-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION

GENERAL INFORMATION

-Module Number- **3252013** **-Session- 1993-94**

-Superclass- **VG**

-Title- **PLANT SERVICES 1**

-DESCRIPTION-

GENERAL COMPETENCE FOR UNIT: Describing the production, distribution and uses of plant services.

OUTCOMES

1. describe the production of plant services;

2. describe the distribution and uses of plant services.

CREDIT VALUE: 1 NC Credit

ACCESS STATEMENT: There is no access statement for this module.

For further information contact: Committee and Administration Unit, SQA, Hanover House, 24 Douglas Street, Glasgow G2 7NQ.

This specification is distributed free to all approved centres. Additional copies may be purchased from SQA (Sales and Despatch section) at a cost of £1.50 (minimum order £5).

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STATEMENT OF STANDARDS

UNIT NUMBER: 3252013

UNIT TITLE: PLANT SERVICES 1

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME

1. DESCRIBE THE PRODUCTION OF PLANT SERVICES

PERFORMANCE CRITERIA

(a) The identification of plant services required for the process industries is correct.
(b) The description of the methods of production of plant services is correct.
(c) The description of safety requirements for the operation of plant services is correct with respect to the use of personal protective equipment.
(d) The description of safety requirements for the operation of plant services is correct with respect to appropriate procedures and legislation.

RANGE STATEMENT

The range statement for this outcome is specified within the performance criteria.

EVIDENCE REQUIREMENTS

Written evidence of the ability to identify plant services required for process industries, describe their methods of production and various safety requirements.

OUTCOME

2. DESCRIBE THE DISTRIBUTION AND USES OF PLANT SERVICES

PERFORMANCE CRITERIA

(a) The identification of services required for a given process operation is correct.
(b) The identification of the positioning of plant services within a plant layout for a given process operation is correct.
(c) The description of the uses of plant services for a given process operation is correct.

RANGE STATEMENT

The range statement for this outcome is specified within the performance criteria.

EVIDENCE REQUIREMENTS

Written evidence of the ability to identify services required for a given process operation, identify the positioning of plant services within a plant layout and describe their uses.

ASSESSMENT RECORDS

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

SPECIAL NEEDS

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of Support Notes.

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SUPPORT NOTES

UNIT NUMBER 3252013

UNIT TITLE PLANT SERVICES 1

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

PURPOSE This module is designed to enable the candidate to acquire a knowledge of the production, distribution and uses of plant services. The module is appropriate for a wide range of processing industries, and could form part of the National Certificate Group Award in Basic Processing.

SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

This module will enable you to gain a knowledge of the production, distribution and uses of plant services.

CONTENT/CONTEXT This section is for guidance only and the content/context relevant to the candidate's area of study/employment should be chosen.

Industrial plant layout diagrams for each of the main services: Water, Steam, Air, Gas, Electricity, Refrigeration. Effect of loss, emergency power, lighting.

Water: quality/quantity required for process. Sea, storm and process water. Provision of industrial water. Disposal of waste water, drain systems; separaters.

Siphons: portable and non-portable.

Steam: sensible and latent heat, effect of pressure or temperature of saturated steam. Application of fire and water tube boilers. Quality/quantity required. Uses of steam for heating, cleaning, purging, trace heating.

Hazards associated with steam: scalds, burns, pipework hammer.

Compressed air: quality/quantity required, transport systems, colour coding.

A typical compressed air production system.
Uses: sparge, life support.

Vacuum: uses: transfer, drying, refrigeration. Level of vacuum required. Hazards - implosion.

Electricity: Ohm's Law - power distribution AC/DC, transformers, rectifiers, batteries, colour coding for wiring.

Refrigeration: uses: preservation/safety.

Hazards cold 'burns', toxicity of refrigerants.

APPROACHES TO GENERATING EVIDENCE A candidate-centred, resource-based learning approach is recommended. The outcomes in this module need not be taught separately and it is likely that an integrated approach will be used. The outcomes do not need to be tackled in the order shown.

During the work of the module, candidates should have several opportunities to develop practical and problem-solving skills. Each candidate should be assessed at appropriate points throughout the module. Where a candidate is unsuccessful in achieving an outcome, provision should be made for remediation and reassessment.

ASSESSMENT PROCEDURES Centres may use instruments of Assessment which are considered by tutors/trainers to be the most appropriate. Examples of Instruments of Assessment are as follows:

OUTCOMES 1 & 2 It is recommended that a combination of structured questions and restricted response questions are used here. The restricted response questions could be allocated to Outcome 1 PC (a) and Outcome 2 PCs (a) and (b).

PROGRESSION The candidate could progress onto the group Award in Processing.

RECOGNITION Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised and Recommended Groupings'.

REFERENCES

1. Guidelines for Module Writers.
2. SQA's National Standards for Assessment and Verification.
3. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
4. Procedures for special needs statements are set out in SQA's guide 'Students with Special Needs'.