



Assessor's Guidelines for the SVQ 2 and 3 Process Engineering Maintenance at SCQF levels 5 and 6

Publication date September 2011
Publication code: PB 5931

The information in this publication may be reproduced in support of SQA qualifications. If it is reproduced, SQA should be clearly acknowledged as the source. If it is to be used for any other purpose, then written permission must be obtained from the Support Materials Development Officer at SQA. It must not be reproduced for trade or commercial purposes.

Published by the Scottish Qualifications Authority
The Optima Building, 58 Robertson Street, Glasgow, G2 8DQ
Ironmills Road, Dalkeith, Midlothian, EH22 1LE

www.sqa.org.uk

© Scottish Qualifications Authority 2011

Contents

About SVQs and the SCQF	2
How are standards defined in SVQs?	4
Who is involved in SVQs?.....	5
The steps involved in assessing a candidate for an SVQ	5
1 The SVQ in Process Engineering Maintenance SCQF level 5/7	6
Structure of the SVQs	6
An Assessment Strategy for the SVQ	17
Why would people be interested in the SVQ?	17
How do candidates begin?.....	18
Choosing the SVQ.....	18
2 Preparing to assess the SVQ	23
Your role and your candidate's role	23
Planning.....	24
Assessment plan	25
Selecting methods of assessment	26
Methods of assessment	27
Observation	27
Questioning	30
Other methods of assessment	31
Personal statements.....	32
Witness testimony	33
Simulation.....	34
Other sources of evidence	34
3 Generating evidence	35
Observation.....	36
Questions and candidate responses	38
Candidate's personal statement.....	40
Witness testimony	43
Filling the gaps.....	45
Guidance and support to candidates	46
Judging candidate evidence and making an assessment decision.....	46
Insufficient evidence.....	47
Authenticating candidates' evidence.....	47
4 Recording achievement.....	48
Completing the Unit progress record.....	49
Unit progress record	50
Using the index of evidence	51
Index of evidence	52
Completing the Element achievement record.....	53
Element achievement record.....	54
5 Further information	56
What else should I read?	56
Appendix 1 — Blank recording forms	57
Appendix 2 — Assessment Strategy (Extract).....	67
Appendix 3 — Evidence Requirements	72
Appendix 4 — Expert Witness Strategy	136

About this guide

This guide provides some practical examples of how to assess your candidates for the **SVQs 2 and 3 Process Engineering Maintenance at SCQF levels 5 and 6**. You may be able to think of other ways of assessing your candidates and recording your decisions about their competence.

Using assessments based on these examples does not guarantee successful verification — it is still your responsibility to ensure that internal quality assurance procedures are followed.

Introduction

This introduction provides a brief overview of SVQs and how they are assessed in the workplace. If you are already familiar with the concept of SVQs, you may wish to go to the next section.

About SVQs and the SCQF

Scottish Vocational Qualifications (SVQs) are work-based qualifications which set the level of occupational competence for each sector of the economy and are usually delivered in the workplace or in partnership with a college or other training provider. The qualifications have been designed by standards-setting bodies made up of experienced practitioners who represent employers, professional bodies, trade unions, education and voluntary organisations.

Each standards-setting body is responsible for developing national standards which define *what* employees (or potential employees) must be able to do, *how well*, and *in what circumstances*, to show that they are competent in their work.

Each SVQ which a standards-setting body develops has to fit into a broad framework which allows qualifications in the UK and throughout Europe to be compared.

There are SVQs for nearly all occupations in Scotland and they are available at SVQ levels 1–5. SVQs are currently notionally placed in the SCQF as the individual SVQs may be at differing SCQF levels and have differing amount of credit points, depending on the structure and context of the SVQ. SVQs are a means of recognising the skills and knowledge people need in employment, ie job competence. Successful completion of an SVQ provides clear evidence that the learner works to nationally recognised occupational standards.

Each Unit defines one aspect of a job or work-role, and says what it is to be competent in that aspect of the job. To be awarded a full SVQ, learners must achieve each of the SVQ Units which make it up by demonstrating that they are competent in that aspect of the job. The Units which make up the SVQ can also be taken as freestanding awards. Some SVQs or SVQ Units are incorporated into other awards or programmes including HNCs and Modern Apprenticeships.

Explanation of levels

SVQ1 (SCQF level 4)	Competence involves the application of knowledge and skills in the performance of a range of varied work activities, most of which may be routine or predictable.
SVQ2 (SCQF level 5)	Competence involves the application of knowledge and skills in a significant range of varied work activities, performed in a variety of contexts. At this level, there will be activities, which are complex or non-routine and there is some individual responsibility and autonomy. Collaboration with others, perhaps through membership of a work group or team, may often be a requirement.
SVQ3 (either SCQF level 6 or 7)	Competence involves the application of knowledge and skills in a broad range of varied work activities, most of which are complex and non-routine. There is considerable responsibility and autonomy, and control or guidance of others is often present.
SVQ4 (either SCQF level 8 or 9)	Competence involves the application of knowledge and skills in a broad range of complex technical or professional work activities, performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources is often present.
SVQ5 (SCQF level 11)	Competence involves the application of skills and a significant range of fundamental principles across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources feature strongly, as do personal accountability.

For further information on SCQF go to www.scqf.org.uk.

How are standards defined in SVQs?

All SVQs consist of standards which can be broken down into various parts.

Units define the broad functions carried out in the sector, and are made up of a number of **Elements**. These **Elements** describe the activities which employees have to perform, and will require candidates to demonstrate certain skills or Knowledge and Understanding.

Note — All Units in the Process Engineering Maintenance standards are single element Units.

The quality of performance in what people must be able to do — how well they have to perform — is described by **Performance Criteria**. These may also be called **statements of competence** or **what candidates should do**.

The section on **Knowledge and Understanding** says what candidates must know and understand, and how this knowledge applies to their jobs.

You may also come across standards containing statements on **scope**. These statements could, for example, list the equipment that candidates are expected to be familiar with and use in their occupational area.

Increasingly, you may see changes to this format as standards become more user-friendly and are written in plain English. For example, there may be some standards containing **Range Statements** or **Evidence Requirements**, but over time these should disappear. You may, however, find that information on the context, nature and amount of evidence which is required to prove competence (which used to be given in Range Statements and Evidence Requirements) is now defined in the **assessment guidance** for the qualification. Assessment guidance is drawn up by the awarding body and is packaged along with the standards to form the SVQ.

Who is involved in SVQs?

There are several roles:

- ◆ **the candidate:** the person who wants to achieve the SVQ (eg an employee)
- ◆ **the assessor*:** the person who assesses the candidates and decides if they are competent (eg supervisor)
- ◆ **the internal verifier*:** an individual nominated by the centre (eg a company) who ensures that assessors apply the standards uniformly and consistently (eg supervisor's line manager)
- ◆ **the External Verifier*:** an individual appointed by SQA who ensures that standards are being applied uniformly and consistently across all centres offering the SVQ

*Assessors and verifiers in centres will be asked by SQA to prove they have the appropriate occupational competence to assess and verify the SVQ. Occupational competence has been defined by the standards-setting body in the Assessment Strategy for this SVQ(s) — see SQA's website: www.sqa.org.uk.

Assessors and verifiers are also expected to obtain an appropriate qualification in assessment and verification — this can be the Assessor/Verifier Units (the national standards for assessment and verification), or an alternative qualification which SQA also recognises.

The steps involved in assessing a candidate for an SVQ

In deciding whether a candidate should achieve an SVQ, you will go through these stages:

- ◆ planning for assessment
- ◆ generating and collecting evidence of the candidate's competence in the Units
- ◆ judging the evidence of the candidate's ability and making an assessment decision based on the evidence
- ◆ recording the assessment decision and the candidate's achievement

1 The SVQ Process Engineering Maintenance SCQF level 5/6

The SVQs in Process Engineering Maintenance have been developed by Cogent and are intended for people in Oil and Gas Extraction, Chemicals Manufacturing and Petroleum Industries.

These people may be working as maintenance technicians or production technicians. They will require skills and knowledge in the maintenance and operation of process engineering plant and equipment.

The SVQs are designed to be assessed in the workplace, or in conditions of the workplace. Examples of the settings or centres in which the SVQs are likely to be delivered include: chemicals manufacturing plants, petrochemicals plants, oil refineries, oil and gas terminals and offshore installations.

Structure of the SVQs

This section lists the Units which form the SVQs in Process Engineering Maintenance. The SVQs have been designed to identify competences specific to each of the maintenance disciplines — Electrical, Instrument and Control and Mechanical.

Level 2 SVQ Process Engineering Maintenance (Electrical) SCQF level 5 (GD0D 22)

Mandatory Units

Each candidate must achieve all **five** of the mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP2R 04	5	4	1	Reinstate the Work Area after Completing the Maintenance of Process Plant and Equipment
FP2T 04	5	4	2	Hand Over Process Plant and Equipment
FP2V 04	5	4	3	Deal with Hazards in Process Engineering Maintenance
FP2W 04	5	2	4	Contribute to Effective Working Relationships in Process Engineering Maintenance
FP4A 04	5	4	14	Carry Out Planned Maintenance Procedures on Electrical Process Plant and Equipment

Optional Units — Group A

Candidates must also complete **one** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC ref	Title
FP30 04	5	8	5	Prepare Work Areas for the Maintenance of Process Plant and Equipment
FP39 04	5	4	6	Prepare Loads for Moving During Process Engineering Maintenance
FP3F 04	5	5	7	Move Loads During Process Engineering Maintenance
FP4C 04	5	3	15	Prepare Materials for the Maintenance of Electrical Process Plant and Equipment
FP4D 04	5	3	16	Prepare Process Plant and Equipment in Support of Electrical Engineering Activities

Optional Units — Group B

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC ref	Title
F94E 04	5	4	17	Assemble Components of Electrical Process Plant and Equipment
FP4F 04	5	4	18	Remove Components from Electrical Process Plant and Equipment
FP4G 04	5	4	19	Replace Components in Electrical Process Plant and Equipment

Level 2 SVQ Process Engineering Maintenance (Instrument and Control) SCQF level 5 (GD0E 22)

Mandatory Units

Each candidate must achieve all **five** of the mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP2R 04	5	4	1	Reinstate the Work Area after Completing the Maintenance of Process Plant and Equipment
FP2T 04	5	4	2	Hand Over Process Plant and Equipment
FP2V 04	5	4	3	Deal with Hazards in Process Engineering Maintenance
F92W 04	5	2	4	Contribute to Effective Working Relationships in Process Engineering Maintenance
FP5T 04	5	4	37	Carry Out Planned Maintenance Procedures on Instrument and Control Plant and Equipment

Optional Units — Group A

Candidates must also complete **one** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC ref	Title
FP30 04	5	8	5	Prepare Work Areas for the Maintenance of Process Plant and Equipment
FP39 04	5	4	6	Prepare Loads for Moving During Process Engineering Maintenance
FP3F 04	5	5	7	Move Loads During Process Engineering Maintenance
FP5V 04	5	3	38	Prepare Materials for the Maintenance of Instrument and Control Process Plant and Equipment
FP5W 04	5	3	39	Prepare Process Plant and Equipment in Support of Instrument and Control Engineering Activities

Optional Units — Group B

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC ref	Title
FP5X 04	5	4	40	Assemble Components of Instrument and Control Process Plant and Equipment
FP5Y 04	5	4	41	Remove Components from Instrument and Control Process Plant and Equipment
FP60 04	5	4	42	Replace Components in Instrument and Control Process Plant and Equipment

Level 2 SVQ Process Engineering Maintenance (Mechanical) SCQF level 5 (SQA Group Award GD0F 22)

Mandatory Units

Each candidate must achieve all **five** of the mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP2R 04	5	4	1	Reinstate the Work Area after Completing the Maintenance of Process Plant and Equipment
FP2T 04	5	4	2	Hand Over Process Plant and Equipment
FP2V 04	5	4	3	Deal with Hazards in Process Engineering Maintenance
FP2W 04	5	2	4	Contribute to Effective Working Relationships in Process Engineering Maintenance
FP6N 04	5	4	60	Carry Out Planned Maintenance Procedures on Mechanical Process Plant and Equipment

Optional Units — Group A

Candidates must also complete **one** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP30 04	5	8	5	Prepare Work Areas for the Maintenance of Process Plant and Equipment
FP39 04	5	4	6	Prepare Loads for Moving During Process Engineering Maintenance
FP3F 04	5	5	7	Move Loads During Process Engineering Maintenance
FP6P 04	5	3	61	Prepare Materials for the Maintenance of Mechanical Process Plant and Equipment
FP6R 04	5	3	62	Prepare Process Plant and Equipment in Support of Mechanical Engineering Activities

Optional Units — Group B

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP6T 04	5	4	63	Assemble Components of Mechanical Process Plant and Equipment
FP6V 04	5	4	64	Remove Components from Mechanical Process Plant and Equipment
FP6W 04	5	4	65	Replace Components in Mechanical Process Plant and Equipment

Level 3 SVQ Process Engineering Maintenance (Electrical) SCQF level 7 (GD0G 23)

Mandatory Units

Each candidate must achieve all of the mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP3J 04	6	5	8	Hand Over Process Engineering Plant and Equipment
FP3K 04	6	5	9	Reinstate the Work Area after Completing the Maintenance of Process Engineering Plant and Equipment
FP3L 04	6	7	10	Minimise Risks to Life, Property and the Environment
FP3M 04	6	6	11	Work Safely, Minimise Risk and Comply with Emergency Procedures
FP3P 04	6	2	12	Contribute to Effective Working Relationships
FP4H 04	7	8	20	Carry Out Planned Maintenance Procedures on Electrical Plant and Equipment
FP4J 04	7	6	21	Deal with Variations and Defects in Electrical Plant and Equipment
FP4K 04	7	8	22	Diagnose and Determine the Causes of Faults in Electrical Plant and Equipment

Optional Units — Group A

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP3R 04	6	7	13	Prepare Work Areas for Engineering Activities
FP4L 04	6	5	23	Prepare Equipment in Support of Electrical Engineering Activities
FP4M 04	6	4	24	Prepare Materials for the Maintenance of Electrical Plant and Equipment
FP4N 04	7	6	25	Adjust Electrical Plant and Equipment to Meet Operational Requirements
FP4P 04	7	6	26	Remove Components from Electrical Plant and Equipment
FP4T 04	7	6	27	Replace Components in Electrical Plant and Equipment
FP4W 04	7	6	28	Determine the Feasibility of Repair of Components from Electrical Plant and Equipment

Optional Units — Group B

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP4Y 04	7	4	29	Interpret Detailed Electrical Information from Technical Sources
FP55 04	7	6	30	Read and Extract Information from Electrical Engineering Drawings and Specifications
FP57 04	7	6	31	Identify and Suggest Improvements to Working Practices and Procedures Whilst Maintaining Electrical Plant and Equipment
FP59 04	7	6	32	Establish that an Electrical Engineering Process has been Completed to Specification
FP5C 04	7	6	33	Test the Performance and Condition of Electrical Plant and Equipment
FP5E 04	7	7	34	Monitor the Performance and Condition of Electrical Plant and Equipment
FR47 04	7	7	35	Assess the Performance and Condition of Electrical Plant and Equipment
FP5R 04	7	6	36	Inspect Electrical Plant and Equipment

Level 3 SVQ Process Engineering Maintenance (Instrument and Control) SCQF level 7 (GD0J 23)

Mandatory Units

Each candidate must achieve all of the mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP3J 04	6	5	8	Hand Over Process Engineering Plant and Equipment
FP3K 04	6	5	9	Reinstate the Work Area after Completing the Maintenance of Process Engineering Plant and Equipment
FP3L 04	6	7	10	Minimise Risks to Life, Property and the Environment
FP3M 04	6	6	11	Work Safely, Minimise Risk and Comply with Emergency Procedures
FP3P 04	6	2	12	Contribute to Effective Working Relationships
FP64 04	7	8	43	Carry Out Planned Maintenance Procedures on Instrument and Control Systems
FP65 04	7	6	44	Deal with Variations and Defects in Instrument and Control Systems
FP66 04	7	8	45	Diagnose and Determine the Causes of Faults in Instrument and Control Systems

Optional Units Group A

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP3R 04	6	7	13	Prepare Work Areas for Engineering Activities
FP67 04	6	5	46	Prepare Equipment Required for Maintaining Instrument and Control Systems
FP68 04	6	4	47	Prepare Materials Required for Maintaining Instrument and Control Systems
FP69 04	7	6	48	Adjust Instrument and Control Systems to Meet Operational Requirements
FP6A 04	7	6	49	Remove Components from Instrument and Control Systems
FP6C 04	7	6	50	Replace Components in Instrument and Control Systems
FP6D 04	7	6	51	Determine the Feasibility of Repair of Components from Instrument and Control Systems

Optional Units Group B

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP6E 04	7	4	52	Interpret Detailed Instrument and Control Information from Technical Sources
FP6F 04	7	6	53	Read and Extract Information from Instrument and Control Engineering Drawings and Specifications
FP6G 04	7	6	54	Identify and Suggest Improvements to Working Practices and Procedures Whilst Maintaining Instrument and Control Systems
FP6H 04	7	6	55	Establish that an Instrument and Control Engineering Maintenance Process has been Completed to Specification
FP6J 04	7	6	56	Test the Performance and Condition of Instrument and Control Systems
FP6K 04	7	7	57	Monitor the Performance and Condition of Instrument and Control Systems
FP6L 04	7	7	58	Assess the Performance and Condition of Instrument and Control Systems
FP6M 04	7	6	59	Inspect Instrument and Control Systems

Level 3 SVQ Process Engineering Maintenance (Mechanical) SCQF level 7
(GDOH 23)

Mandatory Units

Each candidate must achieve all of the mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP3J 04	6	5	8	Hand Over Process Engineering Plant and Equipment
FP3K 04	6	5	9	Reinstate the Work Area after Completing the Maintenance of Process Engineering Plant and Equipment
FP3L 04	6	7	10	Minimise Risks to Life, Property and the Environment
FP3M 04	6	6	11	Work Safely, Minimise Risk and Comply with Emergency Procedures
FP3P 04	6	2	12	Contribute to Effective Working Relationships
FP6X 04	7	8	66	Carry Out Planned Maintenance Procedures on Mechanical Plant and Equipment
FP6Y 04	7	6	67	Deal with Variations and Defects in Mechanical Plant and Equipment
FP70 04	7	8	68	Diagnose and Determine the Causes of Faults in Mechanical Plant and Equipment

Optional Units — Group A

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP3R 04	6	7	13	Prepare Work Areas for Engineering Activities
FP71 04	6	5	69	Prepare Equipment in Support of Mechanical Engineering Activities
FP74 04	6	4	70	Prepare Materials for the Maintenance of Mechanical Plant and Equipment
FP75 04	7	6	71	Adjust Mechanical Plant and Equipment to Meet Operational Requirements
FP76 04	7	6	72	Remove Components from Mechanical Plant and Equipment
FP77 04	7	6	73	Replace Components in Mechanical Plant and Equipment
FP78 04	7	6	74	Determine the Feasibility of Repair of Components from Mechanical Plant and Equipment

Optional Units — Group B

Candidates must also complete **two** of the following Units in addition to the mandatory Units.

SQA ref	SCQF level	SCQF credit points	SSC Unit ref	Title
FP79 04	7	4	75	Interpret Detailed Mechanical Information from Technical Sources
FP7A 04	7	6	76	Read and Extract Information from Mechanical Engineering Drawings and Specifications
FP7C 04	7	6	77	Identify and Suggest Improvements to Working Practices and Procedures whilst Maintaining Mechanical Plant and Equipment
FP7D 04	7	6	78	Establish that a Mechanical Engineering Maintenance Process has been Completed to Specification
FP7E 04	7	6	79	Test the Performance and Condition of Mechanical Plant and Equipment
FP7F 04	7	7	80	Monitor the Performance and Condition of Mechanical Plant and Equipment
FP7G 04	7	7	81	Assess the Performance and Condition of Mechanical Plant and Equipment
FP5P 04	7	6	82	Inspect Mechanical Plant and Equipment

An Assessment Strategy for the SVQ

As part of their/its review of the SVQ(s), the standards-setting body Cogent has developed an Assessment Strategy which defines a range of requirements:

- ◆ the occupational expertise of assessors and verifiers
- ◆ a definition of simulation
- ◆ definition of the workplace
- ◆ information on a model of independent assessment or external quality control

The relevant parts of the Assessment Strategy are published on SQA's website (www.sqa.org.uk), and both SQA and centres must comply with these requirements.

Why would people be interested in the SVQ?

People will take SVQs for a variety of reasons: to gain promotion, to prove their job competence, or for personal development. There will be other reasons too. One of the first things to do is to find out why your candidates want to do the SVQ, and to advise them of the appropriateness of the qualification. If anyone is acting as a coach or mentor to your candidates, they might help you to do this.

An assessor for the SVQ in Process Engineering Maintenance you need to take into account the experience of different candidates as this could impact on the amount and types of evidence required. Candidates could range from the inexperienced trainee technician to a very experienced technician with a proven track record and substantial accredited prior learning (APL).

How do candidates begin?

Choosing the SVQ

You should make sure that candidates get guidance before starting out on an SVQ — they need advice to ensure that their existing job remit, skills, experience, and their plans for progression, are matched to the SVQ selected. It does not have to be you as the assessor, who carried out the matching process, but whoever has responsibility for this should ensure that the assessment opportunities available to the candidate are also considered.

Experienced Technician

An experienced technician candidate would typically be a Maintenance Technician who has been employed for a minimum of three years in their current location/organisation, with access to historical maintenance records to use as evidence.

Example

Keith is a very experienced technician. He has worked as a Mechanical Technician for ten years, but does not possess any formal qualifications. He wanted to gain a qualification which would give him national recognition of the skills he already had. As he had a lot of experience in performing maintenance tasks, the Training and Competence Officer in his company advised him to consider an SVQ in Process Engineering Maintenance at level 3.

When the Training and Competence Officer matched Keith's job remit and existing skills and experience with the SVQ, it emerged that Keith should be able to generate sufficient evidence to meet the requirements of the following SVQ Units:

- ◆ Carry Out Planned Maintenance Procedures on Mechanical Plant and Equipment
- ◆ Deal with Variations and Defects in Mechanical Plant and Equipment
- ◆ Diagnose and Determine the Causes of Faults in Mechanical Plant and Equipment
- ◆ Remove Components from Mechanical Plant and Equipment
- ◆ Replace Components in Mechanical Plant and Equipment
- ◆ Test the Performance and Condition of Mechanical Plant and Equipment
- ◆ Inspect Mechanical Plant and Equipment

The Training and Competence Officer arranged for an assessor within the company to provide Keith with guidance on how to collect evidence and construct a portfolio in order to achieve these Units.

Keith also had some experience in relation to five further Units, though some planning was required to provide him with the opportunity to demonstrate competence in these areas.

The Units were:

- ◆ Hand Over Process Engineering Plant and Equipment
- ◆ Reinstatement of the Work Area after Completing the Maintenance of Process Engineering Plant and Equipment
- ◆ Minimise Risks to Life, Property and the Environment
- ◆ Work Safely, Minimise Risk and Comply with Emergency Procedures
- ◆ Contribute to Effective Working Relationships

The assessor explained to Keith that he would observe and assess him for these five Units whilst he was being assessed for the other seven Units. A simulated emergency situation was set up to complete the assessment of the fourth Unit, *Work Safely, Minimise Risk and Comply with Emergency Procedures* and plans were made to supplement the assessment of the fifth Unit, *Contribute to Effective Working Relationships* through a combination of questioning and witness testimonies.

As Keith was considered an 'experienced practitioner', the assessor was satisfied that he could use a lot of his accredited prior learning and proven knowledge and skills as evidence of his competence. The assessor asked Keith to provide evidence in support of this and suggested that the following typical types of evidence would be appropriate:

- ◆ detailed CV incorporating areas of experience with appropriate dates and locations
- ◆ copies of apprentice papers (indentures or similar)
- ◆ copies of formal qualifications (relevant NC/HNC/HND/City & Guilds etc)
- ◆ details of relevant training courses, preferably with a competence-assessed outcome (vendor training/specialist maintenance techniques/specific training required to comply with industry guidance or regulatory requirements)
- ◆ other relevant in-house technical skills and aptitudes and/or qualifications that would also provide evidence to be assessed by the assessor

The assessor would then use a more holistic approach to using observations thereby effectively reducing the number of assessment observation occasions required. In this instance, the assessor suggested that Keith provide evidence for each Unit from at least one maintenance task. This would inevitably require Keith to collect evidence from two or three different tasks over a period of time to ensure that all Units were covered. The assessor also suggested that evidence from one complex task would likely cover several Units. For example:

- ◆ evidence of jobs including work permits, risk assessments, job cards/work orders, handover notes, written reports, logs etc
- ◆ a brief front sheet for each job containing a bullet point outline of the task
- ◆ signature on the front sheet from Keith confirming that it is his own work and all evidence was generated by himself
- ◆ signature on the front sheet from Keith's team leader/supervisor or assessor confirming authenticity of his evidence and that the work was carried out satisfactorily. Input from qualified assessors to this requirement would strengthen the value and validity of the evidence
- ◆ signature and comments on the front sheet from OIM or Plant Manager as internal auditor of the pack

Keith would also provide the assessor with a detailed report/checklist on the different types of equipment and systems that he has experience of carrying out maintenance activities on. The assessor could then, if necessary, access maintenance records to confirm that Keith had sufficient and appropriate maintenance experience across a range of equipment. Appendix 4 provides a checklist format example that could be used to record the range of different equipment that maintenance work has been carried out on.

The assessor could also use witness testimonies provided by Keith's supervisors that confirmed his claims. Other relevant skills and aptitudes and/or qualifications that Keith has would also be provided as evidence to be assessed by the assessor.

All these arrangements were agreed by everyone involved and then written up in an assessment plan for Keith.

On completion of the agreed assessment plan, the assessor would then be able to evaluate all the evidence Keith had provided to ensure that there was sufficient evidence to confirm his competence.

Trainee or Less Experienced Technician

'Less experienced candidate' would typically apply to candidates in similar circumstances to the following examples:

- ◆ trainee technician who has completed a college course and is now working as a trainee technician on a two-year work placement
- ◆ a relatively inexperienced technician who has come from another industry and is new to the oil and gas industry
- ◆ an inexperienced technician who is new to the installation/plant and has no historical evidence or record as such with his current employer
- ◆ a technician who has been involved in construction and commissioning work with very little exposure to carrying out complex maintenance activities

Example

Martin is a trainee technician. He completed a college course and is now working as an electrical technician on a two-year work placement. He is now required to work towards completing the SVQ in Process Engineering Maintenance (Electrical) at level 3.

As Martin has little experience in performing maintenance tasks he needs to generate sufficient evidence within the two-year work placement period to meet the requirements of the following SVQ Units:

- ◆ Carry Out Planned Maintenance Procedures on Electrical Plant and Equipment
- ◆ Deal With Variations and Defects in Electrical Plant and Equipment
- ◆ Diagnose and Determine the Causes of Faults in Electrical Plant and Equipment
- ◆ Remove Components from Electrical Plant and Equipment
- ◆ Replace Components in Electrical Plant and Equipment
- ◆ Test the Performance and Condition of Electrical Plant and Equipment
- ◆ Inspect Electrical Plant and Equipment

Arrangements were made for an assessor within the company to provide Martin with guidance on how to collect evidence and construct a portfolio to achieve these Units.

Martin will also need to gain experience in relation to five further Units, however, some further planning was required in order to provide him with the opportunity to demonstrate competence in these areas.

The Units were:

- ◆ Hand Over Process Engineering Plant and Equipment
- ◆ Reinstate the Work Area after Completing the Maintenance of Process Engineering Plant and Equipment
- ◆ Minimise Risks to Life, Property and the Environment
- ◆ Work Safely, Minimise Risk and Comply with Emergency Procedures
- ◆ Contribute to Effective Working Relationships

The assessor explained to Martin that he would observe and assess him for these five Units (listed above) whilst he was being assessed for the other seven Units.

A simulated emergency situation was set up to complete the assessment of the fourth Unit, *Work Safely, Minimise Risk and Comply with Emergency Procedures* and plans were made to supplement the assessment of the fifth Unit, *Contribute to Effective Working Relationships* through a combination of questioning and witness testimonies.

As Martin was considered to be an 'inexperienced practitioner', the assessor needed him to provide all evidence by carrying out a variety of maintenance tasks on a range of equipment and systems. This would allow the assessor to assess competence during naturally-occurring observation opportunities. In this instance, the assessor suggested that Martin provide evidence for each Unit from at least **three** maintenance tasks. This would inevitably require Martin to collect evidence from a range of tasks to ensure that all Units were adequately covered.

Martin would also need to provide the assessor with a detailed report/checklist on the different types of equipment and systems that he has carried out maintenance activities on, so that he could demonstrate that he has had exposure to a wide range of equipment. The assessor could then, if necessary, access maintenance records to confirm that Martin had sufficient and appropriate maintenance experience across a range of equipment. Appendix 4 provides a checklist format example that could be used to record the range of different equipment that maintenance work has been carried out on.

The assessor could also use witness testimonies provided by Martin's supervisors to confirm his claims. Other relevant skills, aptitudes and/or qualifications that Martin has would also be provided as evidence to be assessed by the assessor. (Refer to Appendix 4: Equipment Lists and Skills).

All these arrangements were agreed by everyone involved and then written up in an assessment plan for Martin.

On completion of the agreed assessment plan, the assessor would then be able to evaluate all the evidence Martin had provided to ensure that it was sufficient to confirm his competence. It would be expected that the evidence would consist of the following, as a minimum:

- ◆ At least **three** 'job packs' covering each technical Unit, incorporating appropriate observation/activity reports and supporting documents. One job pack could cover several Units depending on the type and range of maintenance activities carried out.
- ◆ A checklist of other equipment and systems that Martin claims he has experience of carrying out maintenance activities on over his two-year work placement.
- ◆ Copies of maintenance and training records to support Martin's claims. Copies of any other relevant skills and aptitudes and/or qualifications that Martin has would also be useful.
- ◆ Witness testimonies to support Martin's claims. (These would be used to support maintenance and training records if the assessor deemed that these were insufficient on their own.)

2 Preparing to assess the SVQ

This section offers practical advice on how to begin to go about assessing your candidates for the SVQ. This advice is offered as examples of good practice — you may develop your own approaches to assessing your candidates which also work well.

Your role and your candidate's role

Assessing the SVQ will involve several stages. Both you and the candidate should be clear on your roles in the assessment process before you begin.

Your role

- ◆ ensure candidates understand what is to be assessed and how it is to be assessed
- ◆ ensure the conditions and resources required for assessment are available
- ◆ help candidates to identify and gather evidence
- ◆ observe and record candidates carrying out the activities described in the standards — records should say what has been observed, how it was carried out, and what it demonstrates
- ◆ assess products of the candidate's own work
- ◆ question candidates and record results
- ◆ help candidates to present evidence
- ◆ authenticate the evidence candidates provide
- ◆ judge evidence and make assessment decisions
- ◆ identify gaps or shortfalls in candidates' competence
- ◆ provide feedback to candidates throughout the assessment process
- ◆ record achievement

Candidates' role

- ◆ prepare for assessment — become familiar with the standards, what is to be assessed and how it is to be assessed
- ◆ help to identify sources of evidence and how these could be assessed
- ◆ carry out activities, and/or produce products of own work, and/or answer questions
- ◆ gather and present evidence
- ◆ receive and act on feedback from the assessor

Planning

In planning for assessment, you will find it helpful to meet with your candidate and plan what is to be assessed, in what way, and when and where the assessment is to take place. This discussion can be confirmed in the form of an agreed assessment plan between you and your candidate.

You should treat assessment plans as working documents — they can be updated and changed as you review progress with your candidate.

As you are planning assessment, don't forget to make the most of opportunities to *integrate* assessment. This means planning to assess an activity which draws on the contents of different Units or Elements. It can be a practical and cost-effective way of assessing your candidate's competence.

If you are a new assessor working towards your appropriate assessor Units (the national standards in assessment) you will need copies of completed assessment plans as part of your evidence.

To help you plan for assessment, we have produced an assessment plan which covers Unit(s) 13; 69; 70.

You will notice that we have included spaces to enter dates when the assessment plan has been reviewed. Any gaps identified during these reviews should be discussed with your candidates and noted for action in the assessment plan.

Assessment plan

Units	13; 69; 70				
Activities	Performance Criteria (PC)	Method of assessment/Sources of evidence	Date of assessment	Evidence already available	Links to other Units (PC and range)
Preparing the work area, equipment and materials in order to carry out the maintenance of plant and equipment.	13 PC 2, 3, 4, 7 13 PC 1 13 PC 1, 5, 6	Observation Witness testimony Work Permit	31/08/2011	Ref 6 Ref 4	69 PC 1, 2, 3, 6, 70 PC 1, 2, 3, 4 69 PC 1, 70 PC 1 69 PC 1, 4, 5, 70 PC 1, 5
Questioning for knowledge and understanding not apparent from performance to be identified from 2nd review	PC 1, 7	Questions	01/09/2011		69 PC 1, 7 70 PC 1, 7

Assessor's signature	<u>David Gannon</u>	1st review due	<u>28/08/2011</u>
Candidate's signature	<u>Keith Campbell</u>	2nd review due	<u>30/08/2011</u>
Date of agreement	<u>26/08/2011</u>	Date of completion	<u>01/09/2011</u>

Selecting methods of assessment

The methods of assessment you use should be valid, reliable and practicable.

- ◆ By *valid* we mean that the assessment method should be appropriate to the standards
- ◆ By *reliable* we mean that the assessment method should ensure consistent results when used with different candidates, different assessors and on different occasions
- ◆ By *practicable* we mean that the method ensures that the assessment makes best use of available resources, equipment and time

Before you assess a candidate, you must make sure that the methods of assessment you have chosen to use, along with any assessment materials (such as questions and sample answers) have been agreed within your centre through its system of internal quality assurance. This system is often called *internal verification* — its purpose is to help to ensure that assessment methods are valid, reliable and practicable.

There are both benefits and challenges when you are assessing SVQs in the workplace, or in conditions in the workplace. When you select methods of assessment, you should try to offer the candidate the benefits of workplace assessment and minimise any potential difficulties.

The benefits might be:

- ◆ assessments being conducted in the candidate's workplace under naturally occurring conditions
- ◆ the candidate's familiarity with the equipment and facilities
- ◆ the assessment process is conducted at a pace that is comfortable for the candidates
- ◆ your observations can be totally unobtrusive as you work alongside your candidate
- ◆ your candidate can produce supporting documentary evidence such as logs, records, reports etc, as part of their daily work
- ◆ assessment plans can be arranged and/or modified as operational circumstances dictate

The challenges might be:

- ◆ ensuring that normal work routines are not unnecessarily disrupted or delayed by the assessment process
- ◆ co-ordinating assessments with candidates doing shiftwork
- ◆ preventing candidates from being subjected to undue extra stress or pressure brought about by the assessment process
- ◆ assessments being conducted in the presence of the candidate's colleagues
- ◆ the task and assessment process could be made more difficult by ambient conditions, such as darkness or adverse weather conditions

Example

You may agree with a level 3 candidate who has to demonstrate how to *Diagnose and Determine the Causes of Faults in Mechanical Plant and Equipment* (Unit 68), that this will be carried out by observation as and when an opportunity arises. If you are an assessor, either working alongside or supervising the candidate, you would be well-placed to observe the candidate's performance using a prepared 'observation checklist' and to question the candidate during the observation. Your questions might cover the candidate's knowledge of different diagnostic methods and the range of typical faults that could occur in this piece of equipment.

Methods of assessment

Assessment may involve a range of assessment methods. For SVQs, some of the most commonly used methods are observation, product evidence, and questioning.

Observation

Observation by an assessor is considered to be the most valid and reliable method of assessment. It can be organised in a variety of ways:

- ◆ working alongside the candidate
- ◆ arranging to visit when naturally-occurring activities are carried out by the candidate
- ◆ arranging for activities to take place

Observation by the assessor can often be supplemented by other types of assessment methods such as questioning. For example, it may be appropriate to ask oral questions of candidates as they carry out naturally-occurring activities.

You might agree with a level 3 candidate who is preparing to carry out a planned mechanical maintenance routine on a section of plant that you will observe them preparing the worksite, equipment and materials (Units 13, 69, 70). This would be a naturally-occurring opportunity to observe your candidate carrying out a planned activity and to assess them against the standards. You could also allow your candidate to provide evidence of knowledge of how they would 'deal promptly and effectively with problems within their control and report those that cannot be resolved' (Unit 13 PC7).

More examples

- ◆ A mechanical technician needs to *Carry out Planned Maintenance Procedures on Mechanical Plant and Equipment* (Level 2 Unit 60 and Level 3 Unit 66). You could observe the candidate carrying out a planned maintenance routine on a gas compressor. The opportunity to use observation to assess for other Units (integrated assessment opportunity) should also be discussed with the candidate and covered in the assessment plan — Level 2 Units such as 1, 5 and Level 3 Units 71, 67 would be ideal. Remember that it is not necessary to observe the candidate throughout the entire duration of the task — indeed, this is not always possible or practical. Instead, you would question the candidate where performance evidence did not fully demonstrate competence against all performance standards.
- ◆ Observation would also be ideal to assess candidates *Remove Components from Mechanical Plant and Equipment* (Level 2 Unit 64 and Level 3 Unit 72). Again, the opportunity for integrated assessment could be taken if this activity was identified in the assessment plan as part of a planned maintenance routine. Assuming that the components will need to be replaced again, you could also observe the candidate *Replace Components in Mechanical Plant and Equipment* (Level 2 Unit 65 and Level 3 Unit 73). As with all observation occasions, you would use questions to ensure that all performance standards were met.

Product evidence

As candidates work towards achieving the SVQ, they will produce evidence in the form of products of their work. The nature of this evidence can vary widely depending on what the candidate's job entails, but examples of product evidence include:

- ◆ Maintenance history records: you could inspect maintenance history records produced and maintained by the candidate. These records would provide evidence for standards which require the candidate to 'complete relevant maintenance records accurately and pass them on to the appropriate person' (Unit 60 PC 6 and Unit 66 PC 6).
- ◆ Daily logs, reports and other documents produced and maintained by candidate: where a candidate is being assessed for Level 2 Unit 2 and Level 3 Unit 8 — *Hand Over Process (Engineering) Plant and Equipment* and is required to 'produce and maintain records of the hand over in accordance with organisational procedures' (Unit 2 PC 5 and Unit 8 PC 5), logs, reports and records produced by the candidate would make ideal evidence.

Questioning

Candidates have to show that they can meet the knowledge specifications for the SVQs. For these SVQs, Knowledge and Understanding is specified for each Unit/PC. Much of a candidate's knowledge and understanding will be apparent from what they do or produce as part of their work, but this will not always be the case, and questioning can be a useful way of confirming what candidates know and understand.

Questions can be asked in a variety of forms, such as oral questions, short answer written questions, and multiple-choice.

You should be careful that the method of questioning does not go beyond the competence required for the SVQ and become a barrier to fair assessment. For example, some candidates will feel more comfortable with oral questions than written.

Example 1 (level 2 SVQ) Unit 3 *Deal with Hazards in Process Engineering Maintenance*

This Unit requires that candidates have a working knowledge and understanding 'of the **relevant regulations** and the safe working **practices and procedures** required within your work area'. Some evidence of this knowledge may have been demonstrated during observations, but you may still need to ask some questions, such as:

Question 1 If you were working with a hazardous substance, where would you be able to access information on how to deal with spills or treatment to be provided if someone has inhaled/ingested some of the substance?

Answer Control of Substances Hazardous to Health (COSHH) assessment sheets and/or Health and Safety Data Sheets for the particular substance.

Question 2 What Safe Operating Procedures (SOP) would you access for information and guidance when working with electrical equipment/pressurised systems?

Answer Candidate's response would be relative to their Mechanical, Electrical or Instrument disciplines, but they should be able to identify the title and reference number of the appropriate SOP. Examples could be:

- ◆ SOP 105 — Working with Pressurised Systems
- ◆ SOP 125 — Working with Electricity

Example 2 (level 3 SVQ) Unit 11 *Work Safely, Minimise Risk and Comply with Emergency Procedures*

This Unit requires that candidates have a working knowledge and understanding 'of the **evacuation procedures** from the work site to a safe area'. Again, some evidence of this knowledge may have been demonstrated during observations, but you might still need to ask some questions, such as:

Question 3 If you are working in the gas compression module/area and an alarm is sounded indicating that there is a gas release in that location, what action would you take?

Answer Make the work site safe, evacuate to the assigned assembly point/muster station and await further announcements/instructions.

Question 4 Where would you find information on emergency evacuation procedures?

Answer 4 The answer to this question would be site-specific. However, an example would be the 'Emergency Response Stations Bill' which is available on offshore installations.

Other methods of assessment

These methods, like questioning, are often used for authentication. See Section 3 for more about authenticating candidates' evidence.

Personal statements

You might sometimes find it helpful to ask a candidate to give an account of why they did an activity in a certain way or how they produced a product of their work. This is often referred to as a *personal statement*. You should take care to ensure that by asking candidates to produce such statements, you are not asking them to demonstrate competence beyond what is required by the standards. You should also be selective in the use of personal statements, and make sure they have not been produced as a substitute to a more valid, reliable and practical method of assessment.

In instances where it is not possible or practical for you to observe an activity, candidates can provide personal statements on how the task was carried out, describing what they did by referring to the standards of the Unit(s) covered. You could also use questions to support the statement where there are any gaps.

Candidates should write personal statements in a way that makes it obvious which parts of the statement refer to which part of each Unit being covered. It might not be necessary for a personal statement to cover the entire task from start to finish, as there may already be evidence provided for the preparation work (Level 2 Units 5, 61, 62 and Level 3 Units 13, 69, 70). For instance, if the task involves the removal and replacement of components (Level 2 Units 64, 65 and Level 3 Units 72, 73), the candidate would not have to go into great detail about the preparatory work carried out, as this will be covered when writing reports for the tasks used to satisfy Level 2 Units 5, 61, 62 and Level 3 Units 13, 69, 70.

Witness testimony

For practical reasons, you may not be able to observe all the activities carried out by your candidates, but might feel that other people may be able to provide a statement on what your candidates have been doing or producing as part of their work.

Statements of this kind are called *witness testimony*, and are often used to support other evidence produced by candidates. If witness testimony is used, you should, ideally, identify witnesses and opportunities for using their testimony as part of assessment planning.

You should bear in mind that the weight of the evidence will vary, depending on the knowledge and expertise of the person providing the witness testimony. You will have to take these factors into account as you make your judgement.

Strongest ↑	Someone with considerable occupational expertise in the candidate's area of work and who is familiar with the standards. This person may also be an assessor or internal verifier qualified with the A/V Units or 'D-Units'.
	Someone with considerable occupational expertise in the candidate's area of work and who is familiar with the standards.
	Someone with considerable occupational expertise in the candidate's area of work, but with no knowledge of the standards.
	Someone who may be a colleague of the candidate, but with no knowledge of the standards.
Weakest ↓	Someone with no or little knowledge of the candidate's work or no knowledge of the standards.

Witness testimony is unlikely to be sufficient in itself for a decision about the candidate's competence, and would normally be supplemented by questioning candidates.

In the assessment plan provided earlier in this document, it was agreed that witness testimony would be provided as evidence for Unit 13, PC 1) 'Work safely at all times, complying with health and safety and other relevant regulations and guidelines'.

This testimony would be provided by a supervisor or colleague who has worked with the candidate over a period of time. The testimony could also be used to cover other Units incorporating a similar performance statement, though it would need to be supplemented with other evidence, possibly including questioning, that was specific to the Unit being assessed.

Expert Witness Advisor

Where it is not possible or practical to have a qualified Assessor in the same location as a Candidate, an Expert Witnesses Advisor (EWA) can be used to support the assessment process by carrying out on-the-job observations. Further information on the approved requirements of an EWA are detailed in Appendix 4 — Expert Witness Advisor Strategy.

Simulation

Simulation is any structured assessment exercise involving a specific task which reproduces real-life situations.

On some occasions, it may not be practical to assess a candidate in real work. Examples might be where the standards require candidates to carry out emergency or contingency procedures, or where client confidentiality is an issue, or where a candidate's job role does not cover all aspects of the qualification.

Cogent has defined what it regards as simulation, and has specified in the standards when simulation is and is not acceptable. The standards also state when candidates must demonstrate competence in the workplace.

For more details on simulation and what constitutes performance in the workplace, look at the Assessment Strategy on SQA's website: www.sqa.org.uk.

An obvious example of where simulation can be useful for this SVQ is for the level 3 Unit 11 '*Work Safely, Minimise Risk and Comply with Emergency Procedures*'. We cannot create a real emergency situation for the purposes of assessment, though we can observe our candidate's performance during a simulated exercise. It is important that the simulated circumstances are as realistic as possible, and that the candidate is using equipment and facilities that replicate the workplace as closely as possible.

It is also possible and acceptable to allow simulation to be used by candidates where naturally-occurring occasions are few and far between. An example of this would be for the level 2 Unit 7 '*Move Loads During Process Engineering Maintenance*'. Your candidate could simulate the rarely-occurring operation of moving loads by demonstrating competence during a simulation either at the worksite or in an appropriately-equipped offsite training facility.

Other sources of evidence

Other sources of evidence can be previous experience or learning, case studies or assignments.

SQA's *Guide to Assessment* (see section 5) has more advice on methods of assessment and how to ensure that your assessment is valid, reliable and practicable.

3 Generating evidence

The methods of assessment you use should generate sufficient evidence to demonstrate the candidate's competence.

We described earlier the circumstances in which you might choose to use different methods of assessment. Starting on the next page, this section gives you examples of forms which you can use to record and present evidence of:

- ◆ observation (by the assessor)
- ◆ questions and candidate responses
- ◆ personal statement (produced by the candidate)
- ◆ witness testimony

There are blank forms which you can copy and use in assessment in Appendix 1.

Observation

For observation, note that the form asks you to record the skills and activities observed. This helps you to make a judgement on how the activity was carried out and what it demonstrates.

Observation record

Unit/Element(s)	Unit 13 — Prepare Work Areas for Engineering Activities
Candidate	Keith Campbell
Evidence index number	20
Date of observation	31/08/2011

Skills/activities observed	Performance Criteria covered
<p>Candidate preparing the work area for the maintenance of gas compressor CX0301A</p> <p>The candidate ensured that the work environment was suitable for the work activities to be undertaken by inspecting the work site and discussing the task with the Area Authority. A risk assessment was conducted by the candidate and the control measures recommended included that the area be barred off to ensure that there were no other conflicting activities being carried out at the same time. It was also identified by the candidate that the work could not commence until access scaffolding was erected; therefore a request was made to the Area Authority to have this done.</p> <p>These control measures were reviewed by the candidate and discussed and agreed with the Area Authority prior to a work permit being issued to him. Completion of the preparations was recorded in the Daily Log and referenced in the work permit.</p> <p>The candidate ensured that temporary lighting facilities were available and that the plant air system was operational in the work location.</p> <p>The candidate worked safely at all times and wore the appropriate PPE for the task. He also complied with appropriate health and safety procedures and adhered to regulations regarding risk assessment and work permit requirements. This observation was supported by witness testimony from the candidate's supervisor who testified that the candidate maintained this approach to working safely on all occasions.</p>	<p>2, 4, 5</p> <p>7</p> <p>6</p> <p>3</p> <p>1</p>

Knowledge and understanding apparent from this observation

The candidate's knowledge of the PTW system, Risk Assessment procedure and Operational Work Instructions were apparent from the way that he used them. His awareness of other health and safety requirements and issues demonstrated his knowledge and understanding of relevant regulations and guidelines.

Other Units/Elements to which this evidence may contribute

Units 11, 69, 70

Assessor's comments and feedback to candidate

Sufficient performance evidence was provided during this observation to meet all the assessment criteria for this Element.

Although some knowledge evidence was demonstrated during this observation, it will be necessary to conduct a questioning session to obtain further knowledge evidence.

I can confirm the candidate's performance was satisfactory.

Assessor's signature	<u>David Gannon</u>	Date	<u>31/08/2011</u>
Candidate's signature	<u>Keith Campbell</u>	Date	<u>31/08/2011</u>

Questions and candidate responses

This form can be used to record any questions you might ask the candidate to establish what they know and understand. You should note the candidate's responses on this form too.

Note that there is a space near the top of the form for you to record when, where, how and why you asked the questions.

Where you want to give the candidate written questions, this form could also be used.

Record of questions and candidate's answers

Unit	Unit 10 — Minimise Risks to Life, Property and the Environment
Element(s)	
Evidence index number	21
Circumstances of assessment	
Candidate was being assessed whilst carrying out planned maintenance procedures (Unit 66) on a gas compressor. The opportunity was also taken to assess the candidate for Unit 10. However it was not obvious from observation that there was sufficient evidence of the candidate's knowledge and understanding of how to 'identify hazards, assess the risks involved, minimise the risks by implementing control measures and providing ongoing monitoring'. The candidate gave oral answers to the following questions which were asked at the time of the assessment. Appropriate Performance Criteria are indicated against each question.	
List of questions and candidate's responses	
Q	What formally recorded procedures/systems are available to assist you to identify hazards and assess risks in the workplace? (<i>Performance Criteria 1, 5</i>)
A	The Safe Systems of Work procedures provide a formal 'electronic' risk assessment procedure which must be completed prior to any task commencing.
Q	Explain how this procedure is utilised to identify hazards and assess risks associated with carrying out a maintenance procedure on a gas compressor. (<i>Performance Criteria 2, 3, 6</i>)
A	I would first of all complete a 'Jobsite Check sheet' by visiting the worksite to identify any hazards. I would then use this information to assess the risks associated with these hazards and identify and implement appropriate precautions and control measures. I would use the information provided on the Risk Assessment document to ensure that all precautions and control measures were applied prior to commencement and maintained throughout the task.
Q	What particular hazards are associated with using electrically-powered tools for this task and what control measures would be implemented to reduce risks? (<i>Performance Criteria 2, 3</i>)
A	<ul style="list-style-type: none"> ◆ Hazards: Sparks from non intrinsically safe equipment could be an ignition source if gas were present. ◆ Poorly maintained equipment could have a potential for causing electrical shock. ◆ Control Measures: A portable gas monitor would need to be at the worksite at all times. ◆ All tools and equipment to be examined daily/before use and defects rectified immediately. ◆ Refer to Safe Operating Procedure 504: Portable electrically-operated equipment. ◆ Equipment to be isolated when left unattended.
Q	How would you inform all those who are affected of the risk control measures in place and clarify any implications for them as required? (<i>Performance Criteria 4, 5</i>)
A	Discuss the Risk Assessment at the 'tool box talk' and have all relevant personnel read and sign the risk assessment.

Assessor's signature David Gannon **Date** 31/08/2011

Candidate's signature Keith Campbell **Date** 31/08/2011

Candidate's personal statement

If a personal statement is being used as evidence, it should be completed by the candidate. The statement should record what they did, how and why they chose to carry out an activity or produce work in a certain way. Where other people may have been present during an activity and they may be able to provide witness testimony, the candidate should record how the statement links to other evidence in the column provided.

Personal statement

Date	Evidence index number	Details of statement	Links to other evidence (enter numbers)	Unit, Elements, PC covered
31/08/11	22	<p>This statement provides evidence of my competence to 'Adjust Mechanical Plant and Equipment to meet Operational Requirements'. This was achieved by carrying out the task of adjusting speed control on an emergency generator diesel engine.</p> <p>I carried out a task risk assessment which was reviewed by the Area Authority following discussions with myself. He then issued me with a work permit prior to commencing the task.</p> <p>I obtained specifications from the vendor's maintenance manual for this engine to ensure that I had the correct information and settings for this task.</p> <p>The scope of work for this task only required that I check the speed control mechanism and adjust it as necessary as I was not yet competent to carry out any intrusive maintenance work on the engine.</p> <p>I started the engine and allowed it to run for five minutes before checking the idling speed as per the vendor's manual instructions. As the speed was about 100rpm faster than the recommended 1,000rpm, I adjusted the throttle control mechanism until the speed was at the correct rpm. I allowed the engine to run for another five minutes before checking the speed to ensure that the adjustment was correct.</p> <p>During this period, the speed crept back up to the original 1,100rpm, therefore I attempted to adjust the throttle mechanism once again. During this operation I noticed that the threads on the adjusting screw were worn and this was the likely reason that the adjustment could not be maintained. I replaced the adjusting screw, adjusted the speed to 1,000rpm and observed that it maintained this speed over the five minute test duration.</p>	<p>23 (Risk assessment)</p> <p>24 (Work permit)</p> <p>25 (Page from Vendor's manual)</p> <p>26 (Job Card)</p> <p>25 (Page from Vendor's manual)</p>	

Date	Evidence index number	Details of statement	Links to other evidence (enter numbers)	Unit, Elements, PC covered
		Having successfully completed this task, I then recorded my findings and test results in the maintenance history records and the mechanical daily log, making mention of the fact that the adjusting screw was replaced.	27 (Copy of maintenance history report) 28 (Copy of daily log)	

Candidate's signature Keith Campbell

Date 25/08/11

Witness testimony

Remember when you begin to use witness testimony that it must be capable of being authenticated — even if the testimony itself is being used to authenticate a candidate's claim to competence.

To make sure the witness testimony is genuine, you must ensure that you have a record of who is acting as a witness, their relationship to the candidate (eg supervisor, client) address, telephone number and the date. There are spaces for this information in the form.

Witness testimony

SVQ title and level	Process Engineering Maintenance level 3
Candidate's name	Keith Campbell
Evidence index no	23
Index no of other evidence which this testimony relates to (if any)	
Element(s)	Unit 12 Contribute to Effective Working Relationships
Date of evidence	30 June 2011
Name of witness	William Hood
Designation/relationship to candidate	Maintenance Team Leader (Immediate line supervisor)
Details of testimony	
<p>I have worked with Keith as his team leader for over three years, and can testify to all the following statements.</p> <p>I have always found Keith to be a conscientious worker who gets on well with his colleagues. He makes a major contribution in co-ordinating the day-to-day operations within his responsibility, and is a valued member of the team.</p> <p>Productive working relationships are established and maintained with all colleagues, supervision and visitors (Unit 12 PC 1).</p> <p>Any disagreements with other team members are dealt with in an amicable and constructive way so that good relationships are maintained. (Unit 12 PC 2).</p> <p>Other team members are kept informed about work plans or activities which affect them (Unit 12 PC 3)</p> <p>Assistance is sought from other team members in a polite and courteous way without causing undue disruption to normal work activities (Unit 12 PC 4).</p> <p>Responds in a timely and positive way when others ask for help or information (Unit 12 PC 5).</p>	

I can confirm the candidate's performance was satisfactory.

Witness's signature William Hood **Date** 30/06/2011

Witness (please select the appropriate box):

- Holds A1/A2 or D32/D33 qualifications
- Is familiar with the SVQ standards to which the candidate is working

Filling the gaps

There may come a time when your candidate has provided evidence for most of the Unit (or SVQ), but there are some gaps. For example, you may find that certain situations, such as handling contingencies, have not arisen during assessment. Often these will relate to dealing with health and safety issues, or unexpected problems with workflow like delays in receiving information from another part of the organisation.

In this SVQ, such gaps are likely to occur in generating evidence for:

- ◆ Level 2 Unit 3 Deal with Hazards in Process Engineering Maintenance
- ◆ Level 3 Unit 11 Work Safely, Minimise Risk and Comply with Emergency Procedures

Both these Units contain performance statements that require your candidate to demonstrate their response when there is a need for them to:

- ◆ call for expert help in the event of contingencies occurring, using warning systems as appropriate
- ◆ take prompt and appropriate action to personal and third party injury as a first priority, and then to minimise risk of damage to property and equipment
- ◆ follow shutdown and evacuation procedures promptly and correctly
- ◆ deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with organisational policy and procedures

You may be able to overcome these by asking your candidates to prepare a personal statement outlining how they would deal with each of these situations, thereby demonstrating their competence. Alternatively you may wish to produce pre-set questions specifically aimed at prompting your candidate to provide appropriate responses that are relevant to these statements. An example question and expected response for the fourth statement above could be:

Question What action would you take if you were working on equipment that has been isolated from the hydrocarbon gas process and you detected gas leaking from a flanged joint you have just started to break?

Answer I would immediately tighten the flange back up, using the proper tools and adhering to the appropriate procedures. I would then make the work site safe, ensure that the area is vacated by all affected personnel and then inform the Area Authority.

Guidance and support to candidates

At all times during the assessment process — from planning through to making your assessment decision — feedback should be on-going, clear and constructive. Feedback should be given against the national standards by relating it to the evidence provided, including the knowledge specifications.

Where there are any shortfalls in a candidate's competence, you should discuss these with your candidate and make plans for re-assessment.

Judging candidate evidence and making an assessment decision

In judging candidate evidence, you must be satisfied that your candidates can work consistently to the required standard, and that the evidence they have produced is their own. You must consider whether your candidate understands and applies the knowledge evidence and how this links to performance evidence.

Evidence must:

- ◆ be relevant to the SVQ
- ◆ be authentic
- ◆ show current competence
- ◆ be sufficient to help you form a decision about the candidate's competence

Insufficient evidence

You have to judge whether the candidate has produced enough evidence required by the standards for you to reach a decision about their evidence.

Where there is insufficient evidence, you should say this to your candidate. You should tell them that it is not that they are not yet competent — there is simply not enough evidence on which to make a decision.

In this situation, your feedback to your candidates must help them produce more evidence and/or plan for further assessment.

Authenticating candidates' evidence

Authentication is required where you have not observed candidates' performance at first hand.

You can check whether a candidate has produced evidence which they claim shows their competence by questioning them or, if this is appropriate, asking them to produce a personal statement, using witness testimony, or seeking peer reports from other colleagues of the candidate.

Example

If your candidate has provided printed copies of daily logs and maintenance records that have been produced on a PC, you could request that these documents are countersigned by an appropriate person stating that these documents are attributable to the candidate. Such persons would normally be the candidate's team leader/supervisor or similar.

4 Recording achievement

You should retain all evidence — clearly referenced — for internal and external verification.

The candidate's evidence is normally kept in a file, often called a *portfolio*. These documents help you and your candidates to collect, present and cross-reference the evidence to the national standards. They are also a means of recording your assessment decisions, and they tell an External Verifier what stage a candidate has reached in achieving the SVQ.

Recording documents do not need to be paper-based — it is possible to use an electronic format for collecting and structuring the evidence. Whatever format you and your candidates choose to use, the documents must show what evidence was generated, the assessment decisions you made, how the evidence meets the standards, and where the evidence can be located. You should avoid photocopying items simply to put them in a portfolio — a clear explanation of where the evidence can be found (for example, in a filing cabinet) may be sufficient for the External Verifier to follow it up and include it in the visit.

There are various reasons why record-keeping is so important:

- ◆ it provides a way of tracking a candidate's progress in achieving an SVQ
- ◆ it helps candidates to make claims for certification of their competence
- ◆ internal verifiers and External Verifiers use the records to sample assessment decisions
- ◆ it helps us to monitor the quality assurance of our qualifications

If your candidates' evidence is incomplete, or cannot be located, or if there is inaccurate cross-referencing to the standards, there is a risk that an internal verifier or External Verifier will be unable to confirm your assessment decisions.

To help you and your candidate present evidence and record your assessment decision, we have provided examples of the forms which you and your candidate might use to compile the portfolio.

- ◆ Completing the Unit progress record
- ◆ Using the evidence index
- ◆ Completing the Element achievement record

These forms are also used in SQA's portfolio.

Completing the Unit progress record

You should complete this form each time your candidate achieves a Unit from the SVQ by adding your signature and the date next to the relevant Unit.

At this stage, candidates should make sure they have completed the recording documents correctly and that their evidence can be easily located. Only then should they circle the relevant Unit number at the top of the form. This enables both of you to see at a glance what stage the candidate is at in their SVQ.

Unit progress record

Qualification and level Process Engineering Maintenance (Mechanical) level 2

Candidate Martin Strachan

To achieve the whole qualification, you must prove competence in 5 **mandatory** Units and 3 **optional** Units.

Unit Checklist

Mandatory	1	2	3	4	14			
Optional	5	6	7	15	16	17	18	19

Mandatory Units achieved

Unit number	Title	Assessor's signature	Date
Unit 1	Reinstate the Work Area after Completing the Maintenance of Process Plant and Equipment	<i>Peter White</i>	12/04/2011
Unit 2	Hand Over Process Plant and Equipment	<i>Peter White</i>	12/04/2011
Unit 3	Deal with Hazards in Process Engineering Maintenance	<i>Peter White</i>	19/06/2011
Unit 4	Contribute to Effective Working Relationships in Process Engineering Maintenance	<i>Peter White</i>	19/06/2011
Unit 14	Carry Out Planned Maintenance Procedures on Mechanical Process Plant and Equipment	<i>Peter White</i>	09/05/2011

Optional Units achieved

Unit number	Title	Assessor's signature	Date
Unit 5	Prepare Work Areas for the Maintenance of Process Plant and Equipment	<i>Peter White</i>	09/05/2011
Unit 18	Remove Components from Mechanical Process Plant and Equipment	<i>Peter White</i>	19/06/2011
Unit 19	Replace Components in Mechanical Process Plant and Equipment	<i>Peter White</i>	19/06/2011

Using the index of evidence

The purpose of the index of evidence is to help you locate and work through the candidate's evidence. It should give you a summary of what evidence the candidate has collected, and where (eg in a portfolio) it can be found.

The index of evidence should be completed by entering:

- ◆ the index number for each piece of evidence
- ◆ a description of each piece of evidence
- ◆ the place or location where it can be found
- ◆ the initials of the internal verifier and the date (if they have sampled the candidate's evidence)

Ideally, it should be candidates themselves (with your support and encouragement) who complete the index.

You must make sure that the information in the evidence index is accurate when your candidates' portfolios are presented for assessment and verification — particularly the information about where the evidence can be located. This is important because we suggest that anything which has been produced as day-to-day work is kept in its normal location, but anything which has been produced through assessment for the SVQ, eg observation checklists, is filed in the candidate's portfolio. In this way, your candidate can avoid having to photocopy work products just for the sake of including them in a portfolio. It also means that evidence produced as a result of assessment is kept safely in a central file.

If the index of evidence is not completed with an accurate description and location of the evidence, there is a risk that an internal verifier or External Verifier might be unable to confirm your assessment decisions.

Index of evidence

SVQ title and level	Process Engineering Maintenance (Mechanical) level 2
----------------------------	--

Evidence number	Description of evidence	Included in portfolio (Yes/No) If no, state location	Sampled by the IV (initials and date)
20	Observation Record for Unit 13. Also contributes to Units 11, 69, 70	Yes	<i>RG 14/09/11</i>
21	Questionnaire for Unit 10	Yes	<i>RG 14/09/11</i>
22	Personal Statement for Unit 71	Yes	<i>RG 14/09/11</i>
23	Witness Testimony for Unit 12	Yes	<i>RG 14/09/11</i>

Completing the Element achievement record

To help you and your candidates cross-reference the evidence to the standards of the SVQs, we have provided records similar to those produced in the SQA portfolio. Use one record for each Element. The grids should be completed by:

- ◆ entering the evidence index number in the first column
- ◆ giving a brief description of the evidence in the second
- ◆ ticking the relevant boxes for the Performance Criteria (or statements of competence as they are sometimes known)
- ◆ entering the areas of knowledge and understanding the piece of evidence covers

If integrated assessment is used (linking PC or Elements across different Units) the evidence should be cross-referenced back to the relevant Units.

We have provided a completed example to show how to use the record.

Element achievement record

Unit 71 — Adjust Mechanical Plant and Equipment to Meet Operational Requirements

Element

Evidence Index No	Description of Evidence	PC/performance statements						Areas of knowledge and understanding/scope																
		1	2	3	4	5	6	7	8					1	2	3	4	5	6	7				
22	Personal Statement	✓	✓	✓	✓	✓	✓	✓							✓	✓		✓	✓					
23	Risk Assessment	✓												✓										
24	Work Permit	✓												✓										
25	Page from vendor’s manual		✓		✓									✓	✓		✓							
26	Job Card				✓											✓		✓	✓					
27	Maintenance History Report							✓								✓			✓					
28	Daily Log							✓								✓			✓					

Unit 71 — Adjust Mechanical Plant and Equipment to Meet Operational Requirements

Element

Notes/Comments

Some of the evidence provided for this Unit has been used for Units 11, 69 and 70.

The candidate has satisfied the assessor and internal verifier that the performance evidence has been met.

Candidate's signature Keith Campbell **Date** 31/08/11

Assessor's signature David Gannon **Date** 31/08/11

Internal verifier's signature Roland Grayson **Date** 14/09/11

5 Further information

What else should I read?

The publications listed here provide additional information on how to implement SVQs. Details of these and other SQA publications are available on our website at **www.sqa.org.uk** on the 'Publications, Sales and Downloads' section. They can be ordered from SQA's Business Development and Customer Support Team — telephone 0303 333 0330. Please note that there may be a charge for some of these publications.

Assessor/Verifier Units: assessment guidance

External Verification: A Guide for Centres

Guide to Assessment

Introduction to Assessment Arrangements for Schools and Colleges

SQA's Quality Framework: a guide for centres

Operational Help Centre

The Operational Guide for Centres has been replaced by the online Operational Help Centre on **www.sqa.org.uk**

Appendix 1 — Blank recording forms

Unit progress record

Qualification and level _____

Candidate _____

To achieve the whole qualification, you must prove competence in xx **mandatory** Units and xx **optional** Units.

Unit Checklist

Mandatory									
Optional									

Mandatory Units achieved

Unit number	Title	Assessor's signature	Date

Optional Units achieved

Unit number	Title	Assessor's signature	Date

Index of evidence

SVQ title and level	
----------------------------	--

Evidence number	Description of evidence	Included in portfolio (Yes/No) If no, state location	Sampled by the IV (initials and date)

Element achievement record

Unit

Element

Evidence Index No	Description of Evidence	PC/performance statements							Areas of knowledge and understanding/scope																				

Unit

Element

Notes/Comments

The candidate has satisfied the assessor and internal verifier that the performance evidence has been met.

Candidate's signature _____ **Date** _____

Assessor's signature _____ **Date** _____

Internal verifier's signature _____ **Date** _____

Assessment plan

Units					
Elements					
Activities	Performance Criteria (PC)	Method of assessment/ Sources of evidence	Date of assessment	Evidence already available	Links to other Units (Performance Criteria and Range)
Questioning for knowledge and understanding not apparent from performance to be identified from 2nd review					

Assessor's signature _____ **1st review due** _____
Candidate's signature _____ **2nd review due** _____
Date of agreement _____ **Date of completion** _____

Personal statement

Date	Evidence index number	Details of statement	Links to other evidence (enter numbers)	Unit, Elements, Performance Criteria, Performance statements, scope covered

Candidate's signature _____ Date _____

Observation record

Unit/Element(s) _____
Candidate _____
Evidence index number _____
Date of observation _____

Skills/activities observed	Performance Criteria covered

Knowledge and understanding apparent from this observation

Other Units/Elements to which this evidence may contribute

Assessor's comments and feedback to candidate

I can confirm the candidate's performance was satisfactory.

Assessor's signature _____ **Date** _____

Candidate's signature _____ **Date** _____

Witness testimony

SVQ title and level	
Candidate's name	
Evidence index no	
Index no of other evidence which this testimony relates to (if any)	
Element(s)	
Date of evidence	
Name of witness	
Designation/relationship to candidate	
Details of testimony	

I can confirm the candidate's performance was satisfactory.

Witness's signature _____ **Date** _____

Witness (please select the appropriate box):

- Holds A1/A2 or D32/D33 qualifications
- Is familiar with the SVQ standards to which the candidate is working

Record of questions and candidate’s answers

Unit	
Element(s)	
Evidence index number	
Circumstances of assessment	
List of questions and candidate’s responses	
Q	
A	
Q	
A	
Q	
A	
Q	
A	
Q	
A	

Assessor’s signature _____ **Date** _____

Candidate’s signature _____ **Date** _____

Appendix 2 — Assessment Strategy (Extract)

Note — The current version of the Assessment Strategy must always be used.

1 Mandatory use of evidence from workplace performance

- (a) Unless the use of simulation is expressly permitted within the qualification or Unit specific Evidence Requirements, evidence must demonstrate the candidate's competence in a real or realistic environment.
- (b) Knowledge and Understanding will be assessed via (pre-set and/or free form) questions, or by inference from performance, which cover three primary types of knowledge:
 - ◆ Knowledge of facts and procedures.
 - ◆ Understanding of principles, concepts and underpinning procedures.
 - ◆ How to apply principles and procedures in specific contexts.

All questions must be asked by the assessor at appropriate moments throughout the assessment process, preferably linked to observed activity and/or review of documentary evidence. The questions asked of, and answers provided by, the candidate must be recorded.

2 Use of Simulation

- (a) The qualification or Unit specific assessment requirements will define where evidence from simulation is acceptable, and in which contexts. A full summary of these requirements for existing N/SVQs can be found in Appendix A.
- (b) The requirements for any new qualifications accredited to the QCF from August 2008 onwards will be added to Appendix B on an incremental basis.
- (c) Simulation, where permissible, may be used to provide evidence in two different scenarios:
 - ◆ Scenario 1 — (applicable to any competence related qualifications, including N/SVQs) in order to demonstrate particular competences/Units that would be difficult or dangerous to demonstrate directly
 - ◆ Scenario 2 — (only applicable to NVQs) in order to demonstrate the acquisition of knowledge and skills where the achievement of a competence based qualification is not possible (eg as the basis for year 1 of an Advanced/Modern Apprenticeship — England and Wales only). This qualification would be Process Engineering Maintenance L2.

- (d) **Scenario 1 — Where simulation is used to demonstrate particular competences/Units that would be difficult or dangerous to demonstrate directly (eg in dealing with emergencies).**

NB This scenario is applicable to any competence related qualifications, including N/SVQs

- (e) Simulation should be used only where direct evidence of candidate performance cannot be obtained. Under these circumstances simulation may be used for summative assessment. Reasons for the use of simulation should be made clear to and agreed by the External Verifier and should include the following details:

- ◆ which competence (and standards) the simulation was designed to assess;
- ◆ the kind of equipment, facilities and physical environment proposed for the simulation of performance. It is unlikely that the External Verifier will approve a simulation if it does not involve real plant and equipment;
- ◆ how the simulated activity relates to the candidate's normal work context in terms of the pressures of time, access to resources and access to information, and the communication media; and
- ◆ how the simulation was set up and conducted, preferably supported by physical evidence such as photographs or inspection of a test rig.

Assessors, internal verifiers and External Verifiers should monitor the proportion of evidence generated via simulations to ensure that it is not the primary source of a candidate's claim to competence.

- (f) Under these circumstances simulations are reserved for aspects of competence illustrated by the following contexts:
- ◆ Where demonstration of emergency shutdown and related safety procedures would be; **dangerous and/or disruptive** to plant/environment/individuals; **too costly** such as total plant shutdown or dealing with spillage of dangerous substances; where **issues of confidentiality** restrict access to real work opportunities.
 - ◆ Demonstrating specific aspects of the operation which rarely or never occur due to effective QA systems.
 - ◆ The capacity to integrate disparate knowledge to cope with unforeseen events and to solve problems.
 - ◆ Aspects of working relationships and communications for which no opportunity has presented for the use of naturally occurring workplace evidence of candidate performance.

- (g) Simulation must enable the individual to demonstrate competence in a real or realistic work environment. In this context this means in specialist centres which replicate the workplace in terms of equipment and environment, reflect normal working situations and use relevant industrial or commercial standards and procedures. Short work placements or non-realistic work environments which do not replicate the pressures and requirements of normal commercial or industrial activities will not be acceptable. The bulk of the candidate's evidence should be drawn from their normal working activity and not consist of artificially contrived opportunities for one-off demonstration of competence. Similarly equipment must be that used in current commercial and industrial contexts. Procedures and standards used should be those which are nationally or internationally recognised or devised by specific companies as standard operating procedure.
- (h) Scenario 2 — Where simulation is used to demonstrate the acquisition of knowledge and skills where the achievement of a competence based qualification is not possible. In England and Wales, an apprentice who is registered on a Cogent Advanced Apprenticeship/Modern Apprenticeship may use simulation on the NVQ L2 Process Engineering Maintenance as part of the basic apprenticeship training. For any person completing this qualification that fails to complete the Advanced Apprenticeship/Modern Apprenticeship it will state on their completion certificate that this qualification was assessed in a simulated environment.**

The development of the Cogent 'Community Apprenticeship' model has highlighted the need to make NVQ L2 Process Engineering Maintenance available for completion through a college or other training provider 'off-site'. This is to enable the candidate to begin acquiring the skills and knowledge required to work in the Cogent industries prior to undertaking the NVQ level 3 with an employer in the normal way. Under these circumstances simulation may be used, with the prior agreement of the External Verifier, for summative assessment across the whole qualification.

- (i) Simulation must enable the individual to acquire his/her skills and knowledge in a realistic work environment. In this context this means in specialist centres which replicate the workplace in terms of equipment and environment, it reflects normal working situations and uses relevant industrial or commercial standards and procedures. Where possible providers should attempt to replicate the pressures and requirements of normal commercial or industrial activities. Equipment must be that used in current commercial and industrial contexts. Procedures and standards used should be those which are nationally or internationally recognised or devised by specific companies as standard operating procedure.
- (j) Circumstances outside of scenarios 1 and 2 above may also be considered suitable for the use of simulation with the agreement of the External Verifier, Awarding Body and Sector Skills Council. Under these circumstances simulation may be used for formative assessment only.

3 Occupational competence of assessor and verifiers

(a) Assessors:

- ◆ Must be competent in the units they are assessing. This is shown through the assessor having achieved the award they are assessing OR providing quality evidence to the external verifier that they are able to make valid judgements of the competence of candidates. This could be done through a combination of a) personal interview, b) review of employment histories and/or c) examination of the assessor's judgement during assessments.
- ◆ Must have a working knowledge of awards and a full understanding of that part of the award for which they have responsibility.
- ◆ Should hold or be working towards suitable qualifications for assessment, as defined by the Qualification Regulator(s). Organisations should consult with the relevant awarding organisation regarding approval for exemptions.

(b) Internal verifiers:

- ◆ Must be either working in the appropriate sector itself OR they must be able to demonstrate they possess practical and up-to-date knowledge of current working practices appropriate to the sector in which they are carrying out verification practices.
- ◆ Must be appointed by an approved centre.
- ◆ Must have a working knowledge of the awards they are internally verifying.
- ◆ Should hold or be working towards suitable qualifications for verification, as defined by the Qualification Regulator(s). Organisations should consult with the relevant awarding organisation regarding approval for exemptions.

(c) External Verifiers:

- ◆ must be familiar with the industry, and have an understanding of the technical processes and terminology used. The Awarding Body, through examination of relevant CV's and references, will confirm this.
- ◆ should hold or be working towards suitable qualifications for verification, as defined by the Qualification Regulator(s).

4 External Quality Control

- (a) The external quality control of assessment is to be ensured, in this highly regulated and safety-critical sector, through the use of competent external verifiers.
- (b) External quality control will be undertaken by one of two methods to be selected at the choice of the Awarding Body. These are:
- ◆ *Statistical Monitoring* in which the risk rating of centres is determined through the collection of a range data types. Awarding Bodies delivering the awards should provide arrangements for fulfilling these requirements.

OR

- ◆ *Enhanced External Verification* in which one critical unit (identified by the standards-setting body) is to be sampled at all external verification events. Where there have been no candidates assessed in a centre for this unit, the external verifier will duly record this fact. This enhanced external verification model will cover the evidence assessed by each assessor involved in the assessment of the safety-critical unit over a twelve month period.

Appendix 3 — Evidence Requirements

Appendix 3 — Evidence Requirements

Level 2 Units

Level 2 Units Common to Electrical, Instrument & Control and Mechanical Awards		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
1	Reinstate the Work Area after Completing the Maintenance of Process Plant and Equipment	<p>The assessor must be satisfied that the candidate can competently reinstate the work area.</p> <p>Competence should be demonstrated both in the workshop and on the plant.</p>
2	Hand Over Process Plant and Equipment	<p>The assessor must be satisfied that the candidate can competently hand over plant and equipment.</p> <p>The assessor must be satisfied that the candidate can competently accept and confirm their responsibility for the control of process plant and equipment.</p> <p>Competence should be demonstrated across all areas of the scope.</p>
3	Deal with Hazards in Process Engineering Maintenance	<p>The assessor must be satisfied that the candidate can, over a period of time, demonstrate competence under working conditions.</p> <p>1 Identification, rectification and reporting of hazards such as:</p> <ul style="list-style-type: none"> ◆ faults in equipment, premises, tools ◆ obstructions to safe passage of materials, equipment, personnel ◆ faulty storage of materials and equipment ◆ electrical supply (overhead, underground, exposed)

Level 2 Units Common to Electrical, Instrument & Control and Mechanical Awards (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
		<p>2 Selecting and using protective clothing and safety equipment when:</p> <ul style="list-style-type: none"> ◆ dealing with hazardous substances ◆ dealing with hazardous malfunctions ◆ carrying out normal work activities
4	Contribute to Effective Working Relationships in Process Engineering Maintenance	<p>The assessor must be satisfied that the candidate can competently contribute to effective working relationships to include:</p> <ul style="list-style-type: none"> ◆ one to one situations ◆ working with others ◆ giving and receiving feedback from others
5	Prepare Work Areas for the Maintenance of Process Plant and Equipment	<p>The assessor must be satisfied that the candidate can competently prepare the work area, to include planned maintenance activities and breakdown maintenance conditions. Competence should be demonstrated both in the workshop and on the plant.</p>
6	Prepare Loads for Moving during Process Engineering Maintenance	<p>The assessor must be satisfied that the candidate can competently prepare loads for moving. Competence should be demonstrated both in the workshop and on the plant.</p>
7	Move Loads during Process Engineering Maintenance	<p>The assessor must be satisfied that the candidate can competently move loads. Competence should be demonstrated both in the workshop and on the plant.</p>

Electrical level 2		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
14	Carry Out Planned Maintenance Procedures on Electrical Process Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently carry out planned maintenance procedures, to include maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements
15	Prepare Materials for the Maintenance of Electrical Process Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently prepare materials, to include maintenance activities and breakdown maintenance activities
16	Prepare Process Plant and Equipment in Support of Electrical Engineering Activities	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently prepare plant and equipment, to include maintenance activities and breakdown maintenance activities

Electrical level 2 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
17	Assemble Components of Electrical Process Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence assembling components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets
18	Remove Components from Electrical Process Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence restoring components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements
19	Replace Components in Electrical Process Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence replacing components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements

Instrument and Control level 2		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
37	Carry Out Planned Maintenance Procedures on Instrument and Control Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently carry out planned maintenance procedures, to include maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements
38	Prepare Materials for the Maintenance of Instrument and Control Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently prepare materials, to include maintenance activities and breakdown maintenance activities
39	Prepare Process Plant and Equipment in Support of Instrument and Control Engineering Activities	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently prepare plant and equipment, to include maintenance activities and breakdown maintenance activities

Instrument and Control level 2 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
40	Assemble Components of Instrument and Control Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence assembling components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets
41	Remove Components from Instrument and Control Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence restoring components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements
42	Replace Components in Instrument and Control Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence replacing components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements

Mechanical level 2		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
60	Carry Out Planned Maintenance Procedures on Mechanical Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently carry out planned maintenance procedures, to include maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements
61	Prepare Materials for the Maintenance of Mechanical Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently prepare materials, to include maintenance activities and breakdown maintenance activities
62	Prepare Process Plant and Equipment in Support of Mechanical Engineering Activities	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ competently prepare plant and equipment, to include maintenance activities and breakdown maintenance activities

Mechanical level 2 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
63	Assemble Components of Mechanical Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence assembling components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets
64	Remove Components from Mechanical Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence restoring components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements
65	Replace Components in Mechanical Plant and Equipment	<p>The candidate should:</p> <ul style="list-style-type: none"> ◆ describe how to carry out those areas of the scope not demonstrated practically ◆ demonstrate competence replacing components, to include planned maintenance activities and breakdown maintenance activities ◆ implement maintenance procedures for engineering assets ◆ adjust engineering assets to meet operating requirements

Level 3 Units

Level 3 Units Common to Electrical, Instrument & Control and Mechanical Awards		
Unit No	Unit Title	Evidence Requirements
8	Hand Over Process Engineering Plant and Equipment	<p>Your assessor will also ask you to provide the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ Provide evidence of competence in exchanging responsibility for the control of products/assets. ◆ This should include handovers during operational conditions and handovers to colleagues in the same work group. <p>In addition, as you work with your assessor you will be able to:</p> <ul style="list-style-type: none"> ◆ show entries in handover logs ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Level 3 Units Common to Electrical, Instrument & Control and Mechanical Awards (cont)		
Unit No	Unit Title	Evidence Requirements
9	Reinstate the Work Area after Completing the Maintenance of Process Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <p>Provide evidence in the reinstatement of work area:</p> <ul style="list-style-type: none"> ◆ including types of work area ◆ including the storing of resources in enclosures <p>In addition, as you work with your assessor you will be able to:</p> <ul style="list-style-type: none"> ◆ show work areas after reinstatement ◆ show stored engineering resources ◆ show materials that have prepared <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Level 3 Units Common to Electrical, Instrument & Control and Mechanical Awards (cont)		
Unit No	Unit Title	Evidence Requirements
10	Minimise Risks to Life, Property and the Environment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <p>Provide evidence of competence in contributing to health, safety and the environment:</p> <ul style="list-style-type: none"> ◆ including the use of a hazard checking methods and the removal of hazards ◆ including the identification of a hazard from the immediate working environment <p>In addition, as you work with your assessor you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the health and safety procedures followed ◆ provide health and safety records ◆ provide safety reports following accidents and incidents <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Level 3 Units Common to Electrical, Instrument & Control and Mechanical Awards (cont)		
Unit No	Unit Title	Evidence Requirements
11	Work Safely, Minimise Risk and Comply with Emergency Procedures	<p>Provide evidence competence in working safely, minimising risk and complying with emergency procedures:</p> <ul style="list-style-type: none"> ◆ including the use of safety equipment ◆ including dealing with accidents ◆ including minimising risk of personal injury or damage to equipment ◆ including dealing with hazardous malfunctions ◆ including the following of an evacuation procedure <p>In addition, as you work with your assessor you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the health and safety procedures followed ◆ provide health and safety records and safety reports following accidents and incidents <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Level 3 Units Common to Electrical, Instrument & Control and Mechanical Awards (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
12	Contribute to Effective Working Relationships	<p>Provide evidence of:</p> <ul style="list-style-type: none"> ◆ Seeking advice from relevant people. ◆ Contributing to working relationships in the same group and in a different group. ◆ Describe/demonstrate how to give/receive constructive feedback. ◆ Present proposals in oral or written form to others. ◆ Describe what actions to take to minimise conflict and disruption in your team. ◆ Explain the implications of not keeping others informed of his/her progress and any difficulties experienced which might affect their work. <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Level 3 Units Common to Electrical, Instrument & Control and Mechanical Awards (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
13	Prepare Work Areas for Engineering Activities	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing the work area for maintenance including clearing materials and equipment from the work site — including providing service supplies and completing isolations <p>In addition, as you work with your assessor you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
20	Carry Out Planned Maintenance Procedures on Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in maintaining equipment in line with manufacturers and organisational practices and procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show organisational records ◆ show adjusted assets <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions, these will be based on your situation and the type of activities in which you are involved for assessment.</p>
21	Deal with Variations and Defects in Electrical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in identifying, assessing and dealing with variations in the products/assets — including the reporting of recommendations to the appropriate people <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions, these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
22	Diagnose and Determine the Causes of Faults in Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in diagnosing and finding faults within plant and equipment: <ul style="list-style-type: none"> — including selecting the most appropriate fault finding technique and tools — including locating the fault and notifying the appropriate people — including recording the results <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the diagnostic procedures followed ◆ provide organisational reports and records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
23	Prepare Equipment in Support of Electrical Engineering Activities	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing equipment in support of engineering activities: <ul style="list-style-type: none"> — including the obtaining and preparing of equipment — including ensuring safety arrangements are in place — including reporting to the appropriate authority when completed <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ show equipment that has been prepared ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
24	Prepare Materials for the Maintenance of Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing materials in order to carry maintenance of plant and equipment: <ul style="list-style-type: none"> — including checking the quality and quantity of materials — including determining how the materials should be prepared — including reporting on completion <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ show materials that have been prepared ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
25	Adjust Electrical Plant and Equipment to Meet Operational Requirements	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in adjusting equipment according to manufacturers and organisational parameters: <ul style="list-style-type: none"> — including identifying the equipment to be adjusted — including carrying out the adjustment — including completing the appropriate documentation <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show organisational records ◆ show adjusted assets <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
26	Remove Components from Electrical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in removing components from equipment using manufacturer's procedures: <ul style="list-style-type: none"> — including ensuring suitable precautions are taken to prevent escape of liquids or gases — including the labelling of components and their storage <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
27	Replace Components in Electrical Process Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in replacing components in plant and equipment: <ul style="list-style-type: none"> — including ensuring the replaced components meet the required specifications — including protecting the components from damage — including using the appropriate tools and techniques and making final adjustments <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
28	Determine the Feasibility of Repair of Components from Electrical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in determining the feasibility of repairing components <ul style="list-style-type: none"> — including establishing the deviation from required tolerances — including determining what action has to be taken to bring the component back into service <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
29	Interpret Detailed Electrical Information from Technical Sources	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in interpreting information from drawings, diagrams and technical manuals: <ul style="list-style-type: none"> — including ensuring the information is accurate, up-to-date and complete — including identifying and dealing with any problems that may arise <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide written evidence of the details of the technical requirements ◆ provide records of the information sources used ◆ demonstrate the recording arrangements that were followed ◆ provide any drawings, technical procedure sheets, planning sheets, parts lists and other details you have generated <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
30	Read and Extract Information from Electrical Engineering Drawings and Specifications	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in extracting information from technical drawings and publications before starting maintenance work <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide written evidence of the details of the technical requirements ◆ provide records of the information sources used ◆ demonstrate the recording arrangements that were followed ◆ provide any drawings, technical procedures sheets, planning sheets, parts lists and other details you have sourced <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
31	Identify and Suggest Improvements to Working Practices and Procedures Whilst Maintaining Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in identifying and suggesting improvements to working practices and procedures: <ul style="list-style-type: none"> — including collecting and assessing information on current working practices — including suggesting opportunities for improvements <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show the information obtained on improvements ◆ demonstrate inputs into discussions ◆ show formal reports ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
32	Establish that an Electrical Engineering Maintenance Process has been Completed to Specification	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in ensuring maintenance has been completed according to company and/or manufacturers standards <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the checking methods that are used ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
33	Test the Performance and Condition of Electrical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in testing the performance and condition of plant and equipment: <ul style="list-style-type: none"> — including referring to manufacturers manuals and following company procedures In addition, as you work with your assessor, you will be able to: <ul style="list-style-type: none"> – explain how to test for faults – provide test reports and records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
34	Monitor the Performance and Condition of Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence for competence in completing performance condition monitoring: <ul style="list-style-type: none"> — including monitoring on operational and static plant and equipment — including setting-up, monitoring and recording the results in accordance with company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
35	Assess the Performance and Condition of Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in assessing the performance and condition of plant and equipment using all available sources of information <ul style="list-style-type: none"> — including checking all the necessary data is available — including completing the assessment and analysing the results using norms and historical records — including recording the results following company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show assessments that have been made ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Electrical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
36	Inspect Electrical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in completing checks on plant and equipment following company procedures: <ul style="list-style-type: none"> — including carrying out routine and non-routine checks — including recording the results according to company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the checking methods that are used ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
43	Carry Out Planned Maintenance Procedures on Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in maintaining equipment in line with manufacturers and organisational practices and procedures. <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show organisational records ◆ show adjusted assets <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions, these will be based on your situation and the type of activities in which you are involved for assessment.</p>
44	Deal with Variations and Defects in Instrument and Control Systems	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in identifying, assessing and dealing with variations in the products/assets: — including the reporting of recommendations to the appropriate people <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions, these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
45	Diagnose and Determine the Causes of Faults in Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in diagnosing and finding faults within plant and equipment: <ul style="list-style-type: none"> — including selecting the most appropriate fault finding technique and tools — including locating the fault and notifying the appropriate people; — including recording the results <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the diagnostic procedures followed ◆ provide organisational reports and records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
46	Prepare Equipment in Support of Instrument and Control Engineering Activities	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing equipment in support of engineering activities <ul style="list-style-type: none"> — including the obtaining and preparing of equipment — including ensuring safety arrangements are in place — including reporting to the appropriate authority when completed <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ show equipment that has been prepared ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
47	Prepare Materials for the Maintenance of Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing materials in order to carry maintenance of plant and equipment: <ul style="list-style-type: none"> — including checking the quality and quantity of materials — including determining how the materials should be prepared — including reporting on completion <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ show materials that have been prepared ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
48	Adjust Instrument and Control Systems to Meet Operational Requirements	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in adjusting equipment according to manufacturers and organisational parameters: <ul style="list-style-type: none"> — including identifying the equipment to be adjusted — including carrying out the adjustment — including completing the appropriate documentation <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show organisational records ◆ show adjusted assets <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
49	Remove Components from Instrument and Control Systems	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in removing components from equipment using manufacturer's procedures: <ul style="list-style-type: none"> — including ensuring suitable precautions are taken to prevent escape of liquids or gases — including the labelling of components and their storage <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
50	Replace Components in Instrument and Control Process Systems	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in replacing components in plant and equipment <ul style="list-style-type: none"> — including ensuring the replaced components meet the required specifications — including protecting the components from damage — including using the appropriate tools and techniques and making final adjustments <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
51	Determine the Feasibility of Repair of Components from Instrument and Control Systems	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in determining the feasibility of repairing components <ul style="list-style-type: none"> — including establishing the deviation from required tolerances — including determining what action has to be taken to bring the component back into service <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
52	Interpret Detailed Instrument and Control Information from Technical Sources	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in interpreting information from drawings, diagrams and technical manuals <ul style="list-style-type: none"> — including ensuring the information is accurate, up-to-date and complete — including identifying and dealing with any problems that may arise <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide written evidence of the details of the technical requirements ◆ provide records of the information sources used ◆ demonstrate the recording arrangements that were followed ◆ provide any drawings, technical procedure sheets, planning sheets, parts lists and other details you have generated <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
53	Read and Extract Information from Instrument and Control Engineering Drawings and Specifications	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in extracting information from technical drawings and publications before starting maintenance work <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide written evidence of the details of the technical requirements ◆ provide records of the information sources used ◆ demonstrate the recording arrangements that were followed ◆ provide any drawings, technical procedures sheets, planning sheets, parts lists and other details you have sourced <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
54	Identify and Suggest Improvements to Working Practices and Procedures Whilst Maintaining Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in identifying and suggesting improvements to working practices and procedures: <ul style="list-style-type: none"> — including collecting and assessing information on current working practices — including suggesting opportunities for improvements <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show the information obtained on improvements ◆ demonstrate inputs into discussions ◆ show formal reports ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
55	Establish that an Instrument and Control Engineering Maintenance Process has been Completed to Specification	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in ensuring maintenance has been completed according to company and/or manufacturers standards <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the checking methods that are used ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
56	Test the Performance and Condition of Instrument and Control Systems	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in testing the performance and condition of plant and equipment <ul style="list-style-type: none"> — including referring to manufacturers manuals and following company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ explain how to test for faults ◆ provide test reports and records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
57	Monitor the Performance and Condition of Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence for competence in completing performance condition monitoring <ul style="list-style-type: none"> — including monitoring on operational and static plant and equipment — including setting-up, monitoring and recording the results in accordance with company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
58	Assess the Performance and Condition of Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in assessing the performance and condition of plant and equipment using all available sources of information: <ul style="list-style-type: none"> — including checking all the necessary data is available — including completing the assessment and analysing the results using norms and historical records — including recording the results following company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show assessments that have been made ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Instrument and Control level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
59	Inspect Instrument and Control Systems	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in completing checks on plant and equipment following company procedures: <ul style="list-style-type: none"> — including carrying out routine and non-routine checks — including recording the results according to company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the checking methods that are used ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
66	Carry Out Planned Maintenance Procedures on Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in maintaining equipment in line with manufacturers and organisational practices and procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show organisational records ◆ show adjusted assets <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions, these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
67	Deal with Variations and Defects in Mechanical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in identifying, assessing and dealing with variations in the products/assets — including the reporting of recommendations to the appropriate people <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions, these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
68	Diagnose and Determine the Causes of Faults in Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in diagnosing and finding faults within plant and equipment: <ul style="list-style-type: none"> — including selecting the most appropriate fault finding technique and tools — including locating the fault and notifying the appropriate people; — including recording the results <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the diagnostic procedures followed ◆ provide organisational reports and records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
69	Prepare Equipment in Support of Mechanical Engineering Activities	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing equipment in support of engineering activities <ul style="list-style-type: none"> — including the obtaining and preparing of equipment — including ensuring safety arrangements are in place — including reporting to the appropriate authority when completed <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ show equipment that has been prepared ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
70	Prepare Materials for the Maintenance of Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in preparing materials in order to carry maintenance of plant and equipment: <ul style="list-style-type: none"> — including checking the quality and quantity of materials — including determining how the materials should be prepared — including reporting on completion <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show preparatory work ◆ show materials that have been prepared ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
71	Adjust Mechanical Plant and Equipment to Meet Operational Requirements	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in adjusting equipment according to manufacturers and organisational parameters: <ul style="list-style-type: none"> — including identifying the equipment to be adjusted — including carrying out the adjustment — including completing the appropriate documentation <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show organisational records ◆ show adjusted assets <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
72	Remove Components from Mechanical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in removing components from equipment using manufacturer's procedures: <ul style="list-style-type: none"> — including ensuring suitable precautions are taken to prevent escape of liquids or gases — including the labelling of components and their storage <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
73	Replace Components in Mechanical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in replacing components in plant and equipment <ul style="list-style-type: none"> — including ensuring the replaced components meet the required specifications — including protecting the components from damage — including using the appropriate tools and techniques and making final adjustments <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
74	Determine the Feasibility of Repair of Components from Mechanical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in determining the feasibility of repairing components <ul style="list-style-type: none"> — including establishing the deviation from required tolerances — including determining what action has to be taken to bring the component back into service <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
75	Interpret Detailed Mechanical Information from Technical Sources	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in interpreting information from drawings, diagrams and technical manuals <ul style="list-style-type: none"> — including ensuring the information is accurate, up-to-date and complete — including identifying and dealing with any problems that may arise <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide written evidence of the details of the technical requirements ◆ provide records of the information sources used ◆ demonstrate the recording arrangements that were followed ◆ provide any drawings, technical procedure sheets, planning sheets, parts lists and other details you have generated <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
76	Read and Extract Information from Mechanical Engineering Drawings and Specifications	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in extracting information from technical drawings and publications before starting maintenance work <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide written evidence of the details of the technical requirements ◆ provide records of the information sources used ◆ demonstrate the recording arrangements that were followed ◆ provide any drawings, technical procedures sheets, planning sheets, parts lists and other details you have sourced <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
77	Identify and Suggest Improvements to Working Practices and Procedures Whilst Maintaining Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in identifying and suggesting improvements to working practices and procedures: <ul style="list-style-type: none"> — including collecting and assessing information on current working practices — including suggesting opportunities for improvements <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show the information obtained on improvements ◆ demonstrate inputs into discussions ◆ show formal reports ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
78	Establish that an Mechanical Engineering Maintenance Process has been Completed to Specification	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in ensuring maintenance has been completed according to company and/or manufacturers standards <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the checking methods that are used ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
79	Test the Performance and Condition of Mechanical Plant and Equipment	<p>Your assessor will also ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in testing the performance and condition of plant and equipment <ul style="list-style-type: none"> — including referring to manufacturers manuals and following company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ explain how to test for faults ◆ provide test reports and records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
80	Monitor the Performance and Condition of Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence for competence in completing performance condition monitoring <ul style="list-style-type: none"> — including monitoring on operational and static plant and equipment — including setting-up, monitoring and recording the results in accordance with company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
81	Assess the Performance and Condition of Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in assessing the performance and condition of plant and equipment using all available sources of information <ul style="list-style-type: none"> — including checking all the necessary data is available — including completing the assessment and analysing the results using norms and historical records — including recording the results following company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ show assessments that have been made ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Mechanical level 3 (cont)		
Unit No	Unit Title	Evidence Requirements (All areas of the scope must be covered)
82	Inspect Mechanical Plant and Equipment	<p>Your assessor will ask you to produce the following practical evidence to help him or her judge whether you are competent in this area. You must:</p> <ul style="list-style-type: none"> ◆ provide evidence of competence in completing checks on plant and equipment following company procedures <ul style="list-style-type: none"> — including carrying out routine and non-routine checks — including recording the results following company procedures <p>In addition, as you work with your assessor, you will be able to:</p> <ul style="list-style-type: none"> ◆ demonstrate the checking methods that are used ◆ provide organisational records <p>Your assessor will also ask you questions to assess your understanding. The assessor will decide which questions to ask. The knowledge and understanding requirements listed in the standards for each Unit are intended to act as a prompt for extra questions; these will be based on your situation and the type of activities in which you are involved for assessment.</p>

Appendix 4 — Expert Witness Strategy

Assessment is the process of determining a Candidate's competence against national standards (ie skills defined by the National Occupational Standards). The assessment process involves observing a Candidate carrying out normal work activities, reviewing associated job paperwork and assessing a Candidate's knowledge through questioning.

Typically it would be expected that all assessment activities would be carried out by a qualified Assessor. A qualified Assessor would be expected to have achieved a national qualification such as A1, L&D9DI or D33.

Where it is not possible or practical to have a qualified Assessor in the same location as a Candidate, the following strategy outlines how Expert Witnesses can be used to support the assessment process by carrying out on-the-job observations. The requirements for an Expert Witness are outlined as follows.

- 1 Observations would be carried out by an Expert Witness with a qualified Assessor continuing to be responsible for assessment planning, providing feedback and for all other assessment activities eg review of paperwork, knowledge questioning.
- 2 An Expert Witness would be required to:
 - ◆ agree a time with the Candidate for the observation to take place and advise the Assessor
 - ◆ observe the Candidate carrying out normal work tasks/activities
 - ◆ record details of each task/activity observed and confirm its completion according to the required standard
 - ◆ authenticate any supporting documentation/job paperwork (for example, a Candidate's name may not always appear on the job paperwork so his/her involvement should be confirmed)
 - ◆ comment on the Candidate's technical ability, knowledge of equipment, team work, safe working practices, etc
 - ◆ make a recommendation to the Assessor on the Candidate's ability to carry out the task/activity
- 3 The Assessor will review all the evidence provided by the Candidate, including the observation by the Expert Witness, and make a judgement on the competence of the Candidate.