methods. Where a problem requires another person, the person would be expected to report the problem to the person who has the necessary authority to deal with it.

Corrective actions

May include adjust, request assistance or shutdown.

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ELEMENT 3.12.1 Coach individual learners

In carrying out this work you must:

- a) Identify individual needs and learning styles
- b) Choose a style of **coaching** which meets the **learning objectives** of the organisation
- c) Coach in a manner and at a speed which is appropriate to learners
- d) Analyse the skills needed and the order they need to be learned in
- e) Regularly check that learners are making progress towards learning outcomes
- f) Give learners positive **feedback** on the learning process
- g) Alter coaching** in the light of learners' progress and **feedback**
- h) Identify anything that prevents learning and review this with learners

To do this you need to know

The nature and role of coaching

- 1 how to match coaching opportunities to individual learning needs and objectives
- 2 how to put information in order and decide whether the language you will be using is appropriate for individual learners
- 3 the separate areas of coaching which encourage learning
- 4 which types of learning are best achieved and supported through coaching
- 5 how to identify the opportunities available for learners to apply their learning

Principles and concepts

- 6 how to put learners at their ease
- 7 how to identify individual learning needs
- 8 what the different learning styles are and how they affect learning
- 9 how to identify and use different learning opportunities
- 10 how to structure learning activities
- 11 how to choose and prepare appropriate materials, including technology-based materials
- 12 how to encourage learners to recognise their own achievements
- 13 how to recognise the things that are likely to prevent learning and how to overcome them
- 14 how to check learners' understanding and progress

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External factors influencing human resource development

- 15 how to make sure that everyone acts in line with health, safety and environmental protection legislation and best practice
- 16 how to analyse and use developments in learning and new ways of delivery, including technology-based learning

ELEMENT 3.12.2 Helping individual learners to apply their learning

In carrying out this work you must:

- a) Give learners the opportunities to practise skills, apply their knowledge and get experience in a structured way.
- b) Consider using technology-based support for learners, including e-support.
- c) Identify opportunities for learners to achieve agreed **learning objectives** and give them positive **feedback** on their progress.
- d) Identify opportunities to use different learning opportunities and agree action with learners.
- e) Give learners clear and accurate information on the resources available to help them apply their learning.
- f) Give learners positive **feedback** on the learning experience and the outcomes achieved.
- g) Identify anything that prevents learning and review this with learners.
- h) Explain to learners the ongoing support that is available to them.

To do this you need to know

The nature and role of coaching

- 1 how to match coaching opportunities to individual learning needs and objectives
- 2 how to put information in order and decide whether the language you will be using is appropriate for individual learners
- 3 the separate areas of coaching which encourage learning
- 4 which types of learning are best achieved and supported through coaching
- 5 how to identify the opportunities available for learners to apply their learning

Principles and concepts

- 6 how to put learners at their ease
- 7 how to identify individual learning needs
- 8 what the different learning styles are and how they affect learning
- 9 how to identify and use different learning opportunities
- 10 how to structure learning activities
- 11 how to choose and prepare appropriate materials, including technology-based materials
- 12 how to encourage learners to recognise their own achievements
- 13 how to recognise the things that are likely to prevent learning and how to overcome them

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14 how to check learners' understanding and progress

External factors influencing human resource development

15 how to make sure that everyone acts in line with health, safety and environmental protection legislation and best practice

16 how to analyse and use developments in learning and new ways of delivery, including technology-based learning

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Unit 3.13 : Conduct an assessment of risks in the workplace

NB This unit is a tailored version of a Health and Safety unit produced by the Employment NTO, which was originally designated Unit G. This means that the wording of the unit differs slightly from the rest of the COGENT suite.

This unit addresses the competence needed to identify hazards in the workplace, assess the level of risk resulting from those hazards, make recommendations to control the risk and review the results.

There are three elements in this unit, each of which has performance standards and a knowledge base associated with it.

- 3.13.1 Identify hazards in the Workplace
- 3.13.2 Assess the level of risk and recommend action
- 3.13.3 Review your workplace assessment of risks

Fundamental to this Unit is an understanding of the process of carrying out a risk assessment. A person competent in this unit should be able to carry out risk assessments according to regulatory requirements.

This unit is for: a person required to, or who has been asked to, carry out a risk assessment in the workplace. This could be an employer, line manager, supervisor, safety representative or employee.

This unit is about the competences needed to identify hazards in the workplace, assess the level of risk resulting from those hazards, make recommendations to control the risk and review the results.

This is what you need to show:

In element G.1: that you understand the process of identifying hazards in the workplace. You should be prepared for the hazard identification process, and investigate both those areas where risks are most likely to occur and those who might be harmed. You should be able to identify when to make use of expert advice and guidance on identifying hazards.

In element G.2: that you understand the criteria for assessing the level of risk. You should show you know the criteria for acceptable risks and understand when risks are acceptable. You should show you can prepare and present a report on the results of the risk assessment to include those significant findings of your risks assessment.

In element G.3: that you understand the importance of reviewing your assessment from time to time. This will include understanding when changed circumstances might affect your current assessment

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Element 3.13.1 Identify hazards in the workplace

Performance statements

In achieving his unit you must:

- a. Define clearly, why and where the **risk** assessment will be carried out
- b. Confirm that all the information available to you on statutory health and safety regulations is up-to-date and from recognised and reliable information sources
- c. Recognise your own limitations and seek expert advice and guidance on risk assessment when appropriate
- d. Select a method of identifying **hazards** appropriate to the workplace being assessed
- e. Ensure your investigation fully identifies those areas in the workplace where hazards with a potential for serious harm to health and safety are most likely to occur
- f. Identify **hazards** which could result in serious harm to **others**
- g. Record those **hazards** in a way which meets legal, good practice and **workplace** requirements
- h. Report the results of the process to the **responsible persons** in an agreed format and timescale
- i. Work safely at all times

Knowledge and Understanding

- i. your legal duties for health and safety in the workplace as required by the Health and Safety at Work Act 1974
- ii. your duties for health and safety as defined by any specific legislation covering your job role
- iii. methods of identifying hazards including direct observation, examining records, or interview
- iv. hazards that are most likely to cause harm to health and safety
- v. the particular health and safety risks which may be present in your own job role and the precautions to be taken
- vi. the work areas and people for whom you are carrying out the assessment
- vii. work activities of the people in the workplace where you are carrying out the risk assessment
- viii. resources required for a risk assessment to take place
- ix. information sources for risk assessments (e.g. HSE publication)
- x. the importance of dealing with or promptly reporting risks
- xi. where to find expert advice and guidance

Element 3.13.2 Assess the level of risk and recommend action

Performance statements

In achieving this unit you must:

- a. Review all legal requirements that are appropriate to your **workplace** and **working practices** to ensure effective control measures are in place
- b. Confirm that industry standards and all other reasonable precautions are in place
- c. Identify **hazards** that could be eliminated
- d. Start your **risk** assessment for **hazards** that cannot be eliminated, with those **hazards** that are most likely to cause serious harm to **others**
- e. Assess the level of **risk/s** and consider how the **risk/s** can be controlled to minimise harm
- f. List unacceptable **risk/s** in priority order including all breaches of relevant health and safety legislation and workplace procedures
- g. Prepare a risk/s assessment report containing recommendations for minimising **risk/s**

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- h. Present the results of the risk/s assessment to **responsible persons** in the agreed format and timescale

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Knowledge and Understanding

- i. the responsibilities for risk assessments as required by the Management of Health and Safety at work Regulations 1992 and other related regulations
- ii. your legal duties for health and safety in the workplace as required by the Health and Safety at Work Act 1974
- iii. your duties for health and safety as defined by any specific legislation covering your job role
- iv. your own limitations, job responsibilities and capabilities
- v. the work areas and people for whom you are carrying out the assessment
- vi. effective procedures for carrying out a risk assessment
- vii. the purpose, legal implications and importance of carrying out a risk assessment
- viii. work activities of the people in the workplace where you are carrying out the risk assessment
- ix. resources required for a risk assessment to take place
- x. what to do with the results of the risk assessment
- xi. effective communication methods

Element 3.13.3 Review your workplace assessment of risks

Performance statements

In achieving this unit you must:

- a. Compare the latest **risk/s** assessment to current **workplace** and **working practices**
- b. Identify, accurately, any significant differences between previous and new **working practices**
- c. Investigate the action taken as a result of your recommendations specified in the latest **risk** assessment
- d. Identify, accurately, new **hazards** arising from changes in the **workplace** or **working practices**
- e. Make changes to your **risk/s** assessment in line with the review
- f. Inform, promptly, everyone affected by the changes

Knowledge and Understanding

- i. your legal duties for health and safety in the workplace as required by the Health and Safety at Work Act 1974
- ii. your duties for health and safety as defined by any specific legislation covering your job role
- iii. methods of identifying hazards
- iv. your own limitations, job responsibilities and capabilities
- v. the work areas and people for whom you are carrying out the assessment
- vi. work activities of the people in the workplace where your are carrying out the risk assessment
- vii. how to communicate effectively

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Procedures
that will

Specifications of how to carry out work activities in a manner that will ensure the required outcomes if the procedure is followed accurately.



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specified. All workplace policies, practice and procedures should be

Resources

A range of resources which are used in any activity. These could include:

- Information, documentation and specifications
- manufacturer/supplier data for equipment and materials
- materials
- tools
- equipment

Hazard/risk important

The Health and Safety Executive (HSE) have defined two concepts as follows: a hazard is something with the potential to cause harm: a risk is the likelihood of a hazard's potential being realised. The hazards covered by this unit are relating to:

- the use of plant and equipment
- the use of substances hazardous to health
- the workplace layout
- the working practices
- the job role
- people with special needs

Each organisation will have its own risk control strategy, the candidate will be required to work within this.

Risk become a

Almost anything may be a hazard, but may or may not risk. For example

- a trailing electrical cable from a piece of equipment is a hazard. If it is trailing across a passageway there is a high risk of someone tripping over it, but if it lies along a wall out of the way, the risk is much less
- toxic or flammable chemicals stored in a building are a hazard, and by their nature may present a high risk. However, if they are kept in a properly designed secure store, and handled by properly trained and equipped people, the risk is much less than if they are left about in a busy workshop for anyone to use - or misuse.
- a failed light bulb is a hazard. If it is just one bulb out of many in a room it presents very little risk, but if it is the only light on a stairwell, it is a very high risk. Changing the bulb may be a high risk, if it is high up, or if the power has been left on, or low risk if it is in a table lamp which has been unplugged.
- a box of heavy material is a hazard. It presents a higher risk to someone who lifts it manually than if a mechanical handling device is properly used.

Relevant people areas of

People who have expertise in and/or responsibility for the



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work affected by the procedure. This is likely to include colleagues with production, safety, health, environment and quality specialisms.

Problems

Problems with others, and/or working practices.

- working policies which do not conform to laid down policies
- unsafe behaviour
- accidental breakages
- accidental spillages
- environmental factors

Work place
your work.

This is the single or multiple areas in which you carry out

Changes in the workplace covered by this unit are in relation to:

- layout of workplace
- new facilities and services

Working practices
equipment

These are any activities, procedures , use of materials or and working techniques used in carrying out your job. In this unit it also covers any omissions in good working practice which may pose

a threat to health and safety. Previous and new working practices covered by this unit are relating to:

- plant, machinery and equipment
- substances or materials
- people

Workplace policies
documentation

The Workplace Policies covered by this unit are prepared by the employer on the procedures to be followed regarding health and safety matters. It could be the employer's safety procedures covering aspects of the workplace that should be drawn to the employees' (and "other persons") attention.

Other persons
Work Act

This refers to everyone covered by the Health and Safety at including: visitors, members of the public, colleagues, contractors, clients, customers, patients, students, pupils.

Personal presentation

The includes: personal hygiene; use of personal protection equipment; clothing and accessories suitable to the particular workplace.

Responsible persons
any

The persons or persons at work to whom you should report health and safety issues or hazards. This could be a supervisor, line manager or your employer. Responsible persons covered by this unit are:

- management associated with the examined activities
- employees associated with the examined activities
- decision makers



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- union representatives
- staff representatives

Information sources

Information sources covered by this unit are:

- internal Health and Safety experts
- HSE offices
- relevant industry publications
- external organisations

Key points regarding Health and Safety legislation and regulations

“Health and Safety at Work Act 1974”

The Health and Safety at Work Act 1974 is the main piece of legislation under which nearly all other regulations are made . It is for this reason that only this piece of legislation is specifically referred to in this Unit.

Employers have a legal duty under this Act to ensure, so far as is reasonably practicable, the health, safety and welfare at work of the people for whom they are responsible and the people who may be affected by the work they do.

Under this Act it is also important to be aware that all people at work, not just employers, have a duty to take reasonable care to avoid harming themselves or others through the work they do.

Risks should be reduced “so far as is reasonably practicable”. This term means the duty-holder (in most instances the employer) can balance the cost against the degree of risk although obviously any Health and Safety Inspectors would expect that relevant good practice is followed.

According to the Act:

Employers must safeguard so far as is reasonably practicable, the health, safety and welfare at works of all the people who work for them and “other persons”. This applies in particular to the provision and maintenance of safe plant and systems of work, and covers all machinery, equipment and substances used.

People at work also have a duty under the Act to take reasonable care to avoid harm to themselves or to others by their working practices, and to co-operate with employers and others in meeting statutory requirements. The Act also requires employees not to interfere with or misuse anything provided to protect their health, safety or welfare in compliance with the Act.

Other Legislation

There is an array of health and safety regulations and codes of practice which affect people at work. There are regulations for those who, for example, work with electricity, or work on construction projects, as well as regulations covering noise at work, manual handling, working with VDUs, or dealing with substances hazardous to health, etc. The specific requirements for all or any of these can be obtained from HSE local offices.

As many of the regulations are only relevant to certain workplaces or working practices no specific reference has been made in the Knowledge Requirements to any of these regulations. The phrase “your responsibilities for health and safety as required by any specific legislation covering your job role” is intended to relate to those specific pieces of legislation important to your workplace and/or working practices which you should be able to find out about

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Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Unit 3.14 : Identify improvements to energy efficiency

NB This unit is a tailored version of a Management Standards unit produced by the Management Standards Centre and was originally designated Unit E5.

This unit is about helping the organisation improve its energy efficiency. It covers both identifying opportunities for improvements and making appropriate recommendations.

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

3.14.1 Identify opportunities to improve energy efficiency

3.14.2 Recommend improvements to energy efficiency

In order to identify opportunities to improve energy efficiency, you need to review opportunities for improvements in energy efficiency regularly. These opportunities may arise from changes in operational systems and activities, changes in the use of resources, or developments in products, services, technology and best practice. You need to identify external programmes which can support the organisation's energy efficiency initiatives. You also need to encourage individuals and teams to take an active part in these initiatives.

In order to recommend improvements to energy efficiency, you need to evaluate the opportunities which developments in technology. Energy sources and best practice offer for improvements to the organisation's systems and activities. You need to make recommendations to individuals and teams based on your evaluations, seeking specialist advice where necessary.

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Element 3.14.1 Identify opportunities to improve energy efficiency

Performance Statements

In achieving this unit you must:

- a. you consistently identify developments and advances in energy efficiency **best practice** which are relevant to the **organisation**
- b. you regularly identify new markets, products, services and technological innovations which offer improvements in energy efficiency
- c. you regularly review **resources**, systems and operational activities to identify opportunities for improved energy efficiency
- d. you select and use **resources** which optimise the use of energy throughout the **organisation**
- e. you identify opportunities for recycling energy used for operational activities
- f. you identify external programmes which support the organisation's energy efficiency initiatives
- g. you encourage individuals and teams to identify opportunities which improve energy efficiency and contribute to a sustainable **environment**.

Knowledge and Understanding

- i. the principles and processes of effective communication and how to apply to them
- ii. how to identify opportunities for improved energy efficiency
- iii. the principal developments and advances in energy efficiency best practice
- iv. how to select and use resources which optimise energy use
- v. the range of new markets, products, services and technological innovations relevant to energy efficiency
- vi. the principle energy recycling opportunities
- vii. the range of external programmes which may support energy efficiency initiatives
- viii. the main sources of information on developments in energy efficiency technology and best practice and how to make use of them
- ix. the principle of sustainable development and how to work towards it
- x. how to encourage individuals and teams to identify energy efficiency improvements
- xi. organisational activities, systems and resources and their impact on energy efficiency.

Element 3.14.2 Recommend improvements to energy efficiency

Performance statements

In achieving this unit you must:

- a. you accurately evaluate the advantages and disadvantages to the **organisation** of possible energy efficiency improvements
- b. you assess advances in technology for their applicability to the **organisation's** systems and activities
- c. you accurately evaluate alternative **energy sources** and suppliers for cost savings and energy efficiency
- d. you make recommendations based on your evaluations in line with organisational requirements
- e. you seek further advice from appropriate people, where necessary

Knowledge Statements

- i. how to assess the advantages and disadvantages of alternative courses of action
- ii. how to assess the applicability of technological advances in the field of energy management
- iii. the principles and processes of effective communication and how to apply them
- iv. how to present advice to individuals and teams

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- v. the range of energy efficiency improvements which can be made
- vi. developments in energy efficiency technology and best practice
- vii. the range of energy sources and their features and benefits
- viii. the range of available and relevant suppliers, tariffs and fuel costs
- ix. the operational systems and practices in the organisation
- x. the organisational requirements for providing advice and recommendations
- xi. how to decide when further advice is necessary and who to go to

Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Best Practice Programme	the Department of the Environment's programme of promoting best practice in energy efficiency
Energy sources solid fuels,	all sources of energy, such as electricity, gas, oil, nuclear and renewable sources
Environment	the physical conditions both inside and outside the organisation
EU	European Union
The organisation improve its	the organisation with which you are working to energy efficiency (this may be different from the organisation which employs you)
Your organisation different	the organisation which employs you (this may be from the organisation with which you are working to improve its efficiency
Resources and	the money, people, equipment, materials, energy, premises which you have at your disposal
Regulators of the	people empowered by government to regulate parts energy industry

Assessment Strategy Statement

In the context of N/SVQ assessment, simulation may only be used in the assessment of this unit in relation to element 2, criterion e), in order to cover the full scope of the unit as defined in the glossary.

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Commentary for Unit 2.10:

Clean and prepare complex items of plant and equipment for production

This unit addresses the competence required to clean the area and /or equipment to prepare for production . This involves:

- dismantling of equipment
- cleaning of equipment
- re-instating the equipment
- confirming the status of the plant and/or equipment
- liaising with maintenance personnel where appropriate
- maintaining your own production and other's safety while working

There are three elements in this unit, each of which has performance standards and a knowledge base associated with it.

2.10.1 Clear, clean plant, equipment and area of process

2.10.2 Liase with relevant personnel

2.10.3 Confirm the status of plant, equipment and area after cleaning

There is also a glossary of terms which appear within the unit and have a specific meaning.

Assessment Strategy Statement

In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Materials	May include solids, liquids and gases.
Operating instructions/specification	The set of instructions which describe the work to be carried out, including details of the parameters for doing so.
Dismantling operations	May include, within limits of own authority: <ul style="list-style-type: none"> • disconnecting • isolating • disassembling
Cleaning operations	May include the removal of solids, liquids and gases by appropriate procedures.
Equipment/plant	This may include equipment/plant where there is some interaction between items and/or people. Also may include single items of equipment comprising a few parts. Types of equipment to be cleaned may include heat exchangers, dryers, filtration systems, tablet presses and sterile filtration units.
PPE	Personal protective equipment to be specified, when necessary.
Problems	These may relate to either materials, equipment, personnel and/or specifications.
Corrective actions	May include adjust, request assistance or shutdown.
Documentation	May include any relevant documentation.
Communication/Communicate	May include either, spoken, written and/or electronic.
Liaison	To keep personnel informed throughout the operation.
Maintenance	Work which may be carried out to enable the process to run as smoothly as possible.
Health, safety and environmental legislation	May include any relevant legislation and company policy
Authority/Authorisation	The permission that is needed to complete the task.
SOP	Standard Operating Procedure. The method of completing a task according to stated guidelines in the organisation.
Current Status	Confirmation of plant and equipment

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Relevant personnel
and any

May include process, utilities, materials handling, laboratory
other relevant personnel.

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ELEMENT 2.10.1 Clear, clean plant, equipment and area of process

In carrying out this work you must:

11. Check that you have the required **authorisation** to proceed
12. Check that you have the **specification** detailing the work to be carried out
13. Identify correct **plant** and/or **equipment** to be isolated
14. Isolate **plant** and/or **equipment** according to SOP
15. If required, dismantle **plant** and/or **equipment** correctly
16. Clear and clean all residual **materials** and/or waste from the area to the required standard
17. If required re-assemble **plant** and/or **equipment** ready for the next operation
18. Wear specified **PPE** if necessary
19. Deal promptly with any **problems** that arise, reporting any which you cannot solve and/or are not your responsibility
20. Follow safe working procedures when using **equipment** and dealing with hazardous materials

To do this you need to know

- l) the importance of having the necessary authorisation to proceed
- m) the meaning of terms used in specifications concerned with cleaning
- n) the importance of identifying the correct plant/equipment
- o) methods of isolating plant/equipment
- p) how to handle equipment safely in ways that protect yourself and others from risk
- q) methods of cleaning plant/equipment
- r) how to dismantle and reassemble plant and/or equipment when necessary
- s) your personal responsibilities with regard to health, safety and environment
- t) what personal protective equipment to use and why
- u) the types of problems that can occur and how to recognise and deal with them
- v) who to contact if there is an unsolvable problem and/ or it is not your responsibility

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ELEMENT 2.10.2 Liase with relevant personnel

In carrying out this work you must:

11. Ensure that relevant personnel are clear about the nature of the **plant/equipment** to be maintained
12. **Communicate** effectively with relevant personnel
13. Explain to relevant personnel about any **problems** and current status of the **plant/equipment**
14. Give warnings as appropriate about specific hazards and/ or safety requirements
15. Ensure that when the **plant/equipment** is received from maintenance you are clear about the work undertaken
16. Record information accurately on correct documentation
17. Wear appropriate **PPE**
18. Deal promptly with any **problems** in the procedure that are your responsibility
19. Inform the appropriate person of any **problems** you cannot solve and/or are not your responsibility
20. Work safely at all times with regard to **material, equipment** and personal safety

To do this you need to know

- j) how to contact the appropriate maintenance personnel
- k) the importance of communication through the procedure
- l) why it is important to explain about the current status of the plant/ equipment
- m) why it is important to give warnings about specific hazards and /or safety issues
- n) when and why PPE needs to be worn
- o) what problems may occur and how to deal with them
- p) who to report to with unsolvable problems and/or those which are not your responsibility
- q) your personal responsibilities with regard to health, safety and environment
- r) methods of documentation that are used
- m) why it is important to complete documentation accurately

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ELEMENT 2.10.3 Confirm the status of plant, equipment and area after cleaning

In carrying out this work you must

10. Ensure that all **plant/equipment** is confirmed as being clean and operational
11. Check the status of all **plant/equipment**, identifying any areas of concern
12. Deal promptly with any **problems** that arise, reporting any which you cannot solve
13. Ensure that the condition of all **plant/equipment** is recorded accurately
14. Confirm that the area is in a suitable condition for the next activity
15. **Communicate** with relevant personnel when required
16. Wear **PPE** if appropriate
17. Follow safe working procedures at all times
18. Complete any **documentation** correctly

To do this you need to know

- k) Why it is important to check that plant and equipment is clean and operational
- l) the importance of checking the status of the plant and equipment
- m) why it is important to identify any 'areas of concern'
- n) why it is important to record all information accurately
- o) why it is important to confirm and record the status of the plant and equipment
- p) why it is important to communicate with relevant personnel
- q) what problems may occur and how to deal with them
- r) who to report to if you cannot solve problems and/or they are not your responsibility
- s) what your personal responsibilities are with regard to health, safety and environment
- t) what documentation needs to be completed and how

Commentary for Unit 2.14:

Ensure your own actions aim to protect the environment

NB This unit is a tailored version of a Health and Safety unit produced by the Employment NTO, which was originally designated Unit H. This means that the wording of the unit differs slightly from the rest of the COGENT suite.

This unit is about minimising risks to the environment as a result of work activities. It describes the competence required to ensure that:

- your own actions do not create any risks to the environment
- you do not ignore significant risks to the environment

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- you take sensible action to put things right, including reporting risks, and seeking advice

There are two elements in this unit, each of which has performance standards and a knowledge base associated with it.

2.14.1 Identify the risks to the environment arising as a result of workplace activities

2.14.2 Minimise risks to the environment arising as a result of workplace activities

Fundamental to this Unit is an awareness and understanding of the impact of working practices on the environment. It is important to have a basic understanding of good practice in protecting the environment. This Unit does not assume a person with high level responsibilities for the environment already exists in the workplace.

This unit is for: everyone at work (i.e. paid, unpaid, full-time, part-time) It is about maintaining good practice in day to day work activities by identifying the risks, minimising the risks and using resources responsibly.

This unit is about: the responsibilities of everyone at work for minimising risks to the environment as a result of work activities. It describes the competences required to ensure that:

- your own actions do not create any risks to the environment
- you do not ignore significant risks to the environment, and
- you take sensible action to put things right, including reporting risks, and seeking advice

This is what you need to show:

In element H.1: that you understand how activities at the workplace might affect the environment, how to check your own work activities and work area for any hazards which you or others may bring about and cause to the environment. You should be able to identify those hazards with significant risks which you can safely deal with yourself, and when you must report them to the “responsible person” for attention.

In element H.2: that you show you have taken steps to reduce risks to the environment which have arisen as a result of your action, or action by others with whom you might come into contact with during the course of your work. It covers carrying out tasks in accordance with instructions and the requirements of the workplace.

There is also a glossary of terms which appear within the unit and have a specific meaning.

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In the context of N/SVQ assessment, the use of simulation is not acceptable in the assessment of this unit to cover the full scope as defined by the glossary of the unit. Workplace performance evidence is mandatory for this unit.

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Glossary of terms

The following terms have a specific meaning in this unit and are highlighted where they appear in the performance standards. In the context of NVQ/SVQ assessment, awarding bodies are required to make sure that a candidate's evidence of performance from the workplace demonstrates that their work is consistent with these terms as defined here.

Environment with	This is a broad term which refers to the global environment which we all interact.
Hazards follows: “	The Health and Safety Executive (HSE) definition is as hazard is something with potential to cause harm”:
Risk/s likelihood	The Health and Safety Executive definition is “ a risk is the of a hazard's potential being realised”. In this unit these definitions apply equally to environmental hazards and risks. Risks to the environment covered by this unit are arising from: <ul style="list-style-type: none"> • the use of materials and substances hazardous to the environment • the disposal of waste, materials and substances hazardous to the environment • emission of gases, fumes or dust.
Workplace out. This	This is the single or multiple areas in which work is carried may be a shop, office, a manufacturing plant, outdoors, or an educational establishment.
Working practices equipment	These are any activities, procedures, use of materials or and working techniques used. It also covers any omissions in good working practice which may pose a threat to health and safety
Workplace policies	This covers documentation prepared by the employer on the procedures to be followed regarding environmental matters. It could be the employers environmental policy statement, or guidance covering aspects of the working practices or workplace that should be drawn to the employees' (and “other persons”) attention.
Workplace environmental procedures	These contain the specific instructions or details for people at work to follow for a environmentally friendly working environment. They will contain the instructions, for example, on disposal of materials hazardous to the environment. Legal and workplace environmental procedures covered by this unit are: <ul style="list-style-type: none"> • waste minimisation • the use of environmentally safe working methods and equipment

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- the use of personal protection equipment
- what to do in the event of an emergency involving environmental hazards
- authorisation for handling, storing, using or disposing hazardous materials, products or equipment.

Reporting procedures

Reporting procedures covered by this unit are:

- oral reports
- written reports

Responsible persons any health

The person or persons at work to whom you should report and safety issues and hazards. This could be a supervisor, line manager or employer.

ELEMENT 2.14.1 Identify the risks to the environment arising as a result of workplace activities

In carrying out this work you must be able to:

1. Correctly name and locate the **responsible persons** in the workplace to whom you should report environmental matters
2. Remain up-to-date on environmentally-friendly **working practices** which are relevant to your workplace
3. Identify any current **working practices** in your job role which could cause harm to the **environment**
4. Identify any materials, products or equipment used in any part of your job role which could cause harm to the **environment**
5. Report, accurately, any differences between legal and workplace regulations and the actual use of materials or products hazardous to the **environment**
6. Report, promptly, those hazards which present high risks to the **persons responsible** for environmental matters
7. Report, concisely and accurately, your **environment** awareness training needs to the appropriate persons

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To do this you need to know

- a) relevant aspects of the Environmental Protection Act and relevant regulations which will affect the workplace
- b) your duties for the environment as defined by any specific legislation covering your job role
- c) the particular risks to the environment which may be present in your workplace and/or in your own job role
- d) the importance of remaining alert to the presence of hazards to the environment in the whole work place
- e) the importance of dealing with or promptly reporting risks to the environment
- f) substances and processes categorised as hazardous to the environment
- g) workplace policies, precautions and procedures relating to controlling risks to the environment
- h) responsibilities for items (materials/equipment) hazardous to the environment in your job description
- i) the responsible persons to whom to report environmental matters

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ELEMENT 2.14.2 Minimise risks to the environment arising as a result of workplace activities

In carrying out this work you must be able to:

1. Follow the up-to-date legal requirements and **workplace environmental procedures** for your job role
2. Control these environmental hazards within your capability and the scope of your job responsibilities
3. Report, promptly, risks to the **environment** that you are able to deal with
4. Pass on any suggestions for limiting **risk/s** to the **environment** to the **responsible persons**
5. Follow suppliers', manufacturers' and workplace instructions for the safe use and storage of materials and products
6. Follow suppliers', manufacturers' and workplace instructions for the safe use and storage of equipment
7. Follow the correct procedure for handling materials and products hazardous to the **environment**
8. Follow the correct procedure for disposing of materials and products hazardous to the **environment**

To do this you need to know

- a) the specific workplace environmental procedures covering your job role
- b) suppliers', manufacturers' and workplace instructions for the use of equipment, materials and products hazardous to the environment
- c) how to use resources and materials effectively and efficiently
- d) working practices for your own job role
- e) correct handling procedures for materials hazardous to the environment
- f) your own responsibility for controlling hazards to the environment
- g) workplace requirements for handling hazards to the environment which you are unable to deal with

Unit 3.15 : Enable learning through demonstrations and instruction

NB: This unit has been imported directly from the Employment NTO (No L 11)

Overview

This unit is appropriate for you if your role involves:

- demonstrating skills and methods to learners
- instructing learners in procedures and processes

The activities you are likely to be involved in:



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- demonstrating how equipment is used
- showing a learner how to do something
- giving learners instructions on what to do or how to carry out a particular activity
- deciding when you should use demonstration or instruction to encourage learning
- reviewing the potential use of technology-based learning
- checking on the progress of learners
- giving feedback to learners

What the unit covers:

- 1 demonstrating skills and methods to learners
- 2 instructing learners

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Element L11.1: Demonstrate skills and methods to learners

Performance criteria

You must be able to do the following:

- a Base the demonstration on an analysis of the skills needed and the order they must be learned in.
- b Ensure that the demonstration is accurate and realistic.
- c Structure the demonstration so the learner can get the most out of it.
- d Encourage learners to ask questions and get explanation at appropriate stages in the demonstration.
- e Give learners the opportunities to practise the skill being demonstrated and give them positive feedback.
- f Give extra demonstrations of the skills being taught to reinforce learning.
- g Ensure that demonstrations take place in a safe environment and allow learners to see the demonstration clearly.
- h Respond to the needs of learners during the demonstration.
- i Reduce distractions and disruptions as much as possible.

Element L11.2: Instruct learners

Performance criteria

You must be able to do the following:

- a Match instruction to the needs of the learners.
- b Identify which learning outcomes will be achieved through instruction.
- c Ensure that the manner, level and speed of the instruction encourages learners to take part.
- d Regularly check that learners understand and adapt instruction as appropriate.
- e Give learners positive feedback on the learning experience and the outcomes achieved.
- f Identify anything that prevents learning and review this with the learners.

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Knowledge requirements

You need the following knowledge to perform this Unit of Competence. You will show this through the outcome of your work activities and through evaluations of your systems and processes.

You need to be able to show that you have general knowledge and understanding of the following:

The nature and role of demonstrations and instruction

- 1 the separate areas of demonstrations which encourage learning
- 2 which types of learning are best achieved and supported through demonstrations
- 3 how to identify and use different learning opportunities
- 4 how to structure demonstrations and instruction sessions
- 5 how to choose from a range of demonstration techniques

Principles and concepts

- 6 how to put learners at their ease and encourage them to take part
- 7 how to choose between demonstration and instruction as learning methods
- 8 how to identify individual learning needs
- 9 which factors are likely to prevent learning and how to overcome them
- 10 how to check learners' understanding and progress
- 11 how to put information in order and decide whether the language you will be using is appropriate for the learners
- 12 how to choose and prepare appropriate materials, including technology-based materials
- 13 the separate areas of instructional techniques which encourage learning
- 14 which types of learning are best achieved and supported through instruction

External factors influencing human resource development

- 15 how to make sure everybody acts in line with health, safety and environmental protection legislation and best practice
- 16 how to analyse and use developments in learning and new ways of delivery, including technology-based learning

Assessment Strategy Statement

In the context of N/SVQ assessment, evidence must be derived from workplace performance.

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