National Occupational Standards for Process Engineering Maintenance (Instrument and Control)

Instrument and Control Craftsperson Approved by UKCG February 2004

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

AMENDMENTS				
AMENDMENT & DATE	**PAGES**	**CHANGES MADE BY:**	**CHECKED BY:**	**APPROVED BY:**

Any amendments made to this standard by Cogent will be recorded above.

Unit No C2.1 : Reinstate the work area after completing the maintenance of process plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 2.15

This unit is about your competence in restoring the work area to a safe condition prior to returning to Operations. You will be required to identify and separate waste materials for disposal and identify and separate out materials suitable for storage and further use. You will be following your organisation's safe working practices at all times and working within the work permit procedures.

This unit is common to the Mechanical, Electrical and Instrument & Control disciplines.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving the unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Separate equipment, components, and materials for re-use from waste items and materials
c. Store reusable materials and equipment in an appropriate location
d. Dispose of waste materials in line with organisational and environmental safe procedures
e. Restore the work areas to a safe condition in accordance with agreed requirements and schedules
f. Deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Heath, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others

You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of the **work area restoration requirements** and the relevant health and safety, and organisational safe working practices and procedures.

iii. You must have an appreciation of the **material and equipment stores procedures and organisational procedures** which you have to follow.

iv. You must have an appreciation of the appropriate **waste disposal methods and procedures** for different types of waste, in accordance with current health and safety regulations, relevant legislation and organisational practice.

v. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures**.

Scope of this standard

1. **The level and extent of responsibility** will involve you being responsible for ensuring the equipment and work site is safe for others or yourself to work on by following defined procedures. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorized signatories within the Permit to Work system

2. **The work areas to be restored** should relate to chemical manufacturing on onshore sites or offshore installations.

3. **The resources to be stored** are materials and equipment for use at sometime in the future and retained either in secure, enclosed containment or unenclosed within a work area or storage facility. Resources could be identified, sorted, protected and evaluated for further use. Appropriate storage facilities should be used where necessary. Typical resources could include:

   - Consumables
   - Assembly/alignment aids
   - Storing/stacking equipment
   - Lifting equipment
   - Safety equipment
   - Personal Protective Equipment/shielding equipment
   - Excess materials
   - Process and ancillary equipment
   - Industrial gas cylinders
   - Tools / equipment
   - Protection sheeting
   - Re-usable components assemblies

4. **The disposal of hazardous and non-hazardous materials** could include:

Non hazardous:

- Packaging/protecting materials
- Swarf
- Material offcuts
- Replaced “lifed” consumables

Hazardous:

- Chemicals and fluids e.g. solvents and cleaning agents
- Sharp objects/offcuts
- Asbestos or asbestos based
- Oils and greases

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

UNIT C2.2 : Hand over process plant and equipment

This unit is a contextualised version of two units produced by the OSC Eng Engineering Competence Standards which were originally designated ECS 7.03 & 7.02

This unit has two elements and is about your competence in completing safe and effective hand over of process plant and equipment. It includes the hand over to others and your acceptance and confirmation of responsibility for the control of the process plant and equipment. You will be following your organisations safe working practices and working within the work permit procedures.

This unit is common to the Mechanical, Electrical, and Instrument & Control disciplines.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Unit-wide Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Heath, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have a working knowledge and understanding of **hand over procedures for products or assets.** This should include:

   - When hand over should occur
   - Why it is important to confirm the precise moment of transfer.
   - How to confirm the precise moment of transfer

iii. You must have an appreciation of the **record and documentation systems and procedures**. This could include the level of detail on the condition of engineering products/assets as required by different parties.

iv. You must have an appreciation of the types of **working relationships**. This should include the types of support that can be offered to those transferring control.

v. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Unit-wide Scope

1. **The level and extent of responsibility** will involve you ensuring the handover is completed by following defined procedures. You will be accountable for the integrity of the handover and ensuring it is recorded in a formal manner. In all cases, you will still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.

2. **The type of plant and equipment** to be handed over could include:

    - Systems and sub-systems
    - Process equipment
    - New installations

3. **The hand over procedures and environments** may include operational or non-operational conditions. A typical example of a hand over during operational conditions could be:

    - Shift changes on continuous process plants

    A typical example of hand over under non-operational conditions could be:

    - Between maintenance and operational teams at the end of an overhaul
    - Hand over of a large on-going maintenance project
    - Hand over from in-house maintenance teams to outside specialists
    - Shift to shift

4. **The Parties to hand over to** could include:

    - Clients
    - Production operations
    - Maintenance engineers
    - Line Supervisors

5. **The complexity of hand-overs** could include

    - Written
    - Oral
    - Test documentation

Element C2.2.1: Hand over process plant and equipment

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Confirm and define the condition of the engineering products or assets in accordance with specifications
c. Clearly define and obtain agreement on the moment of transfer of responsibility
d. Communicate hand over of control as specified
e. Produce and maintain records of the hand over in accordance with organisational procedures

Scope of the standard See Unit-wide scope.

Knowledge and Understanding See Unit-wide Knowledge and Understanding.

Element C2.2.2 Accept and confirm responsibility for the control of process plant and equipment

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Check and confirm that the condition of the engineering products or assets is in an acceptable hand over condition
c. Make sure that the information received at hand over is accurate, up-to-date and complete
d. Seek additional information if there are any areas of doubt or lack of clarity
e. Provide proper support and co-ordination to those transferring control
f. Confirm and record acceptance of responsibility and control in line with agreed procedures

Scope of the standard See Unit-wide scope

Knowledge and Understanding See Unit-wide Knowledge and Understanding

---

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit C2.3 : Deal with hazards

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 7.06

This unit is about your competence in minimizing risks arising from accidents and incidents by taking the appropriate action. This will require taking action to minimize risks to personnel and property, calling for help following an incident, following shutdown and evacuation procedures and where possible taking action.

This unit is common to the Electrical, Mechanical and Instrument & Control disciplines.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Call for expert help in the event of contingencies occurring, using warning systems as appropriate
c. Take prompt and appropriate action to minimize risk of personal and third party injury as a first priority and then damage to property and equipment
d. Follow shutdown and evacuation procedures promptly and correctly
e. Deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with organisational policy and procedures

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Heath, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of the **first aid procedures**. This must include the locations of the first aid stations and where to find the list of approved staff trained in first aid.

iii. You must have a working knowledge and understanding on the **evacuation procedures** from the work site to a safe area.

iv. You must have an appreciation of the **contingency reporting documentation and systems** for the work site.

v. You must have an appreciation of the **reporting lines and procedures** for the work site.

Scope of the standard

This should cover:

1. **The level and extent of responsibility** is limited to working within agreed specifications and following clearly defined procedures with regard to dealing with risks arising from incidents and accidents. You will be expected to take immediate action appropriate to the circumstances.

2. **The types of contingencies** which are likely to be encountered are:

   - Slips trips and falls
   - Hydrocarbon alarm
   - Hazardous gas alert

3. **The Actions to be taken** will be clearly defined and incorporated into company procedures.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit is suitable for a combination of assessment in the workplace and simulation.

Unit C2.4: Contribute to effective working relationships in process engineering maintenance

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 8.02

This unit is about your competence in developing and maintaining effective working relationships with others. This may include colleagues, supervisors and visitors and may be frequent or infrequent. Both oral and written methods will be used.

This unit is common to the Electrical, Mechanical and Instrument & Control disciplines.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving the unit you must:

a. Establish and maintain productive working relationships
b. Deal with disagreements in an amicable and constructive way so that good relationships are maintained
c. Keep others informed about work plans or activities which affect them
d. Seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities
e. Respond in a timely and positive way when others ask for help or information

Knowledge and Understanding

i. You must have an appreciation of how to **create and maintain working relationships**, and why it is important to do so.

ii. You must have an appreciation of what the types of **problems** are that can **affect relationships**, and what actions can be taken to deal with specific difficulties.

iii. You must have an appreciation of what your own and others responsibilities are with regards to **lines of communication and responsibilities.**

Scope of this standard

1. **The Groups of people with which relationships should be maintained** including people with whom you come into contact as part of your work role either on a frequent or regular basis, or occasionally only. Typical relationships could be with:

   - Those for whom you have responsibility
   - Clients
   - Other disciplines
   - Security/safety personnel
   - Those to whom you are responsible
   - Colleagues
   - Suppliers

2. Effective working relations require **communication** with others. This could include:

   - Formal/informal
   - Oral
   - Written

   Examples could include:
   - Tool box talks
   - Safety feedback
   - Complaints
   - Appraisals/performance reviews.
   - Inductions
   - Production loop
   - Liaison between training and workplace contacts

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit is suitable for a combination of assessment in the workplace and simulation.

Unit I2.1: Carry out planned maintenance procedures on instrument and control plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 5.01

This unit is about your competence in maintaining instrument and control equipment in line with the manufacturers and organisational practices and procedures. You will be required to complete the maintenance procedures in a timely manner, follow procedures and complete the appropriate documentation. You will be following your organisations safe working practices and working within the work permit procedures.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Follow the relevant maintenance schedules to carry out the required work
c. Carry out the maintenance activities within the limits of your personal authority
d. Carry out the maintenance activities in the specified sequence and in an agreed time scale
e. Report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule
f. Complete relevant maintenance records accurately and pass them on to the appropriate person
g. Dispose of waste materials in accordance with safe working practices and approved procedures

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working practices and procedures required within your work area.

ii. You must have an appreciation of the **maintenance schedules and related specifications** to which you are expected to work. This could be expected to include:

- Authorisation procedures
- Product worksheets
- Tests
- Internal maintenance schedules
- Safe working practices
- Methods statement
- Records
- Timescales

iii. You must have a working knowledge of the **maintenance methods and procedures**

iv. You must have an appreciation of **maintenance records and documentation procedures**.

v. You must have a working knowledge of your responsibilities for the **care and control of equipment** that you use.

vi. You must have a working knowledge of **maintenance authorisation procedures** and limits of responsibility and authority in line with company and manufacturers procedures.

vii. You must have an appreciation of the appropriate methods and **waste disposal procedures** in relation to legislation, regulation and procedures for waste segregation.

viii. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. **The level and extent of responsibility** will involve you being responsible for ensuring the maintenance procedures are carried out safely by following company defined procedures. You will be accountable for the integrity of the work and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorized signatories within the PTW system

2. The **plant or equipment to be maintained** could include:

- Level transmitters
- Flow transmitters
- Pressure transmitters
- Temperature transmitters

3. The **maintenance procedures and activities** to be followed are fully defined within the company maintenance procedures. Typical procedures could include:

- Tightening of connections
- Adjusting to within tolerances
- Checking of outputs
- Replacement of worn damaged components
- Checking and adjusting movements/components
- Inspection for damage/ wear/ corrosion/ movement
- Replacement of worn/damaged/corroded components
- Cleaning.

4. The **quality standards and accuracy to be achieved** are as set down in QA and QC specifications.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression"**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit is suitable for a combination of assessment in the workplace and simulation.

Unit C2.5 : Prepare work areas for the maintenance of process plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 2.11

This unit is about your competence in preparing the work area in order to carry out the maintenance of process plant and equipment. You will be involved in activities such as clearing materials and equipment from the worksite, providing service supplies and competing isolations. You will be following your organisations safe working practices and working within the work permit procedures.

This unit is common to the Electrical, Mechanical and Instrument & Control disciplines.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Ensure that the work environment is suitable for the work activities to be undertaken
c. Ensure that all necessary service supplies are connected and ready for use
d. Prepare the work areas so that they are ready for the engineering activities to be carried out
e. Make sure that required safety arrangements are in place to protect other workers from activities likely to disrupt normal working
f. Report completion of preparations in line with organisational procedures
g. Deal promptly and effectively with problems within your control and report those that cannot be resolved

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of what the **work area preparation requirements and methods** are. This could be expected to include the location and whether condition of work environments are appropriate in terms of:

   - Layout
   - Accessibility
   - Isolations
   - Safety
   - Security

iii. You must have a working knowledge of the potential problems and **consequences of not preparing work areas correctly** in relation to hazards which may occur.

iv. You must have an appreciation of the connection and operation of the applicable **supply services and connection procedures** related to the equipment relevant to the industry, including pneumatic, electrical and hydraulic tools.

v. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. **The level and extent of responsibility** will involve you being responsible for ensuring the preparations are carried out safely by following company defined procedures. You will be accountable for the integrity of the work and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorized signatories within the Permit to Work system

2. **The type of work area to be prepared** would include:

   - Chemicals manufacturing and petroleum sites
   - Controlled operational areas
   - Offshore installations

3. The **type of work area preparations** could involve ensuring that the location and condition of work environments are appropriate in terms of:

   - Layout
   - Security
   - Safety
   - Isolations (where relevant)
   - Accessibility

4. The **type of work area protection and safety requirements** will take into account any hazards due to the particular working conditions that could also include:

   - Working on access structures (scaffold)
   - At height
   - Inside systems and plant
   - Adverse weather conditions
   - Confined spaces
   - In shafts

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit I2.2: Prepare materials for the maintenance of instrument and control process plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 2.12

This unit is about your competence in preparing the materials in order to carry out the maintenance of instrument and control plant and equipment. You will be required to check the quality and quantity of the selected materials determine how the materials should be prepared and report on completion. You will be following your organisations safe working practices at all times and working within the work permit procedures.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must**:**

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Obtain the required materials and check them for quantity and quality
c. Determine how the materials need to be prepared
d. Carry out the preparations using suitable equipment
e. Report completion of preparations in line with organisational procedures
f. Deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of how to **identify the materials** you are to use **and recognise defects** in the quality of them.

iii. You must have a working knowledge of the **types of handling and preparation methods** and techniques needed for different materials.

iv. You must have a working knowledge of what your responsibilities are for ensuring the security of the **tools and equipment and their control procedures** that you use.

v. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. **The level and extent of responsibility** will involve you being responsible for ensuring the preparations are carried out safely by following company defined procedures. You will be accountable for the integrity of the work and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorized signatories within the PTW system

2. **The type and complexity of material preparations** involve standard treatments and/or require taking instrument readings for analysis. Typical preparation could include:

- Identification
- Storage
- Confirming alignment
- Setting out
- Cleaning
- Protecting/preserving
- Security
- Precision measuring
- Checking quality and quantity
- Asset/product orientation

3. **The types of materials** could include materials and/or components used in the engineering activity, including:

- Final control transmitters
- Components
- Test equipment
- Spare parts

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit I2.3 : Prepare process plant and equipment in support of instrument and control engineering activities

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 2.13

This unit is about your competence in preparing equipment in order to carry out the maintenance of instrument and control plant and equipment. You will be required to obtain the equipment, ensure it in a safe condition and advise the appropriate people. You will be following your organisations safe working practices and working within the work permit procedures.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Obtain all the required equipment and ensure that it is in safe and usable condition
c. Carry out the necessary preparations to equipment in line with work requirements
d. Make sure that required safety arrangements are in place to protect other workers from activities likely to disrupt normal working
e. Report completion of preparations in line with organisational procedures
f. Deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have a working knowledge of **equipment preparation methods and procedures**. This could be expected to include checking the working condition and operation of standard equipment, including safety checks and inspections.

iii. You must have an appreciation of the **types of equipment** which may be used. This could be expected to include fixed (machine) and or portable (hand or machine).

iv. You must have an appreciation of what your responsibilities are for the **equipment care and control procedures**. This could be expected to include ingress protection ratings, explosion protection rating equipment, corrosion, portable appliance testing, heating and ventilation and permit systems.

v. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. **The level and extent of responsibility** will involve you being responsible for ensuring the preparations are carried out safely by following company defined procedures. You will be accountable for the integrity of the work and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorized signatories within the PTW system

2. **The Equipment safety checks** and inspections will be carried out to ensure that there are no obvious faults present, in accordance with company procedures.

3. The **types of equipment to be prepared** could include:

   - Protective clothing/equipment
   - Lifting & handling equipment
   - Access structures (typically ladders, steps, trestles, youngman boards, temporary staging, access hoists… "cherry-pickers")
   - Process equipment
   - Tools
   - Safety equipment/harnesses
   - Temporary electrical supplies

4. **The types of equipment preparation** could involve selection, inspection, changing settings or the calibrating as well as routine checks on its condition, operation, suitability and safety, in compliance with company procedures.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

.

Unit C2.6 : Prepare loads for moving

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 2.14

This unit is about your competence in confirming the weight of the load, selecting the appropriate method, selecting and checking the equipment before moving the loads in line with organisational procedures. You will be involved in activities such as confirming the weight of the load, selecting slings and shackles, paying particular attention to lifting points and the balance of the load and ensuring safety of the work area. You will be following your organisations safe working practices and working within the work permit procedures.

This unit is common to the Electrical, Mechanical and Instrument & Control disciplines.

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Performance Statements

In achieving this unit, you must,

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Establish the weight of the load to be moved
c. Determine the method and select suitable equipment to move the load
d. Check that the equipment to be used is capable of moving the load safely
e. Determine a suitable route for moving the load minimising risk to people and property
f. Ensure that the load is secured and protected before moving operations start
g. Deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.
You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have a working knowledge of the **lifting, moving and handling equipment, methods and techniques** to be followed. This may include:

- Slings and strops
- Trolleys (powered or manual)
- Winches
- Rollers
- Hoists
- Jacks (hydraulic or screw)

iii. You must have a working knowledge of how to establish the **weight of loads** by using:

- Manufacture details
- Equipment labels
- Observation

iv. You must have a working knowledge of **what slinging and lifting methods and techniques** can be applied. This may include:

- Slings
- Strops
- Shackles

v. You must a working knowledge of how to care for **lifting equipment and what control procedures** are in place. This may include:

- Storage
- Location
- Colour codes

vi. You must have a working knowledge of the types of **defects and faults** that are possible with lifting equipment. This may include:

- Incorrect certification date
- Frayed slings

vii. You must have working knowledge and understanding of **route planning methods and techniques.** This may include:

- Overhead
- Access points
- Walkways

viii. You must have working knowledge and understanding what **reporting lines and procedures** to be followed as designated by the company procedures and could involve the:

- Asset owner
- Permit controller
- OIM
- Plant supervisor
- Work site colleagues

Scope of the standard

1. **The moving methods and techniques** to be used. This must include safe manual handling techniques as well as power assisted methods.

2. **The type of lifting, moving and handling equipment** to be used of which the following are examples:

- Hoists
- Chain blocks
- Winches
- Hydraulic jacks

3. **The characteristics of load** to be moved which will take into account the:

- Weight
- Shape
- Lifting points
- Balance points

4. **The type of location**, i.e. the ease of access and final destination of load.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit C2.7 : Move loads

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 4.08

This unit is about your competence in moving loads using manually or power controlled equipment. You will be involved in activities such as positioning the equipment, attaching the lifting equipment, moving the load and positioning the load once it is in its final location. You will be following your organisations safe working practices and working within the work permit procedures.

This unit is common to the Electrical, Mechanical and Instrument & Control disciplines.

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Performance Statements

In achieving this unit, you must,

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines.
b. Position the moving equipment so that the weight of the load is evenly distributed
c. Attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage
d. Confirm that the load is secure before moving
e. Move the load over the selected, suitable route
f. Position and release the load safely in its intended final location

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have working knowledge of the different **methods and techniques of moving loads.** This could be expected to include:

- Slings and strops
- Trolleys (powered or manual)
- Chain blocks
- Winches
- Rollers
- Hoists
- Jacks (hydraulic or screw)

iii. You must have working knowledge of the appropriate **lifting, moving and handling equipment used when moving loads.** This could be expected to include:

- Slings and strops
- Trolleys (powered or manual)
- Winches
- Rollers
- Hoists
- Jacks (hydraulic or screw)

- Chain blocks

iv. You must have working knowledge of what **methods and techniques to be used to assess the load**. This could be expected to include:

- Manufacture details
- Equipment labels and name plates
- Observation

v. You must have working knowledge of how to complete **route planning and what techniques to use** taking account of the obstructions and lifting opportunities.

vi. You must have working knowledge of how to **care for lifting equipment** care and what **control procedures** are in place. This could be expected to include:

- Storage
- Colour coding
- Location

vii. You must have working knowledge of what **reporting lines and procedures** to be followed as designated by the company procedures and could involve the:

- Asset owner
- Plant supervisor
- Permit controller
- Work site colleagues
- OIM

Scope of the standard

1. **The level and extent of responsibility** will involve you being responsible for ensuring the equipment and work site is safe for others or yourself to work in by following defined procedures. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorized signatories within the PERMIT TO WORK system

2. **The moving methods and techniques** to be used will be as defined by the company and manufacturer

3. **The type of moving, lifting and handling equipment** to be used of which the following are examples:

- Hoists
- Chain blocks
- Winches
- Hydraulic Jacks

4. **The type and characteristics of the load** to be moved taking into account

- Weight
- Shape
- Lifting points
- Balance points

5. **The final location of the load** could include:

- Process Modules
- Workshops
- Containers

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit No I2.4 : Assemble components of instrument and control process plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 3.12

This unit is about your competence in assembling instrument and control components. You will be required to follow instructions, ensure you have the correct tools and equipment to complete the assembly and deal with problems as they arise. You will be following your organisations safe working practices and working within the work permit procedures.

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Follow the relevant instructions, assembly drawings and any other specifications
c. Ensure that the specified components are available and that they are in a usable condition
d. Use the appropriate methods and techniques to assemble the components in their correct positions
e. Secure the components using the specified connectors and securing devices
f. Check the completed assembly to ensure that all operations have been completed and the finished assembly meets the required specification
g. Deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of **assembly drawings and related specifications**.

iii. You must have an appreciation of which **assembly methods and techniques** can be used for fitting components together. Also, why the order of fitting components affects efficiency and cost effectiveness and how standard practices can be modified to influence these.

iv. You must have working knowledge of the **quality control procedures and recognition of assembly defects.** This should include when confirmation tests should be undertaken, what the types of confirmation test are that should be undertaken for different assets and how should they be applied in line with company procedures.

v. You must have an appreciation of **handling equipment and procedures.** This could be expected to include manual handling methods and procedures.

vi. You must have working knowledge of the equipment **preparation methods and procedures** in relation to checking the working condition and operation of standard equipment, including safety checks and inspections.

vii. You must have an appreciation of what your responsibilities are for ensuring the **care and security of tools and equipment** that you use.

viii. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. The **level and extent of responsibility** in the context of this standard, extends to interpreting a specification, selecting and applying appropriate methods and tests to achieve the best possible result in the conditions applying. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner albeit you will be expected to refer to others. Authorisation for proceeding with the work will be given by authorised signatories within the PTW system**.**

2. The **type and complexity of the assembly to be produced** are of one technology and/or are of a robust nature. There may be a number/variety of connections to be made and these may be easy to access or to achieve.

3. The **assembly methods and techniques to be used** may require the application of several different, sequential assembly techniques relevant to the technologies of the asset. Typical techniques could include:

- Using threaded fasteners
- Clamping
- Connecting male/female connectors
- Soldering
- Sealing
- Terminating cables /impulse lines

The assembly is made by following sequential procedures which do not account for every stage involved and/or need to be modified to achieve the results required.

4. The **typical assets/components** could include:

- Battery systems
- Final control elements
- Hand tools
- Analysers

5. The **quality standards and accuracy to be achieved** are as set down in internal QA and QC specifications.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit No I2.5: Remove components from instrument and control process plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 5.03

This unit is about your competence in removing instrument and control components. You will be required to identify, remove, check the condition, mark and store for further use. You will be following your organisations safe working practices and working within the work permit procedures.

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Establish, and where appropriate, mark component orientation for re-assembly
c. Ensure that any stored energy or substances are released safely and correctly
d. Remove the required components using approved tools and techniques
e. Take suitable precautions to prevent damage to components, tools and equipment during removal
f. Check the condition of the removed components and record those that will require replacing
g. Label and store the removed components in an appropriate location
h. Store or discard the removed components in accordance with approved procedures
i. Maintain documentation in accordance with organisational requirements

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of the **engineering drawings and related specifications** to which you will be expected to work, including:

- Technical drawings (component, assembly, general arrangements, isometrics, 1st and 3rd angle projections)
- Method statements and product worksheets
- Tolerances

iii. You must have working knowledge of what the types of **component removal methods and techniques,** i.e. isolations and connections, are that have to be made, and which tools, equipment and methods can be used to remove specific components from specific products/assets.

iv. You must have an appreciation of how to assess and **identify the condition** of removed components.

v. You must have working knowledge of how to **label and store components for re-use** including the marking systems for specific components and connections.

vi. You must have an appreciation of how to **dispose of unwanted components and substances.** This should include what substances could be released during the removal of components, which risks are associated with the release of substances, and where to access information on the environmental standards, including an appreciation on COSHH, SEPA and company procedures.

vii. You must have an appreciation of what your responsibilities are for ensuring the **care and security of tools and equipment** that you use.

viii. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. The **level and extent of responsibility** in the context of this standard, extends to working with a detailed specification, varying techniques and activities and applying appropriate methods to achieve the best possible result in the conditions applying. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner albeit you will be expected to refer to others. Authorisation for proceeding with the work will be given by authorised signatories within the PTW system**.**

2. The **Equipment to be worked on** will be operational plant and equipment and should include:

- Level transmitters
- Flow transmitters
- Pressure transmitters
- Temperature transmitters

3. The **type of components to be removed** may be robust or fragile. Robust components are those which are resistant to most forms of damage or disruption during their working lives.

Fragile components are those which are easily disrupted or damaged. Damage or disruption could be due to physical, chemical or other forces (e.g. Electro-magnetic).

Typical robust components could be:

- Motors
- Control Panels
- Mechanical linkages
- Control Valves
- Metering devices
- Instrument piping

Typical fragile components could be:

- Sub-components
- Instrumentation and Control metering devices
- Circuit boards
- Springs
- Diaphrams
- Components of Instrumentation and Control panels.

4. Removal techniques or procedures to be followed

The components to be removed may require a sequential series of steps to complete the removal. The component may be difficult to access and may be surrounded by other fragile/valued components and may need specialised tooling requirements. Removal may involve more than 1 differing technologies and/or involve a significant number of fragile components.

The specifications to which a candidate would be expected to work to could include:

- Product worksheets
- Technical drawings (components, assembly, general arrangement, isometrics).
- Method statements
- Maintenance schedules.

5. The removal operations will be simple. Simple removal of components refers to situations where the component is quickly and easily removed from its position. Typical examples could include lifting out of plug-in components and undoing threaded fasteners to release the component.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.

Unit No I2.6 Replace components in instrument and control process plant and equipment

This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 5.04

This unit is about your competence you need to replace components in instrument and control process plant and equipment using the correct methods and techniques. You will be following your organisations safe working practices at all times and working within your organisations work permits procedures.

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Performance statements

In achieving this unit you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Obtain all the required components and ensure that they are in a suitable condition for replacement and fit for purpose
c. Ensure that any replacement components used meet the required specification
d. Take adequate precautions to prevent damage to components, tools and equipment during replacement
e. Replace the components in the correct sequence using appropriate tools and techniques
f. Make any necessary settings or adjustments to the components to ensure they will function correctly
g. Deal promptly and effectively with problems within your control and report those that cannot be solved
h. Maintain documentation in accordance with organisational requirements

Knowledge and Understanding

i. You must have a working knowledge and understanding of what your responsibilities are in respect of **Health, Safety** and **Environment**. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others.

   You must have a working knowledge of the **relevant regulations** and the safe working **practices and procedures** required within your work area.

ii. You must have an appreciation of **engineering drawings and related specifications** and the specifications to which you will be expected to work, including technical drawings (component, assembly, general arrangements, isometrics, 1st and 3rd angle projections), method statements and product worksheets, tolerances.

iii. You must have working knowledge of the **component replacement methods and techniques** including the types of reconnection that have to be made, and which tools, equipment and methods can be used to replace specific components in specific products/assets.

iv. You must have working knowledge of **handling e.g. methods and techniques.** This could be expected to include manual handling pressure and thermal methods and techniques.

v. You must have an appreciation of what your responsibilities are for ensuring the security of **tool and equipment care and control procedures** that you use. This could be expected to include ingress protection ratings, explosion protection rating, corrosion, portable appliance testing, heating and ventilation and permit systems.

vi. You must have an appreciation of your responsibilities with regard to the **reporting lines and procedures** in your working environment.

Scope of this standard

1. **The level and extent of responsibility** in the context of this standard, extends to working with a detailed specification, varying techniques and activities and applying appropriate methods to achieve the best possible result in the conditions applying. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner albeit you will be expected to refer to others. Authorisation for proceeding with the work will be given by authorised signatories within the PTW system**.**

2. **The equipment to be worked** on will be simple. This will require the removal/replacement of components refers to situations where the component is quickly and easily removed from/replaced in its position. Typical examples could include lifting out of plug-in components and undoing threaded fasteners to release the component.

3. **The type of components to be replaced** will be robust. Robust components are those which are resistant to most forms of damage or disruption during their working lives. Typical robust components could be:

   - Metering devices
   - Motors
   - Mechanical linkages
   - Control valves
   - Control panels

4. **The assembly methods and techniques to be used** may require a sequential series of steps to complete the removal. The component may be difficult to access and may be surrounded by other fragile/valued components and may need specialised tooling requirements. The specifications to which a candidate would be expected to work to could include:

   - Product worksheets
   - Technical drawings (components, assembly, general arrangement, isometrics).
   - Method statements
   - Maintenance schedules.

5. **The assembly operations** will be simple. Simple replacement of components refers to situations where the component is quickly and easily removed from its position. Typical examples could include lifting out of plug-in components and undoing threaded fasteners to release the component.

6. The **quality standards and accuracy** to be achieved are as set down in the work specifications.

Glossary of Terms

The Knowledge and Understanding levels expressed above indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression "**an appreciation**" is intended to indicate a level of knowledge and understanding equating to:-

- an awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
- how and where to find further detail and information that you will need; and
- having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation.

The expression "**working knowledge and understanding**" indicates you are able to:

- identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials;
- describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote "Chapter and verse". Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail; and
- interpret and apply the information obtained to your role, your working practice and in your expected working environment.

Assessment Strategy Statement

This statement should be read in conjunction with the full Cogent assessment strategy and associated addendum.

In the context of N/SVQ assessment it has been agreed that this unit can only be assessed in the workplace.