

**Level 2 Diploma in
Processing Operations:
Hydrocarbons (0640-23)**

**Level 3 NVQ Diploma in
Processing Operations:
Hydrocarbons (0640-33)**

**Level 3 NVQ Diploma in
Processing Operations:
Hydrocarbons (Control
Room) (0640-34)**

January 2013 Version 1.2



Qualifications at a glance

Subject area	Process Engineering
City & Guilds number	0640
Age group approved	16+
Entry requirements	Level 2
Assessment	Portfolio of Evidence
Support materials	Centre handbook
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	City & Guilds number	Accreditation number
Level 2 Diploma in Processing Operations: Hydrocarbons	0640-23	600/5813/4
Level 3 NVQ Diploma in Processing Operations: Hydrocarbons	0640-33	600/5821/3
Level 3 NVQ Diploma in Processing Operations: Hydrocarbons (Control Room)	0640-34	600/5820/1

Version and date	Change detail	Section
1.2 January 2013	Added NVQ to the Level 3 qualification titles, formatted the structure tables, re-worded the structure description for 0640-23, amended information under Assessor and Internal Quality Assurer in section two and amended the title of unit 355	Qualifications at a glance, Introduction, Centre requirements and Units



Contents

1	Introduction	6
	Structure	7
2	Centre requirements	14
	Approval	14
	Resource requirements	14
	Learner entry requirements	15
3	Delivering the qualification	16
	Initial assessment and induction	16
	Recording documents	16
4	Assessment	17
	Assessment of the qualification	17
	Assessment strategy	17
5	Units	18
Unit 101	How to Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment	19
Unit 102	Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment	23
Unit 227	How to Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment	27
Unit 228	Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment	31
Unit 229	How to Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	35
Unit 230	Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	39
Unit 231	How to Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment	42
Unit 232	Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment	46

Unit 233	How to Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment	50
Unit 234	Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment	54
Unit 335	How to Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment	58
Unit 336	Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment	64
Unit 337	How to Isolate and Reinststate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	68
Unit 338	Isolate and Reinststate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	73
Unit 339	How to Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment	77
Unit 340	Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment	83
Unit 341	How to Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	86
Unit 342	Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	92
Unit 343	How to Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment	96
Unit 344	Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment	100
Unit 345	How to Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	105
Unit 346	Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	109
Unit 347	How to Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	113
Unit 348	Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	119
Unit 349	How to Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	124
Unit 350	Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	128

Unit 351	How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	132
Unit 352	Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	137
Unit 353	How to Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	141
Unit 354	Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	147
Unit 355	How to Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment	151
Unit 356	Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment	155
Unit 357	How to Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	159
Unit 358	Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	165
Unit 359	How to Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	170
Unit 360	Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	175
Appendix 1	Relationships to other qualifications	179
Appendix 2	Sources of general information	180



1 Introduction

This document tells you what you need to do to deliver the qualifications:

Area	Description
Who are the qualifications for?	For learners who work or want to work in various roles in the oil and gas sector.
What do the qualifications cover?	They allow learners to learn, develop and practise the skills required for employment and/or career progression in the oil and gas sector. At Level 2, the learner will likely be a process operator carrying out various routine tasks. The Level 3 qualifications are aimed at more experienced technicians or control room operators that have greater autonomy in their role.
What opportunities for progression are there?	Learners studying the Level 2 qualifications may wish to progress to the Level 3 qualifications.

Structure

To achieve the Level 2 Diploma in Processing Operations: Hydrocarbons (0640-23), learners must achieve 43 credits from units (101 - 102, 227 – 234, 335 - 338).

To achieve the Level 3 NVQ Diploma in Processing Operations: Hydrocarbons (0640-33), learners must achieve 56 Credits from (339 - 352).

To achieve the Level 3 NVQ Diploma in Processing Operations: Hydrocarbons (Control Room) (0640-34), learners must achieve 56 credits from (339-344, 353 - 360).

Level 2 Diploma in Processing Operations: Hydrocarbons

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
Mandatory			
R/601/7964	101	How to Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment	2
L/601/7963	102	Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment	2
K/601/7954	227	How to Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment	3
H/601/7953	228	Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment	2

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
A/601/7960	229	How to Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	3
J/601/7959	230	Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	3
M/601/7972	231	How to Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment	3
K/601/7971	232	Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment	3
J/601/7976	233	How to Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment	3
F/601/7975	234	Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment	3

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
A/601/7974	335	How to Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment	4
T/601/7973	336	Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment	4
H/601/7984	337	How to Isolate and Reinstatement Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	4
D/601/7983	338	Isolate and Reinstatement Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	4
Level 3 NVQ Diploma in Processing Operations: Hydrocarbons			
Mandatory			
T/601/7956	339	How to Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment	5
M/601/7955	340	Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment	4

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
J/601/7962	341	How to Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	5
F/601/7961	342	Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	4
D/601/7966	343	How to Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment	2
Y/601/7965	344	Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment	2
R/601/7978	345	How to Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	4
L/601/7977	346	Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	4
L/601/7980	347	How to Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	5

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
Y/601/7979	348	Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	5
Y/601/7982	349	How to Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	4
R/601/7981	350	Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	4
H/601/7984	351	How to Isolate and Reinstat e Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	4
D/601/7983	352	Isolate and Reinstat e Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	4
Level 3 NVQ Diploma in Processing Operations: Hydrocarbons (Control Room)			
Mandatory			
F/601/7992	353	How to Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	4

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
A/601/7991	354	Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment	4
M/601/7986	355	How to Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment	4
K/601/7985	356	Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment	4
A/601/7988	357	How to Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	5
T/601/7987	358	Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	5
T/601/7990	359	How to Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	4

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
F/601/7989	360	Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment	4
T/601/7956	339	How to Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment	5
M/601/7955	340	Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment	4
J/601/7962	341	How to Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	5
F/601/7961	342	Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment	4
D/601/7966	343	How to Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment	2
Y/601/7965	344	Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment	2



2 Centre requirements

Approval

Centres already offering City & Guilds qualifications

Centres that have offered the following qualifications will be automatically approved to deliver Process Operations: Hydrocarbons and Process Operations: Hydrocarbons (Control Room) qualifications:

- 0667-12 Level 2 NVQ in Processing Operations – Hydrocarbons
- 0667-13 Level 3 NVQ in Processing Operations - Hydrocarbons
- 0667-14 Level 3 NVQ in Processing Operations - Hydrocarbons (Control Room)

Centres not already offering City & Guilds qualifications

To offer these qualifications, new centres will need to gain both centre and qualification approval. Please refer to the Centre Manual - Supporting Customer Excellence for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification[s] before designing a course programme.

Resource requirements

Physical resources and site agreements

The assessment methods used to assess the occupational competence of the learners should be valid, reliable, fair and applicable to real work in the normal day to day working environment.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the areas for which they are delivering training and/or have experience of providing training. This knowledge must be above or to the same level as the training being delivered
- hold the Level 3 Qualification in Process Operations - hydrocarbons, or an equivalent qualification.
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Centre staff may undertake more than one role, eg tutor and assessor or internal quality assurer, but cannot internally verify their own assessments.

Assessors and Internal Quality Assurer

Assessor/Internal Quality Assurer TAQA qualifications are valued as qualifications for centre staff, but they are not currently a requirement for the qualifications.

Continuing professional development (CPD)

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

Learner entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that learners have the potential and opportunity to gain the qualifications successfully.

Age restrictions

City & Guilds cannot accept any registrations for learners under 16 as these qualifications are not approved for under 16s.



3 Delivering the qualification

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific training needs,
- support and guidance they may need when working towards their qualifications.
- any units they have already completed, or credit they have accumulated which is relevant to the qualifications.
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the learner fully understands the requirements of the qualification[s], their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Recording documents

Learners and centres may decide to use a paper-based or electronic method of recording evidence.

City & Guilds endorses several ePortfolio systems, including our own, **Learning Assistant**, an easy-to-use and secure online tool to support and evidence learners' progress towards achieving qualifications. Further details are available at: www.cityandguilds.com/eportfolios.

City & Guilds has developed a set of *Recording forms* including examples of completed forms, for new and existing centres to use as appropriate. *Recording forms* are available on the City & Guilds website.

Although new centres are expected to use these forms, centres may devise or customise alternative forms, which must be approved for use by the external verifier, before they are used by learners and assessors at the centre. Amendable (MS Word) versions of the forms are available on the City & Guilds website.



4 Assessment

Assessment of the qualification

Learners must:

- have a completed portfolio of evidence for each unit

Assessment strategy

The assessment strategy for these qualifications has been set by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers.

Please note: simulation is **not** always suitable for the qualifications within this sector. The Assessment Strategy defines where evidence from stimulation is acceptable, and in which contexts.

Please refer to the **latest** version of Cogent's Assessment Strategy. The 12 August 2009 version can be found on the City & Guilds website **www.cityandguilds.com** (This version is the most recent version at August 2012).

Please contact Cogent for further detail, information and/ or latest version

Cogent SSC Limited
Unit 5
Mandarin Court
Centre Park
Warrington
WA1 1GG
Tel: 01925 515200
Fax: 01925 515240
www.cogent-ssc.com



5 Units

Availability of units

The following units can also be obtained from The Register of Regulated Qualifications:

<http://register.ofqual.gov.uk/Unit>

Below is a list of the learning outcomes for all the units. If you want to download a complete set of units, go to [website]

Structure of units

These units each have the following:

- City & Guilds reference number
- unit accreditation number
- title
- level
- credit value
- endorsement by a sector or other appropriate body
- information on assessment
- learning outcomes which are comprised of a number of assessment criteria
- notes for guidance.

Unit 101

How to Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment

UAN:	R/601/7964
Level:	Level 1
Credit value:	2
GLH:	18
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to maintain effective working relationships
Assessment criteria
The learner can: 1.1 Describe the requirements of workplace practices relating to other people 1.2 Describe the response to others to maintain effective working relationships

Learning outcome
The learner will: 2. Know how to record and communicate information in the most suitable way
Assessment criteria
The learner can: 2.1 Describe the workplace reporting procedures 2.2 Explain the importance of passing on information that is accurate and complete 2.3 Identify methods of passing on accurate and complete information

Learning outcome
The learner will: 3. Know how to deal with difficulties in maintaining effective working relationships
Assessment criteria
The learner can: 3.1 Describe appropriate responses when dealing with work related difficulties or breakdowns in relationships 3.2 Explain why information received sometimes needs to be clarified 3.3 Identify who to seek clarification from when communications cannot be clearly understood

Learning outcome
The learner will: 4. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 4.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP) 4.2 Describe the nature of work area hazards and ways to control and/or minimise risks 4.3 Explain the emergency procedures

Learning outcome
The learner will: 5. Know how to work to organisational and operational requirements
Assessment criteria
The learner can: 5.1 Explain the implications of statutory and organisational requirements 5.2 Explain how to interpret operational requirements 5.3 Explain where to obtain, and how to implement: <ul style="list-style-type: none"> • operational policies • procedures • instructions • codes of practice • standards and schedules

Unit 101 How to Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an operator with basic experience who is seeking recognition of their knowledge.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Other people should include, where appropriate:

- co-workers
- supervisors
- managers
- other company employees
- third parties
- visitors.

Situations must include, as appropriate:

- informal meetings
- formal meetings
- normal work situations
- team briefings
- contingency situations
- handovers.

Information must include:

- oral
- written
- visual.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 102

Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment

UAN:	L/601/7963
Level:	Level 1
Credit value:	2
GLH:	6
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome

The learner will:

1. Be able to react appropriately to others

Assessment criteria

The learner can:

- 1.1 Promptly and willingly meet reasonable requests and queries from others
- 1.2 Respond to others to maintain effective working relationships

Learning outcome

The learner will:

2. Be able to record and communicate information in the most suitable way

Assessment criteria

The learner can:

- 2.1 Record relevant information accurately and legibly
- 2.2 Use a style of communication in both language and terminology, that is clear, concise and accurate
- 2.3 Use a style of communication that is suited to the workplace and the situation

Learning outcome
The learner will: 3. Be able to pass on accurate information clearly and concisely
Assessment criteria
The learner can: 3.1 Provide prompt, clear and accurate information to others 3.2 Relay accurate and complete information about current operational status to and from relevant personnel, at handover stage

Learning outcome
The learner will: 4. Be able to deal with difficulties in maintaining effective working relationships
Assessment criteria
The learner can: 4.1 Offer additional support when others have difficulties and seek help where necessary 4.2 Seek clarification promptly when difficulties are experienced interpreting communications 4.3 Promptly report unresolved breakdowns in working relationships to an appropriate person

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 5.2 Follow procedures and act promptly, when dealing with communications 5.3 Leave the work area clean and free of hazards

Unit 102 Establish and Maintain Effective Relationships with Others Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an operator with basic experience who is seeking recognition of their skills.

This unit should not be taken prior to taking 'How to Establish and Maintain Effective Relationships with Others Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Other people should include, where appropriate:

- co-workers
- supervisors
- managers
- other company employees
- third parties
- visitors.

Situations must include, as appropriate:

- informal meetings
- formal meetings
- normal work situations
- team briefings
- contingency situations
- handovers.

Information must include:

- oral
- written
- visual.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 227

How to Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment

UAN:	K/601/7954
Level:	Level 2
Credit value:	3
GLH:	24
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to use materials safely
Assessment criteria
The learner can: 1.1 Describe how to handle materials 1.2 Identify which materials are for disposal

Learning outcome
The learner will: 2. Know how to minimise safety issues in the workplace
Assessment criteria
The learner can: 2.1 Explain how to obtain and interpret information on safety 2.2 Identify how to access fire protection, first aid and survival equipment 2.3 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none">• identify hazards• mitigate or reduce risks to as low as reasonably practicable (ALARP) 2.4 Explain how to use safe lifting and handling techniques

Learning outcome
The learner will: 3. Know the safety responsibilities attached to own job role
Assessment criteria
The learner can: 3.1 Describe own responsibilities as they relate to: <ul style="list-style-type: none"> • Organisational Safety Policy • Classification, Packaging and Labelling of Dangerous Substances Regulations • Environmental Protection Act

Learning outcome
The learner will: 4. Know how to work to organisational and operational requirements
Assessment criteria
The learner can: 4.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 4.2 Describe how to interpret operational requirements 4.3 Describe the implications of statutory and organisational requirements 4.4 Describe how to implement workplace reporting procedures

Unit 227 How to Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Materials could include those that are:

- flammable
- toxic
- corrosive
- explosive
- cryogenic
- radioactive.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 228

Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment

UAN:	H/601/7953
Level:	Level 2
Credit value:	2
GLH:	8
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to use and monitor materials, tools and equipment
Assessment criteria
The learner can: 1.1 Handle all materials, tools and equipment correctly 1.2 Identify and report unsafe equipment and potential danger

Learning outcome
The learner will: 2. Be able to work with safety equipment
Assessment criteria
The learner can: 2.1 Use fire protection, first aid and survival equipment 2.2 Position and use relevant safety equipment (including machine guards) safely and securely

Learning outcome
The learner will: 3. Be able to deal with waste
Assessment criteria
The learner can: 3.1 Identify packaged, labeled and transferred materials for disposal

Learning outcome
The learner will: 4. Be able to maintain pollution control measures
Assessment criteria
The learner can: 4.1 Monitor and control liquid and gas discharges from own area, to within prescribed limits 4.2 Identify and report unplanned liquid and gas discharges

Learning outcome
The learner will: 5. Be able to work to organisational and operational requirements
Assessment criteria
The learner can: 5.1 Ensure that the area within own personal responsibility is maintained, clean and hazard free 5.2 Select and use the relevant Personal Protective Equipment (PPE) 5.3 Adhere to all procedures relevant to fire, accident and other emergency 5.4 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 228 Contribute to Health and Safety Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

This unit should not be taken prior to taking 'How to Contribute to Health and Safety Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Materials could include those that are:

- flammable
- toxic
- corrosive
- explosive
- cryogenic
- radioactive.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 229

How to Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

UAN:	A/601/7960
Level:	Level 2
Credit value:	3
GLH:	28
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to initiate an emergency response
Assessment criteria
The learner can: 1.1 Explain the emergency procedures relevant to the workplace 1.2 Identify how to react appropriately 1.3 Identify who to contact in the event of an emergency situation

Learning outcome
The learner will: 2. Know how to respond to emergencies
Assessment criteria
The learner can: 2.1 Explain how the installation/site layout may impact on actions taken 2.2 Explain the principles and operation of fire and gas control systems 2.3 Explain the equipment and its function and operation

Learning outcome
The learner will: 3. Know the implications of actions taken in an emergency situation
Assessment criteria
The learner can: 3.1 Explain the operation of and potential implications of emergency shutdown systems 3.2 Identify the effect and potential implications of loss of any utility and its reinstatement

Learning outcome
The learner will: 4. Know how to minimise safety issues in the workplace
Assessment criteria
The learner can: 4.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 5. Know how to work to organisational and operational requirements
Assessment criteria
The learner can: 5.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 5.2 Explain how to interpret operational requirements 5.3 Explain the implications of statutory and organisational requirements

Unit 229 How to Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Emergencies include all types of critical situations.

Emergencies could be those relating to:

- people
- plant
- environment.

Reacting appropriately to an emergency situation may include:

- make safe
- isolate
- shutdown
- evacuate the work area.

Unit 230

Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

UAN:	J/601/7959
Level:	Level 2
Credit value:	3
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to identify and respond to emergency situations
Assessment criteria
The learner can: 1.1 Identify developing and existing emergency situations 1.2 Take action to make the situation safe 1.3 Contact the correct people in the event of an emergency

Learning outcome
The learner will: 2. Be able to alert relevant others to the situation
Assessment criteria
The learner can: 2.1 Activate all relevant alarms and take actions appropriate to the situation 2.2 Report the emergency situation correctly

Learning outcome
The learner will: 3. Be able to minimise risks
Assessment criteria
The learner can: 3.1 Minimise risks to personnel, process, plant and equipment 3.2 Liaise with relevant others to ensure that risks are kept to a minimum 3.3 Ensure that others know their role when dealing with an emergency

Learning outcome
The learner will: 4. Be able to monitor the situation
Assessment criteria
The learner can: 4.1 Monitor the situation 4.2 Inform relevant personnel if the situation changes

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 React appropriately to information received 5.2 Take part in drills and exercises 5.3 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 230 Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

This unit should not be taken prior to taking 'How to Contribute to the Control of Emergencies and Critical Situations Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard Identification
- risk Assessment
- permit to work
- any other associated systems.

Emergencies could be those relating to:

- people
- plant
- Environment.

Emergencies include all types of critical situations.

Unit 231

How to Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	M/601/7972
Level:	Level 2
Credit value:	3
GLH:	26
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know the plant environment and layout
Assessment criteria
The learner can: 1.1 Explain how to access and interpret operational instructions 1.2 Explain the plant layout and its connection with other systems

Learning outcome
The learner will: 2. Know who to liaise with when starting up process systems
Assessment criteria
The learner can: 2.1 Identify who to deal with when starting up processes

Learning outcome
The learner will: 3. Know how to maintain the correct plant conditions
Assessment criteria
The learner can: 3.1 Explain how to achieve correct operating conditions 3.2 Explain how to achieve optimum processing

Learning outcome
The learner will: 4. Know how to minimise and deal with faults and hazards
Assessment criteria
The learner can: 4.1 Explain the appropriate action to take on identification of faults 4.2 Identify work area hazards that affect process systems 4.3 Identify who to inform if a hazard is identified 4.4 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 5. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Explain how to work with and within the Safe Systems of Work system 5.2 Explain how to select, use and care for Personal Protective Equipment (PPE) 5.3 Describe the implications of statutory and organisational requirements 5.4 Explain how to interpret operational requirements

Unit 231 How to Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- Schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Dealing with other people should include:

- co-workers
- supervisors
- managers
- workers of other disciplines.

Faults should include:

- damage
- wear
- malfunction
- process deviations
- service defects.

Hazards should include:

- spillages
- uncontrolled emissions
- H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Unit 232

Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	K/601/7971
Level:	Level 2
Credit value:	3
GLH:	8
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare to start up process systems
Assessment criteria
The learner can: 1.1 Obtain correct operational instructions 1.2 Ensure that all information supplied and recorded is accurate and complete

Learning outcome
The learner will: 2. Be able to take responsibility for others
Assessment criteria
The learner can: 2.1 Organise own and others' work where appropriate 2.2 Brief relevant personnel

Learning outcome
The learner will: 3. Be able to maintain the correct plant conditions
Assessment criteria
The learner can: 3.1 Facilitate optimum processing and the correct operating conditions

Learning outcome
The learner will: 4. Be able to deal with problems
Assessment criteria
The learner can: 4.1 Identify faults accurately and take appropriate action 4.2 Identify difficulties with relevant parts of the Safe Systems of Work system and take appropriate action

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 5.2 Maintain the work area to be clean and hazard free

Unit 232 Prepare and Start Up Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

This unit should not be taken prior to taking 'How to Prepare and Start Up Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Dealing with other people should include:

- co-workers
- supervisors
- managers
- workers of other disciplines.

Faults should include:

- damage
- wear
- Malfunction
- process deviations
- service defects.

Hazards should include:

- spillages
- uncontrolled emissions
- H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Unit 233

How to Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	J/601/7976
Level:	Level 2
Credit value:	3
GLH:	26
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to check the required information
Assessment criteria
The learner can: 1.1 Explain how to access and interpret: <ul style="list-style-type: none">• shut down instructions• operational instructions 1.2 Identify the different sources of information 1.3 Explain how to interpret plant drawings and manuals

Learning outcome
The learner will: 2. Know the plant environment
Assessment criteria
The learner can: 2.1 Describe the plant layout and its connection with other systems

Learning outcome
The learner will: 3. Know the function and operation of plant and equipment
Assessment criteria
The learner can: 3.1 Describe the equipment and its function, as relevant to the plant 3.2 Describe the functioning of process control including instrumentation and process logic controllers 3.3 Explain how to operate process systems

Learning outcome
The learner will: 4. Know how to shut down process systems
Assessment criteria
The learner can: 4.1 Explain how to operate shutdown systems 4.2 Explain how to isolate plant and utilities

Learning outcome
The learner will: 5. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 5.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 6. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 6.2 Describe the implications of statutory and organisational requirements 6.3 Explain how to interpret operational requirements

Unit 233 How to Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Preparing to shut down a process system should include:

- informing relevant personnel
- continued running of the remainder of the plant
- valve and equipment settings.

Shut down instructions should be:

- oral
- written
- Operational instructions should include:
 - sequence of shutdown
 - recommended rate of shut down.

Hazards should include:

- spillages
- uncontrolled emissions
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Shut down hazards should include:

- standby equipment
- operational
- vents
- noise
- heat.

Unit 234

Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	F/601/7975
Level:	Level 2
Credit value:	3
GLH:	8
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare for shutdown
Assessment criteria
The learner can: 1.1 Obtain operational instructions 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Make appropriate preparations for shut down

Learning outcome
The learner will: 2. Be able to shutdown process systems
Assessment criteria
The learner can: 2.1 Shut down the process system safely 2.2 Isolate plant and utilities

Learning outcome
The learner will: 3. Be able to minimise risks when shutting down
Assessment criteria
The learner can: 3.1 Identify shut down hazards and how to protect against them 3.2 Monitor shut down hazards and take corrective action to minimise risk

Learning outcome
The learner will: 4. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 4.1 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 234 Prepare and Shut Down Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed prerequisite is that the learner is likely to be an operator with some experience, seeking recognition or progression.

This unit should not be taken prior to taking 'How to Prepare and Shut Down Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Preparing to shut down a process system should include:

- informing relevant personnel
- continued running of the remainder of the plant
- valve and equipment settings.

Shut down instructions should be:

- oral
- written.

Operational instructions should include:

- sequence of shutdown
- recommended rate of shut down.

Hazards should include:

- spillages
- uncontrolled emissions
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Shut down hazards should include:

- standby equipment
- operational
- vents
- noise
- heat.

Unit 335

How to Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	A/601/7974
Level:	Level 3
Credit value:	4
GLH:	34
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to check the required information
Assessment criteria
The learner can: 1.1 Identify the different sources of information 1.2 Identify the nature of information required 1.3 Explain how to deal with oral and written information 1.4 Explain how to interpret plant drawings and manuals

Learning outcome
The learner will: 2. Know the function and operation of plant and equipment
Assessment criteria
The learner can: 2.1 Describe the use and functions of the equipment 2.2 Describe the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know how to achieve the specification parameters
Assessment criteria
The learner can: 3.1 Identify normal plant conditions and the tolerances within which they operate 3.2 Explain what normal operating conditions are and how they are achieved 3.3 Explain the effects of changes in ambient conditions on plant operation 3.4 Explain how to deal with process system throughput

Learning outcome
The learner will: 4. Know how to deal with the reactions taking place
Assessment criteria
The learner can: 4.1 Explain the reactions taking place, conditions and effects of changes 4.2 Describe the composition and properties of hydrocarbon feedstock and products

Learning outcome
The learner will: 5. Know how to monitor process systems
Assessment criteria
The learner can: 5.1 Explain how to perform leak testing and sampling 5.2 Explain how to interpret the results of leak testing and sampling

Learning outcome
The learner will: 6. Know how to identify and deal with faults and emergency situations
Assessment criteria
The learner can: 6.1 Explain how to identify: <ul style="list-style-type: none"> • emergency situations • process system faults 6.2 Identify the actions appropriate to emergency situations 6.3 Explain types and causes of deviations and the relevant actions to take when they occur

Learning outcome
The learner will: 7. Know how abnormal conditions affect the process system
Assessment criteria
The learner can: 7.1 Describe the emergency shutdown control systems 7.2 Describe the fire and gas control systems 7.3 Describe the effects of loss of any utility and its reinstatement

Learning outcome
The learner will: 8. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 8.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 9. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 9.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 9.2 Describe the implications of statutory and organisational requirements 9.3 Explain how to interpret operational requirements 9.4 Identify the limits of own responsibilities

Unit 335 How to Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Reactions and changes should include chemical and physical properties. Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

Emergency situations should include:

- process deviations
- extreme weather conditions
- spillages
- uncontrolled emissions.

Process system throughput should include:

- increase/decrease throughput
- specified sequence
- recommended rate.

System faults should include:

- lack of services and supply
- variances in services
- mechanical and electrical breakdown
- process
- utility setting deviations.

Actions to be taken in the event of an emergency situation should include:

- quick shut down
- return process to within safe parameters
- operate standby equipment.

Information required could be:

- oral
- written
- equipment status
- process status
- handover reports.

Actions to take when a deviation occurs, include:

- report
- record
- adjust.

Unit 336

Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	T/601/7973
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to check the information supplied
Assessment criteria
The learner can: 1.1 Review the information to ensure that it is accurate and complete 1.2 Take corrective action if anomalies are found in the information 1.3 Update the information if this is required

Learning outcome
The learner will: 2. Be able to use the equipment
Assessment criteria
The learner can: 2.1 Demonstrate the use of the instrumentation and process logic controllers, as applicable to the plant

Learning outcome
The learner will: 3. Be able to maintain normal operating conditions
Assessment criteria
The learner can: 3.1 Achieve the required process system specification through appropriate work methods/techniques 3.2 Ensure normal operating conditions by appropriate process systems throughput 3.3 Maintain the process system at the required normal operating conditions

Learning outcome
The learner will: 4. Be able to deal with faults and emergency situations
Assessment criteria
The learner can: 4.1 Identify process system faults and abnormal operating conditions 4.2 Respond to emergency situations and take appropriate action to minimise their impact

Learning outcome
The learner will: 5. Be able to monitor process systems
Assessment criteria
The learner can: 5.1 Interpret the results of sampling and testing 5.2 Make adjustments if this is necessary, to maintain normal operating conditions 5.3 Report deviations that are not within limits of own responsibility

Learning outcome
The learner will: 6. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 6.2 Maintain the work area to be clean and hazard free

Unit 336 Operate and Monitor Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Operate and Monitor Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Emergencies could be those relating to:

- people
- plant
- environment.

Emergency situations should include:

- process deviations
- extreme weather conditions
- spillages
- uncontrolled emissions.

Process system throughput should include:

- increase/decrease throughput
- specified sequence
- recommended rate.

System faults should include:

- lack of services and supply
- variances in services
- mechanical and electrical breakdown
- process
- utility setting deviations.

Actions to be taken in the event of an emergency situation should include:

- quick shut down
- return process to within safe parameters
- operate standby equipment

Information required could be:

- oral
- written
- equipment status
- process status
- handover reports.

Actions to take when a deviation occurs, include:

- report
- record
- adjust.

Unit 337

How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

UAN:	H/601/7984
Level:	Level 3
Credit value:	4
GLH:	32
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to interpret and use information
Assessment criteria
The learner can: 1.1 Identify the different sources of information available 1.2 Explain how to deal with oral and written information 1.3 Explain how to access and interpret instructions 1.4 Explain how to interpret plant drawings and manuals 1.5 Explain how to access and interpret operational instructions on safety, downtime, tools and equipment used

Learning outcome
The learner will: 2. Know the functions of the equipment
Assessment criteria
The learner can: 2.1 Describe the equipment and its functions 2.2 Describe the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know the factors that affect safe systems
Assessment criteria
The learner can: 3.1 Describe the properties of purging media 3.2 Identify the factors impacting upon optimising performance 3.3 Describe the composition and properties of hydrocarbon feedstock and products 3.4 Identify all relevant sources of energy to prime movers

Learning outcome
The learner will: 4. Know how reactions to abnormal conditions affect the process system
Assessment criteria
The learner can: 4.1 Describe the effects of emergency shutdown control systems 4.2 Describe the effects of fire and gas control systems

Learning outcome
The learner will: 5. Know how to isolate process plant
Assessment criteria
The learner can: 5.1 Identify isolation devices and methods of installation

Learning outcome
The learner will: 6. Know how to de-isolate process plant
Assessment criteria
The learner can: 6.1 Explain the principles of de-isolation

Learning outcome
The learner will: 7. Know how to maintain safety during isolation and de-isolation activities
Assessment criteria
The learner can: 7.1 Identify how risks can be minimised through appropriate reporting, adjusting and recording 7.2 Explain how to identify hazards 7.3 Identify relevant tests and confirm safety of the plant and equipment

Learning outcome
The learner will: 8. Know the systems and methods for maintaining a safe environment
Assessment criteria
The learner can: 8.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP) 8.2 Explain the methods and limitations of: <ul style="list-style-type: none"> • depressurisation/pressurisation • blowdown • temperature • relief systems • drains • flares • vents

Learning outcome
The learner will: 9. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 9.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 9.2 Describe the implications of statutory and organisational requirements 9.3 Explain how to work with and within the relevant parts of the Safe Systems of Work system 9.4 Explain how to interpret operational requirements 9.5 Identify the limits of own responsibilities

Unit 337 How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Instructions should relate to:

- safety
- downtime
- integration of processes.

Information should relate to:

- work activity briefing provided to others
- clarification of operational instructions
- work activity recording.

Oral and written information should include:

- reinstatement completion details
- work activity details.

Factors impacting upon optimising performance should include:

- layout
- tools and equipment required
- purging medium required.

Hazards should include:

- spillages
- uncontrolled emissions
- extreme weather conditions.

Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature .

Unit 338

Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

UAN:	D/601/7983
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare for isolation and de-isolation of plant and equipment
Assessment criteria
The learner can: 1.1 Obtain instructions and organise work correctly 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Ensure that the plant and equipment is prepared 1.4 Monitor preparations and minimise risks

Learning outcome
The learner will: 2. Be able to inform relevant others of work activities
Assessment criteria
The learner can: 2.1 Ensure that relevant personnel are briefed

Learning outcome
The learner will: 3. Be able to isolate plant and equipment
Assessment criteria
The learner can: 3.1 Isolate plant and equipment safely 3.2 Monitor and maintain the status of the isolation

Learning outcome
The learner will: 4. Be able to de-isolate plant and equipment
Assessment criteria
The learner can: 4.1 De-isolate plant and equipment safely 4.2 Monitor de-isolation and minimise risks

Learning outcome
The learner will: 5. Be able to maintain safety during isolation and de-isolation activities
Assessment criteria
The learner can: 5.1 Carry out relevant tests and confirm safety of the plant and equipment 5.2 Ensure that the relevant parts of the Safe Systems of Work system are operated effectively

Learning outcome
The learner will: 6. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 6.2 Maintain the work area to be clean and hazard free

Unit 338 Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Risks can relate to:

- personnel
- environment
- process
- plant
- equipment.

Unit 339

How to Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment

UAN:	T/601/7956
Level:	Level 3
Credit value:	5
GLH:	44
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know the factors that affect safe systems
Assessment criteria
The learner can: 1.1 Describe the factors that affect safe systems 1.2 Describe the effects of H ₂ S (hydrogen sulphide) and other toxic substances 1.3 Describe the properties of purging media 1.4 Describe the composition and properties of hydrocarbon feedstock and products 1.5 Identify all relevant sources of energy to prime movers 1.6 Describe the functioning of instrumentation and process logic control

Learning outcome
The learner will: 2. Know the conditions that maintain a safe working environment
Assessment criteria
The learner can: 2.1 Identify the safe working practices appropriate to the location 2.2 Identify normal plant conditions and the tolerances within which they operate 2.3 Explain how to interpret and maintain conditions relating to the work environment, equipment, materials, procedures, special needs 2.4 Describe the plant layout and its connection with other systems

Learning outcome
The learner will: 3. Know the systems and methods for maintaining a safe environment
Assessment criteria
The learner can: 3.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP) 3.2 Describe the consequences of emissions to the environment 3.3 Explain the methods of depressurisation and/or pressurisation (to include blowdown and temperature) 3.4 Explain blowdown and relief systems and identify their limitations 3.5 Describe the drain systems associated with the plant and their limitations 3.6 Describe the flare/vent systems associated with the plant and their limitations

Learning outcome
The learner will: 4. Know the emergency procedures and the effects of these procedures
Assessment criteria
The learner can: 4.1 Explain the emergency procedures for plant in a hydrocarbons environment 4.2 Explain the effects of: <ul style="list-style-type: none"> • emergency shutdown control system • fire and gas control system • loss of any utility and its reinstatement

Learning outcome
The learner will: 5. Know how to liaise with others to maintain a safe working environment
Assessment criteria
The learner can: 5.1 Describe how to access and interface with the relevant personnel 5.2 Explain the handover and reporting procedures 5.3 Explain how to deal with differing types of communication

Learning outcome
The learner will: 6. Know how to use information to maintain a safe working environment
Assessment criteria
The learner can: 6.1 Identify what sources of information are available 6.2 Explain how to interpret plant drawings and manuals 6.3 Explain how to deal with different types of information

Learning outcome
The learner will: 7. Know how to work to organisational and operational requirements
Assessment criteria
The learner can: 7.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 7.2 Explain how to interpret and implement: <ul style="list-style-type: none"> • organisational policy, practices and procedures • relevant legislation and other legal requirements 7.3 Explain how to interpret operational requirements 7.4 Describe the implications of statutory and organisational requirements 7.5 Identify the procedure for entry into confined spaces

Unit 339 How to Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- individual operation
- team operation
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Flare/vent systems should include capacity and radiation.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Relevant legislation may include:

- health
- environment
- hygiene and safety legislation
- industry specific legislation
- approved codes of practice
- organisational policies
- practices and procedures
- environmental legislation.

Legal requirements cover things such as:

- industry specific legislation
- employment requirements
- approved codes of practice
- customer requirements.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Communication should include:

- oral
- written
- computer based
- visual/pictorial.

Information should include:

- work activity
- briefing provided to others
- clarification of operational instructions
- work activity recording and delegation to others
- handovers.

Relevant personnel should include:

- line managers
- staff representatives
- colleagues
- customers
- suppliers
- those for whom the learner has responsibility.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Properties of hydrocarbon feedstock and products to include:

- toxicity
- flammability
- specific gravity (SG)
- temperature.

Unit 340

Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment

UAN:	M/601/7955
Level:	Level 3
Credit value:	4
GLH:	10
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to monitor operational factors and react to them as necessary
Assessment criteria
The learner can: 1.1 Identify, note and react to factors likely to affect operations 1.2 Identify and make appropriate recommendations to relevant personnel on improving conditions

Learning outcome
The learner will: 2. Be able to liaise with others to maintain a safe working environment
Assessment criteria
The learner can: 2.1 Verify information received and give appropriate advice based on that information 2.2 Disseminate requirements relating to work activities to relevant personnel 2.3 Consult and seek advice on permit to work requirements from relevant personnel 2.4 Use effective communication techniques with all relevant personnel

Learning outcome
The learner will: 3. Be able to record and maintain health, environment and safety information
Assessment criteria
The learner can: 3.1 Record all relevant operations and services information 3.2 Maintain appropriate and clear records both written and computer based 3.3 Maintain all relevant maintenance and health, environment and safety procedures

Learning outcome
The learner will: 4. Be able to work within current health, environment and safety legislation
Assessment criteria
The learner can: 4.1 Determine if the working conditions and the use of resources satisfy current legislation 4.2 Identify and take appropriate action on potential or actual breaches of requirements

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Deal effectively with accidents and incidents 5.2 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 340

Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Monitor and Maintain Health, Environment and Safety Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Unit 341

How to Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

UAN:	J/601/7962
Level:	Level 3
Credit value:	5
GLH:	40
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know the plant layout
Assessment criteria
The learner can: 1.1 Describe the plant layout and its integration with other processes and systems

Learning outcome
The learner will: 2. Know the emergency procedures and the effect of these procedures
Assessment criteria
The learner can: 2.1 Explain the emergency procedures for the installation 2.2 Explain how to react appropriately in an emergency situation 2.3 Explain the operation of and potential implications of: <ul style="list-style-type: none">• the emergency shutdown control systems• the fire and gas control systems 2.4 Identify those who must be contacted and how to contact them 2.5 Explain the effect and potential implications of loss of any system and its reinstatement

Learning outcome
The learner will: 3. Know how raw materials react and the properties of the products that are produced
Assessment criteria
The learner can: 3.1 Identify the reactions taking place and the effect of changes to the physical and chemical properties of the reactants and products 3.2 Identify the composition and properties of the fluids and gases that are produced

Learning outcome
The learner will: 4. Know how the equipment and systems affect the safe production of hydrocarbons
Assessment criteria
The learner can: 4.1 Describe the equipment and its function and operation 4.2 Explain how to access and interpret the status of the appropriate equipment and systems

Learning outcome
The learner will: 5. Know the conditions and parameters that maintain a safe working environment
Assessment criteria
The learner can: 5.1 Identify the normal operating parameters and their tolerances 5.2 Explain the functioning of remote process control including instrumentation and process logic controllers 5.3 Explain the effects of changes in ambient conditions on plant operation 5.4 Identify the methods and consequences of isolation, depressurisation and draining

Learning outcome
The learner will: 6. Know how to access and use information from different sources
Assessment criteria
The learner can: 6.1 Explain how to access and interpret plant drawings and manuals 6.2 Explain how to access and interpret information on weather conditions 6.3 Explain how to access key emergency response personnel

Learning outcome
The learner will: 7. Know the systems and methods for maintaining a safe environment
Assessment criteria
The learner can: 7.1 Explain the consequences of emissions to the environment 7.2 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 8. Know how to work to organisational and operational requirements
Assessment criteria
The learner can: 8.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 8.2 Explain how to interpret operational requirements 8.3 Explain the implications of statutory and organisational requirements

Unit 341 How to Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Emergencies include those relating to:

- people
- plant
- the environment.

Emergency situations should include:

- operational difficulties
- extreme weather
- equipment failure
- leaks
- fires
- critical situations.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

The composition and properties of produced fluids and gases should include:

- toxicity
- flammability
- specific gravity (SG)
- temperature.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

The status of equipment and systems should include:

- detection
- protection
- communications
- evacuation.

Reacting appropriately to an emergency situation should include:

- make safe
- isolate
- shutdown
- evacuate the work area
- informing connecting installations and others
- do nothing
- activate internal emergency response teams
- inform duty personnel
- inform adjacent facilities
- activate emergency shutdown (EDS)
- account for people.

Unit 342

Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

UAN:	F/601/7961
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to maintain a state of readiness in case of an emergency
Assessment criteria
The learner can: 1.1 Access current emergency procedures and report all anomalies 1.2 Take part in drills and exercises 1.3 Identify all conditions which may affect the emergency response

Learning outcome
The learner will: 2. Be able to identify and respond to emergency situations
Assessment criteria
The learner can: 2.1 Identify developing and existing emergency situations 2.2 Activate relevant alarms and take actions appropriate to the situation 2.3 Identify and take the actions required to make the situation safe

Learning outcome
The learner will: 3. Be able to monitor the situation to minimise risk
Assessment criteria
The learner can: 3.1 Monitor the situation and inform personnel so that risks to process, plant and equipment are minimised

Learning outcome
The learner will: 4. Be able to maintain all relevant communication channels to control an emergency situation
Assessment criteria
The learner can: 4.1 Report the emergency situation correctly 4.2 Communicate all relevant information and instructions 4.3 Clarify and act upon information received 4.4 Record information accurately 4.5 Hand over all safety critical information

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 342 Control Emergencies and Critical Situations Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Control Emergencies and Critical Situations Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Emergencies could be those relating to:

- people
- plant
- environment.

Emergency situations should include:

- operational difficulties
- extreme weather
- equipment failure
- leaks
- fires
- critical situations.

Types of alarms should include:

- audible
- oral warnings
- installation specific fixed system.

Appropriate information should include:

- oral
- telephone
- public address system
- radio.

Reacting appropriately to an emergency situation should include:

- make safe
- isolate
- shutdown
- evacuate the work area
- informing connecting installations and others
- do nothing
- activate internal emergency response teams
- inform duty personnel
- inform adjacent facilities
- activate emergency shutdown (EDS)
- account for people.

Unit 343

How to Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment

UAN:	D/601/7966
Level:	Level 3
Credit value:	2
GLH:	18
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to adopt a professional approach to ensuring effective working relationships
Assessment criteria
The learner can: 1.1 Identify the main components of productive working relationships 1.2 Describe how to avoid damaging working relationships 1.3 Describe how working relationships might be improved

Learning outcome
The learner will: 2. Know how to communicate
Assessment criteria
The learner can: 2.1 Explain how to communicate effectively, to maintain productive working relationships

Learning outcome
The learner will: 3. Know how to involve others in the decision making process
Assessment criteria
The learner can: 3.1 Explain how to analyse proposals 3.2 Explain how proposals might be used to make improvements

Learning outcome
The learner will: 4. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 4.1 Explain how to work with and within the Safe Systems of Work system 4.2 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP) 4.3 Explain how to identify, control and minimise work area hazards and reduce risks to ALARP

Learning outcome
The learner will: 5. Know the role of self and others
Assessment criteria
The learner can: 5.1 Identify own job role, immediate manager's job role and the limits of responsibilities for each role 5.2 Identify the limits of own expertise

Learning outcome
The learner will: 6. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Explain the implications of statutory and organisational requirements 6.2 Explain how to interpret operational requirements

Unit 343 How to Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Situations where communication is used must include, as appropriate:

- informal meetings
- formal meetings
- one to ones
- normal work situations
- team briefings
- contingency situations
- Handovers.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 344

Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment

UAN:	Y/601/7965
Level:	Level 3
Credit value:	2
GLH:	6
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to adopt a professional approach to ensuring effective working relationships
Assessment criteria
The learner can: 1.1 Make clear efforts to establish and maintain productive working relationships 1.2 Include others in the decision making process, where this is applicable

Learning outcome
The learner will: 2. Be able to offer support to colleagues, within the limits of own responsibility
Assessment criteria
The learner can: 2.1 Provide opportunities to discuss work-related matters with relevant people 2.2 Provide opportunities to discuss personal problems 2.3 Refer individuals to others where appropriate

Learning outcome
The learner will: 3. Be able to pass on and receive information necessary for effective operations
Assessment criteria
The learner can: 3.1 Record all relevant information 3.2 Ensure that information given and received on current operational status is accurate and complete

Learning outcome
The learner will: 4. Be able to use communication techniques to ensure effective operations
Assessment criteria
The learner can: 4.1 Communicate clearly: <ul style="list-style-type: none"> • changes in operational requirements • all relevant operating instructions 4.2 Communicate all relevant information on activities, progress, results and achievements to immediate manager

Learning outcome
The learner will: 5. Be able to involve others in the decision making process
Assessment criteria
The learner can: 5.1 Encourage individuals to offer ideas and views and provide them with appropriate feedback 5.2 Provide clear reasons to individuals where ideas and views are not progressed

Learning outcome
The learner will: 6. Be able to contribute to improvements in the workplace
Assessment criteria
The learner can: 6.1 Present clear proposals 6.2 Analyse proposals and, where appropriate, put forward alternatives

Learning outcome
The learner will: 7. Be able to enhance productive working relationships with immediate manager
Assessment criteria
The learner can: 7.1 Seek ways of improving the relationship with immediate manager, if this is necessary 7.2 Maintain the relationship with immediate manager where disagreements occur 7.3 Seek information and advice from immediate manager when appropriate

Learning outcome
The learner will: 8. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 8.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 8.2 Leave the work area clean and hazard free

Unit 344 Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Create, Maintain and Enhance Productive Working Relationships Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- individual operation
- team operation
- consideration of H₂S (hydrogen sulphide) and other toxic substances
- maintaining communication
- reacting to on-site emergencies.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Situations where communication is used must include, as appropriate:

- informal meetings
- formal meetings
- one to ones
- normal work situations
- team briefings
- contingency situations
- handovers.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 345

How to Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	R/601/7978
Level:	Level 3
Credit value:	4
GLH:	32
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know the plant environment and layout
Assessment criteria
The learner can: 1.1 Explain how to access and interpret operational instructions 1.2 Explain the plant layout and its connection with other systems

Learning outcome
The learner will: 2. Know who to liaise with when starting up integrated process systems
Assessment criteria
The learner can: 2.1 Identify who to deal with when starting up integrated processes

Learning outcome
The learner will: 3. Know how to maintain the correct plant conditions
Assessment criteria
The learner can: 3.1 Explain how to achieve correct operating conditions 3.2 Explain how to achieve optimum processing

Learning outcome
The learner will: 4. Know how to minimise and deal with faults and hazards
Assessment criteria
The learner can: 4.1 Explain the appropriate action to take on identification of faults 4.2 Identify work area hazards that affect integrated process systems 4.3 Identify who to inform if a hazard is identified 4.4 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 5. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Explain how to work with and within the Safe Systems of Work system 5.2 Explain how to select, use and care for Personal Protective Equipment (PPE) 5.3 Describe the implications of statutory and organisational requirements 5.4 Explain how to interpret operational requirements

Unit 345 How to Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Dealing with other people should include:

- co-workers
- supervisors
- managers
- workers of other disciplines.

Faults should include:

- damage
- wear
- malfunction
- process deviations
- service defects.

Hazards should include:

- spillages
- uncontrolled emissions
- H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Unit 346

Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	L/601/7977
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare to start up integrated process systems
Assessment criteria
The learner can: 1.1 Obtain correct operational instructions 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Prepare plant and utilities

Learning outcome
The learner will: 2. Be able to take responsibility for others
Assessment criteria
The learner can: 2.1 Organise own and others' work where appropriate 2.2 Brief relevant personnel

Learning outcome
The learner will: 3. Be able to maintain the correct plant conditions
Assessment criteria
The learner can: 3.1 Facilitate optimum processing and the correct operating conditions

Learning outcome
The learner will: 4. Be able to deal with problems
Assessment criteria
The learner can: 4.1 Identify faults accurately and take appropriate action 4.2 Identify difficulties with relevant parts of the Safe Systems of Work system and take appropriate action

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 5.2 Maintain the work area to be clean and hazard free

Unit 346 Prepare and Start Up Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Prepare and Start Up Integrated Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Dealing with other people should include:

- co-workers
- supervisors
- managers
- workers of other disciplines.

Faults should include:

- damage
- wear
- malfunction
- process deviations
- service defects.

Hazards should include:

- spillages
- uncontrolled emissions
- H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Unit 347

How to Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	L/601/7980
Level:	Level 3
Credit value:	5
GLH:	40
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to check the required information
Assessment criteria
The learner can: 1.1 Identify the different sources of information 1.2 Identify the nature of information required 1.3 Explain how to deal with oral and written information 1.4 Explain how to interpret plant drawings and manuals

Learning outcome
The learner will: 2. Know the function and operation of plant and equipment
Assessment criteria
The learner can: 2.1 Describe the use and functions of the equipment 2.2 Describe the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know how to achieve the specification parameters
Assessment criteria
The learner can: 3.1 Identify normal plant conditions and the tolerances within which they operate 3.2 Explain what normal operating conditions are and how they are achieved 3.3 Explain the effects of changes in ambient conditions on plant operation 3.4 Explain how to deal with process system throughput

Learning outcome
The learner will: 4. Know how to deal with the reactions taking place
Assessment criteria
The learner can: 4.1 Explain the reactions taking place, conditions and effects of changes 4.2 Describe the composition and properties of hydrocarbon feedstock and products

Learning outcome
The learner will: 5. Know how to monitor process systems
Assessment criteria
The learner can: 5.1 Explain how to perform leak testing and sampling 5.2 Explain how to interpret the results of leak testing and sampling

Learning outcome
The learner will: 6. Know how to identify and deal with faults and emergency situations
Assessment criteria
The learner can: 6.1 Explain how to identify: <ul style="list-style-type: none"> • emergency situations • process system faults 6.2 Identify the actions appropriate to emergency situations 6.3 Explain types and causes of deviations and the relevant actions to take when they occur

Learning outcome
The learner will: 7. Know how abnormal conditions affect the process system
Assessment criteria
The learner can: 7.1 Describe the emergency shutdown control systems 7.2 Describe the fire and gas control systems 7.3 Describe the effects of loss of any utility and its reinstatement

Learning outcome
The learner will: 8. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 8.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 9. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 9.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 9.2 Describe the implications of statutory and organisational requirements 9.3 Explain how to interpret operational requirements 9.4 Identify the limits of own responsibilities

Unit 347 How to Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.
-

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Reactions and changes should include chemical and physical properties. Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

Emergency situations should include:

- process deviations
- extreme weather conditions
- spillages
- uncontrolled emissions.

Process system throughput should include:

- increase/decrease throughput
- specified sequence
- recommended rate.

System faults should include:

- lack of services and supply
- variances in services
- mechanical and electrical breakdown
- process
- utility setting deviations.

Actions to be taken in the event of a emergency situation should include:

- quick shut down
- return process to within safe parameters
- operate standby equipment.

Information required could be:

- oral
- written
- equipment status
- process status
- handover reports.

Actions to take when a deviation occurs, include:

- report
- record
- adjust.

Unit 348

Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	Y/601/7979
Level:	Level 3
Credit value:	5
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to check the information supplied
Assessment criteria
The learner can: 1.1 Review the information to ensure that it is accurate and complete 1.2 Take corrective action if anomalies are found in the information 1.3 Update the information if this is required

Learning outcome
The learner will: 2. Be able to use the equipment
Assessment criteria
The learner can: 2.1 Demonstrate the use of the instrumentation and process logic controllers, as applicable to the plant

Learning outcome
The learner will: 3. Be able to maintain normal operating conditions
Assessment criteria
The learner can: 3.1 Achieve the required process system specification through appropriate work methods/techniques 3.2 Ensure normal operating conditions by appropriate process systems throughput 3.3 Maintain the process system at the required normal operating conditions

Learning outcome
The learner will: 4. Be able to deal with faults and emergency situations
Assessment criteria
The learner can: 4.1 Identify process system faults and abnormal operating conditions 4.2 Respond to emergency situations and take appropriate action to minimise their impact

Learning outcome
The learner will: 5. Be able to monitor process systems
Assessment criteria
The learner can: 5.1 Interpret the results of sampling and testing 5.2 Make adjustments if this is necessary, to maintain normal operating conditions 5.3 Report deviations that are not within own responsibility 5.4 Take samples and carry out relevant tests and comparative testing

Learning outcome
The learner will: 6. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 6.2 Maintain the work area to be clean and hazard free

Unit 348 Operate and Monitor Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Operate and Monitor Integrated Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work.
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Emergencies could be those relating to:

- people
- plant
- environment.

Emergency situations should include:

- process deviations
- extreme weather conditions
- spillages
- uncontrolled emissions.

Process system throughput should include:

- increase/decrease throughput
- specified sequence
- recommended rate.

System faults should include:

- lack of services and supply
- variances in services
- mechanical and electrical breakdown
- process
- utility setting deviations.

Actions to be taken in the event of an emergency situation should include:

- quick shut down
- return process to within safe parameters
- operate standby equipment.

Information required could be:

- oral
- Written
- equipment status
- process status
- handover reports.

Actions to take when a deviation occurs, include:

- report
- Record
- adjust .

Unit 349

How to Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	Y/601/7982
Level:	Level 3
Credit value:	4
GLH:	32
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to check the required information
Assessment criteria
The learner can: 1.1 Explain how to access and interpret: <ul style="list-style-type: none">• shut down instructions• operational instructions 1.2 Identify the different sources of information 1.3 Explain how to interpret plant drawings and manuals

Learning outcome
The learner will: 2. Know the plant environment
Assessment criteria
The learner can: 2.1 Describe the plant layout and its connection with other systems

Learning outcome
The learner will: 3. Know the function and operation of plant and equipment
Assessment criteria
The learner can: 3.1 Describe the equipment and its function, as relevant to the plant 3.2 Describe the functioning of process control including instrumentation and process logic controllers 3.3 Explain how to operate integrated process systems, as appropriate to the plant

Learning outcome
The learner will: 4. Know how to shut down integrated process systems
Assessment criteria
The learner can: 4.1 Explain how to input and set shut down settings, process variables and services 4.2 Explain how to isolate plant and utilities from operating sources

Learning outcome
The learner will: 5. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 5.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 6. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 6.2 Describe the implications of statutory and organisational requirements 6.3 Explain how to interpret operational requirements

Unit 349 How to Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Shut down instructions should be:

- oral
- written.

Operational instructions should include:

- sequence of shutdown
- recommended rate of shut down.

Shut down hazards should include:

- standby equipment
- operational
- vents
- noise
- heat.

Unit 350

Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	R/601/7981
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare for shutdown
Assessment criteria
The learner can: 1.1 Obtain operational instructions 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Determine shut down time and make appropriate preparations for shut down 1.4 Brief relevant personnel on shut down procedures

Learning outcome
The learner will: 2. Be able to shutdown integrated process systems
Assessment criteria
The learner can: 2.1 Input and set shut down settings, process variables and services 2.2 Isolate plant and utilities 2.3 Shut down the process system safely

Learning outcome
The learner will: 3. Be able to minimise risks when shutting down
Assessment criteria
The learner can: 3.1 Protect against shutdown hazards 3.2 Monitor shut down hazards and take corrective action to minimize risk

Learning outcome
The learner will: 4. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 4.1 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 350 Prepare and Shut Down Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Prepare and Shut Down Integrated Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Unit 351

How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

UAN:	H/601/7984
Level:	Level 3
Credit value:	4
GLH:	32
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to interpret and use information
Assessment criteria
The learner can: 1.1 Identify the different sources of information available 1.2 Explain how to deal with oral and written information 1.3 Explain how to access and interpret instructions 1.4 Explain how to interpret plant drawings and manuals 1.5 Explain how to access and interpret operational instructions on safety, downtime, tools and equipment used

Learning outcome
The learner will: 2. Know the functions of the equipment
Assessment criteria
The learner can: 2.1 Describe the equipment and its functions 2.2 Describe the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know the factors that affect safe systems
Assessment criteria
The learner can: 3.1 Describe the properties of purging media 3.2 Identify the factors impacting upon optimising performance 3.3 Describe the composition and properties of hydrocarbon feedstock and products 3.4 Identify all relevant sources of energy to prime movers

Learning outcome
The learner will: 4. Know how reactions to abnormal conditions affect the process system
Assessment criteria
The learner can: 4.1 Describe the effects of emergency shutdown control systems 4.2 Describe the effects of fire and gas control systems

Learning outcome
The learner will: 5. Know how to isolate process plant
Assessment criteria
The learner can: 5.1 Identify isolation devices and methods of installation

Learning outcome
The learner will: 6. Know how to de-isolate process plant
Assessment criteria
The learner can: 6.1 Explain the principles of de-isolation

Learning outcome
The learner will: 7. Know how to maintain safety during isolation and de-isolation activities
Assessment criteria
The learner can: 7.1 Identify how risks can be minimised through appropriate reporting, adjusting and recording 7.2 Explain how to identify hazards 7.3 Identify relevant tests and confirm safety of the plant and equipment

Learning outcome
The learner will: 8. Know the systems and methods for maintaining a safe environment
Assessment criteria
The learner can: 8.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP) 8.2 Explain the methods and limitations of: <ul style="list-style-type: none"> • depressurisation/pressurisation • blowdown • temperature • relief systems • drains • flares • vents

Learning outcome
The learner will: 9. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 9.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 9.2 Describe the implications of statutory and organisational requirements 9.3 Explain how to work with and within the relevant parts of the Safe Systems of Work system 9.4 Explain how to interpret operational requirements 9.5 Identify the limits of own responsibilities

Unit 351 How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Instructions should relate to:

- safety
- downtime
- integration of processes.

Information should relate to:

- work activity briefing provided to others
- clarification of operational instructions
- work activity recording.

Oral and written information should include:

- reinstatement completion details
- work activity details.

Factors impacting upon optimising performance should include:

- layout
- tools and equipment required
- purging medium required.

Hazards should include:

- spillages
- uncontrolled emissions
- extreme weather conditions.

Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

Unit 352

Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

UAN:	D/601/7983
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare for isolation and de-isolation of plant and equipment
Assessment criteria
The learner can: 1.1 Obtain instructions and organise work correctly 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Ensure that the plant and equipment is prepared 1.4 Monitor preparations and minimise risks

Learning outcome
The learner will: 2. Be able to inform relevant others of work activities
Assessment criteria
The learner can: 2.1 Ensure that relevant personnel are briefed

Learning outcome
The learner will: 3. Be able to isolate plant and equipment
Assessment criteria
The learner can: 3.1 Isolate plant and equipment safely 3.2 Monitor and maintain the status of the isolation

Learning outcome
The learner will: 4. Be able to de-isolate plant and equipment
Assessment criteria
The learner can: 4.1 De-isolate plant and equipment safely 4.2 Monitor de-isolation and minimise risks

Learning outcome
The learner will: 5. Be able to maintain safety during isolation and de-isolation activities
Assessment criteria
The learner can: 5.1 Carry out relevant tests and confirm safety of the plant and equipment 5.2 Ensure that the relevant parts of the Safe Systems of Work system are operated effectively

Learning outcome
The learner will: 6. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 6.2 Maintain the work area to be clean and hazard free

Unit 352 Isolate and Reinstate Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Isolate and Reinstate Process Plant and Equipment Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Risks can relate to:

- personnel
- environment
- process
- plant
- equipment.

Unit 353

How to Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

UAN:	F/601/7992
Level:	Level 3
Credit value:	4
GLH:	32
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to interpret and use the information available
Assessment criteria
The learner can: 1.1 Explain how to access and interpret instructions 1.2 Explain how to access, interpret and communicate operational requirements 1.3 Explain how to interpret drawings and manuals about the integrated process systems 1.4 Explain how to deal with oral and written information

Learning outcome
The learner will: 2. Know the plant environment
Assessment criteria
The learner can: 2.1 Describe the plant layout and its integration with other processes and systems 2.2 Identify the factors impacting upon optimising performance 2.3 Identify the normal operating parameters and their tolerances

Learning outcome
The learner will: 3. Know the functions of the equipment
Assessment criteria
The learner can: 3.1 Explain the effects of equipment on integrated process system operation 3.2 Explain the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 4. Know how to deal with the reactions taking place
Assessment criteria
The learner can: 4.1 Explain the reactions taking place, conditions and effects of changes

Learning outcome
The learner will: 5. Know the factors that affect safe systems
Assessment criteria
The learner can: 5.1 Describe the properties of purging media and their effects upon integrated process systems 5.2 Describe the composition and properties of hydrocarbon feedstock and products

Learning outcome
The learner will: 6. Know how to maintain safety
Assessment criteria
The learner can: 6.1 Explain how to identify hazards 6.2 Identify the safe working practices appropriate to the location 6.3 Identify all relevant sources of energy to prime movers

Learning outcome
The learner will: 7. Know how reactions to abnormal conditions affect the process system
Assessment criteria
The learner can: 7.1 Describe the effects and operation of emergency shutdown control systems 7.2 Describe the effects and operation of fire and gas control systems

Learning outcome
The learner will: 8. Know how to isolate and de-isolate process plant
Assessment criteria
The learner can: 8.1 Identify isolation devices and methods of installation 8.2 Explain the principles of de-isolation

Learning outcome
The learner will: 9. Know how to minimise and deal with faults and hazards
Assessment criteria
The learner can: 9.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 10. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 10.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 10.2 Describe the implications of statutory and organisational requirements 10.3 Explain the procedures for entry into confined spaces 10.4 Explain how to interpret operational requirements 10.5 Identify the limits of own responsibilities

Unit 353

How to Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules
- processes
- arrangement of work area
- downtime
- maintenance rota.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Reactions and changes should include chemical and physical properties.

Instructions should include, as applicable to the plant:

- process system specification
- production schedule
- those covering different plant and equipment
- shut down instructions
- operational instructions
- safety
- downtime
- integration of processes.

Information should be oral and written and should include:

- work activity briefing provided to others
- clarification of operational instructions
- work activity recording
- reinstatement completion details
- work activity details.

The factors impacting upon optimising performance should include:

- layout
- tools and equipment required
- purging medium required.

Hazards should include, as applicable to the workplace:

- spillages
- uncontrolled emissions
- extreme weather conditions.

Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

Unit 354

Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

UAN:	A/601/7991
Level:	Level 3
Credit value:	4
GLH:	10
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare for maintenance
Assessment criteria
The learner can: 1.1 Access the instructions 1.2 Co-ordinate plans and preparations 1.3 Ensure that all information supplied and recorded is accurate and complete 1.4 Plan and organise own and others' work

Learning outcome
The learner will: 2. Be able to inform relevant others of work activities
Assessment criteria
The learner can: 2.1 Ensure that relevant personnel are briefed and work allocated to optimise effectiveness of preparation

Learning outcome
The learner will: 3. Be able to de-isolate plant and equipment
Assessment criteria
The learner can: 3.1 De-isolate plant and equipment 3.2 Monitor de-isolation and minimise risks to personnel, environment, process, plant and equipment

Learning outcome

The learner will:

4. Be able to maintain safety

Assessment criteria

The learner can:

- 4.1 Carry out relevant tests and confirm safety of the plant and equipment
- 4.2 Ensure that the relevant parts of the Safe Systems of Work system are operated effectively

Learning outcome

The learner will:

5. Be able to work to organisational and operational procedures

Assessment criteria

The learner can:

- 5.1 Work safely in accordance with operational requirements and associated Safe Systems of Work
- 5.2 Maintain the work area to be clean and hazard free

Unit 354 Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Facilitate the Maintenance of Process Plant and Equipment Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Instructions should include, as applicable to the plant:

- process system specification
- production schedule
- those covering different plant and equipment
- shut down instructions
- operational instructions
- safety
- downtime
- integration of processes.

Unit 355

How to Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment

UAN:	M/601/7986
Level:	Level 3
Credit value:	4
GLH:	36
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know the plant environment and layout
Assessment criteria
The learner can: 1.1 Explain how to access and interpret plant drawings and manuals 1.2 Explain the plant layout and its connection with other systems

Learning outcome
The learner will: 2. Know the function and operation of plant and equipment
Assessment criteria
The learner can: 2.1 Describe the effects of equipment upon the integrated process system 2.2 Describe the functions of remote process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know how to deal with the reactions taking place
Assessment criteria
The learner can: 3.1 Describe the composition and properties of hydrocarbon feedstock and products 3.2 Explain the reactions taking place, conditions and effects of changes

Learning outcome
The learner will: 4. Know how to maintain the correct plant conditions
Assessment criteria
The learner can: 4.1 Explain the effects of changes in ambient conditions on plant operation 4.2 Identify the normal operating parameters and associated tolerances

Learning outcome
The learner will: 5. Know how to minimise and deal with faults and hazards
Assessment criteria
The learner can: 5.1 Explain how to identify faults and work area hazards 5.2 Explain the appropriate action to take on identification of faults and work area hazards 5.3 Explain the effects of the loss of any system upon the integrated process system and its reinstatement 5.4 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 6. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 6.2 Describe the implications of statutory and organisational requirements 6.3 Explain how to interpret operational requirements

Unit 355 How to Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Hazards should include:

- spillages
- uncontrolled emissions
- H₂S (hydrogen sulphide) and other toxic substances
- extreme weather conditions.

Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

The effects of changes should include chemical and physical properties.

Unit 356

Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment

UAN:	K/601/7985
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare integrated process systems for remote control operation
Assessment criteria
The learner can: 1.1 Obtain correct operational instructions 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Prepare plant and utilities

Learning outcome
The learner will: 2. Be able to take responsibility for others
Assessment criteria
The learner can: 2.1 Organise own and others' work where appropriate 2.2 Brief relevant personnel

Learning outcome
The learner will: 3. Be able to support the process system
Assessment criteria
The learner can: 3.1 Integrate the plant and utilities 3.2 Facilitate optimum processing

Learning outcome
The learner will: 4. Be able to deal with problems
Assessment criteria
The learner can: 4.1 Identify faults and take appropriate action 4.2 Identify difficulties with relevant parts of the Safe Systems of Work system and take appropriate action

Learning outcome
The learner will: 5. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 5.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 5.2 Maintain own work area to be clean and hazard free

Unit 356

Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Prepare Integrated Process Systems for Remote Control Operation Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Information required could be:

- oral
- written
- equipment status
- process status
- handover reports.

Unit 357

How to Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	A/601/7988
Level:	Level 3
Credit value:	5
GLH:	40
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to check the required information
Assessment criteria
The learner can: 1.1 Identify the different sources of information 1.2 Identify the nature of information required 1.3 Explain how to interpret plant drawings and manuals

Learning outcome
The learner will: 2. Know the functions of the equipment
Assessment criteria
The learner can: 2.1 Describe the equipment and its functions 2.2 Describe the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know how to achieve the specification parameters
Assessment criteria
The learner can: 3.1 Identify normal plant conditions and the tolerances within which they operate 3.2 Explain how normal operating conditions are achieved 3.3 Explain the effects of changes in normal operating conditions on plant operation 3.4 Explain how to deal with process system throughput

Learning outcome
The learner will: 4. Know how to deal with the reactions taking place
Assessment criteria
The learner can: 4.1 Explain the reactions taking place, conditions and effects of changes 4.2 Describe the composition and properties of hydrocarbon feedstock and products

Learning outcome
The learner will: 5. Know how to monitor process systems
Assessment criteria
The learner can: 5.1 Explain how to monitor a system

Learning outcome
The learner will: 6. Know how to identify and deal with emergency situations and faults
Assessment criteria
The learner can: 6.1 Explain how to identify: <ul style="list-style-type: none"> • emergency situations • process system faults 6.2 Identify the actions appropriate to emergency situations and faults 6.3 Explain the types and causes of conditions and the relevant actions to take when they occur

Learning outcome
The learner will: 7. Know how reactions to abnormal conditions affect the process system
Assessment criteria
The learner can: 7.1 Describe the effects of emergency shutdown control systems 7.2 Describe the effects of fire and gas control systems 7.3 Describe the effects of loss of any utility and its reinstatement

Learning outcome
The learner will: 8. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 8.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP)

Learning outcome
The learner will: 9. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 9.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 9.2 Describe the implications of statutory and organisational requirements 9.3 Explain how to interpret operational requirements 9.4 Identify the limits of own responsibilities

Unit 357 How to Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Reactions and changes should include chemical and physical properties. Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

Emergency situations should include:

- process deviations
- extreme weather conditions
- spillages
- uncontrolled emissions.

Emergencies could be those relating to:

- people
- plant
- environment.

Process system throughput should include:

- increase/decrease throughput
- specified sequence
- recommended rate.

System faults should include:

- lack of services and supply
- variances in services
- mechanical and electrical breakdown
- process
- utility setting deviations.

Actions to be taken in the event of an emergency situation should include:

- quick shut down
- return process to within safe parameters
- operate standby equipment.

Information required could be:

- oral
- written
- equipment status
- process status
- handover reports.

Actions to take when a condition occurs, include:

- report
- record
- adjust.

Monitoring a system includes:

- flare and vent
- emergency shut down
- fire and gas.

Unit 358

Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	T/601/7987
Level:	Level 3
Credit value:	5
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to check the information supplied
Assessment criteria
The learner can: 1.1 Ensure that all information supplied and recorded is accurate and complete

Learning outcome
The learner will: 2. Be able to achieve the specification parameters
Assessment criteria
The learner can: 2.1 Achieve the required process system specification through appropriate work methods/techniques

Learning outcome
The learner will: 3. Be able to maintain normal operating conditions
Assessment criteria
The learner can: 3.1 Ensure normal operating conditions by appropriate process systems throughput 3.2 Maintain the process system in the required condition 3.3 Take appropriate action to maintain process parameters

Learning outcome
The learner will: 4. Be able to deal with faults and emergency situations
Assessment criteria
The learner can: 4.1 Identify process system faults and abnormal operating conditions 4.2 Respond to emergency situations and take appropriate action to minimise their impact

Learning outcome
The learner will: 5. Be able to monitor process systems
Assessment criteria
The learner can: 5.1 Take samples and carry out relevant tests and comparative testing 5.2 Report deviations that are not within limits of own responsibility promptly

Learning outcome
The learner will: 6. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 6.1 Work safely in accordance with operational requirements and associated Safe Systems of Work 6.2 Maintain the work area to be clean and hazard free

Unit 358 Remotely Control Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Remotely Control Integrated Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Reactions and changes should include chemical and physical properties.

Emergency situations should include:

- process deviations
- extreme weather conditions
- spillages
- uncontrolled emissions.

Emergencies could be those relating to:

- people
- plant
- environment.

Process system throughput should include:

- increase/decrease throughput
- specified sequence
- recommended rate.

System faults should include:

- lack of services and supply
- variances in services
- mechanical and electrical breakdown
- process
- utility setting deviations.

Actions to be taken in the event of an emergency situation should include:

- quick shut down
- return process to within safe parameters
- operate standby equipment.

Information required could be:

- oral
- written
- equipment status
- process status
- handover reports.

Actions to take when a condition occurs, include:

- report
- record
- adjust.

Monitoring a system includes:

- flare and vent
- emergency shut down
- fire and gas.

Unit 359

How to Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	T/601/7990
Level:	Level 3
Credit value:	4
GLH:	36
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Know how to check the required information
Assessment criteria
The learner can: 1.1 Explain how to access and interpret: <ul style="list-style-type: none">• shut down instructions• operational instructions 1.2 Identify the different sources of information 1.3 Explain how to interpret plant drawings and manuals

Learning outcome
The learner will: 2. Know the function and operation of plant and equipment
Assessment criteria
The learner can: 2.1 Describe the equipment and its function, as relevant to the plant 2.2 Describe the functioning of process control including instrumentation and process logic controllers

Learning outcome
The learner will: 3. Know how to shut down process systems
Assessment criteria
The learner can: 3.1 Explain how to input and set shut down settings, process variables and services 3.2 Explain how to isolate plant and utilities from operating sources 3.3 Identify the isolation devices and their methods of installation

Learning outcome
The learner will: 4. Know how to maintain safety
Assessment criteria
The learner can: 4.1 Identify real and potential shut down hazards 4.2 Explain the properties of purging media and its effects on systems 4.3 Describe the composition and properties of hydrocarbon feedstock and products 4.4 Identify all relevant sources of energy to prime movers

Learning outcome
The learner will: 5. Know how reactions to abnormal conditions affect the process system
Assessment criteria
The learner can: 5.1 Describe the effects of emergency shutdown control systems 5.2 Describe the effects of fire and gas control systems

Learning outcome
The learner will: 6. Know how to minimise and deal with safety issues in the workplace
Assessment criteria
The learner can: 6.1 Explain how to use Safe Systems of Work processes to: <ul style="list-style-type: none"> • identify hazards • mitigate or reduce risks to as low as reasonably practicable (ALARP) 6.2 Explain the methods and limitations of: <ul style="list-style-type: none"> • depressurisation/pressurisation • blowdown • temperature • relief systems • drains • flares • vents

Learning outcome
The learner will: 7. Know how to work to organisational and operational procedures
Assessment criteria
The learner can: 7.1 Explain how to select, use and care for Personal Protective Equipment (PPE) 7.2 Describe the implications of statutory and organisational requirements 7.3 Explain how to interpret operational requirements

Unit 359 How to Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant.

An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove knowledge of the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Personal Protective Equipment (PPE) should include:

- sight/hearing protection
- coveralls
- gloves
- footwear
- hard hats
- respirators.

Statutory requirements relate to documents such as Health and Safety at Work Act 1974 (HASAWA) and Control of Substances Hazardous to Health (COSHH).

Shut down instructions should be:

- oral
- written.

Operational instructions should include:

- sequence of shutdown
- recommended rate of shut down.

Shut down hazards should include:

- standby equipment
- operational
- vents
- noise
- heat.

Composition and properties of hydrocarbon feedstock and products should include:

- toxicity
- flammability
- specific gravity
- temperature.

Unit 360

Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

UAN:	F/601/7989
Level:	Level 3
Credit value:	4
GLH:	12
Endorsement by a sector or regulatory body:	This unit is endorsed by Cogent, the Sector Skills Council for Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymers

Learning outcome
The learner will: 1. Be able to prepare for shutdown
Assessment criteria
The learner can: 1.1 Obtain operational instructions 1.2 Ensure that all information supplied and recorded is accurate and complete 1.3 Determine shut down time and make appropriate preparations for shut down 1.4 Brief relevant personnel on shut down procedures

Learning outcome
The learner will: 2. Be able to shutdown process systems
Assessment criteria
The learner can: 2.1 Input and set shut down settings, process variables and services 2.2 Isolate plant and utilities from operating sources 2.3 Shut down the process system safely

Learning outcome
The learner will: 3. Be able to minimise risks when shutting down
Assessment criteria
The learner can: 3.1 Identify shut down hazards and protect against them 3.2 Monitor shut down and correct faults and problems as appropriate

Learning outcome
The learner will: 4. Be able to work to organisational and operational procedures
Assessment criteria
The learner can: 4.1 Work safely in accordance with operational requirements and associated Safe Systems of Work

Unit 360 Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries Hydrocarbons Environment

Supporting information

Guidance

This unit is subject to the requirements set out in the Cogent Assessment Strategy.

The assumed pre-requisite is that the learner is likely to be an experienced operator who is seeking progression.

This unit should not be taken prior to taking 'How to Prepare and Shut Down Remote Integrated Process Systems Within a Processing Industries (Hydrocarbons) Environment.'

Assessment Context

There is a degree of overall autonomy and judgement required in this environment. Integrated process systems are complex pieces of equipment that have the potential to impact on other areas of the plant. An integrated process system could be a continuous or a batch process with a number of unit operations that are interdependent.

During this work, the learner must take account of the relevant worksite operational requirements, procedures and safe working practices, as they apply to the learner.

The learner should prove competence across the following items as appropriate to the workplace:

- wells
- oil storage/discharge process
- gas process
- oil/gas process and export
- water injection
- metering
- utilities.

Safe Systems of Work must include processes or systems that incorporate:

- hazard identification
- risk assessment
- permit to work
- any other associated systems.

Operational requirements may include:

- policies
- procedures
- instructions
- codes of practice
- standards
- schedules.

Shut down hazards could include the following, as applicable to the workplace:

- standby equipment
- operational
- vents
- noise
- heat.



Appendix 1 Relationships to other qualifications

Links to other qualifications

These qualifications have connections to the:

- Level 2 Certificate in Process Engineering Maintenance **(0640-20)**
- Level 2 Diploma in Jetty Operations **(0640-21)**
- Level 2 Diploma in Bulk Liquid Operations **(0640-22)**
- Level 3 Diploma in Process Engineering Maintenance **(0640-30)**
- Level 3 Diploma in Jetty Operations **(0640-31)**
- Level 3 Diploma in Downstream Control Room Operations **(0640-34)**
- Level 3 Diploma in Downstream Field Operations **(0640-35)**



Appendix 2 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of learners
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)

and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for learners who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information such on such things as:

- **Walled Garden:** how to register and certificate learners on line
- **Qualifications and Credit Framework (QCF):** general guidance about the QCF and how qualifications will change, as well as information on the IT systems needed and FAQs
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.

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Useful contacts

UK learners General qualification information	T: +44 (0)844 543 0033 E: learnersupport@cityandguilds.com
International learners General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: singlesubjects@cityandguilds.com
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City & Guilds
1 Giltspur Street
London EC1A 9DD
T +44 (0)844 543 0000
F +44 (0)20 7294 2413
www.cityandguilds.com

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