# Higher National Qualifications

# And

# Scottish Vocational Qualifications

# Senior Moderator Report

# 2006

## Subject: Electrical Installation, Electrical Principles and Electrical Plant (CG 160, 231 and 274)

## Sector Panel: Engineering, Science and Mathematics

The purpose of this report is to provide feedback to centres on moderation which has taken place within Higher National and Scottish Vocational Qualifications in this subject.

## HIGHER NATIONAL UNITS

## FEEDBACK TO CENTRES

### General comments:

External moderation activities on HN units in cognate groups 160 – Electrical Installation, 231 – Electrical Principles and 274 Electrical Plant were limited to two moderation visits in cognate group 231 and one visit in cognate group 160. The external moderation visit in cognate group 160 was a return visit to lift the holds previously placed on two units.

The level of external moderation activity at HN level in the three cognate groups reflects at least to some extent the current low levels of uptake in HN Electrical Engineering qualifications. However, evidence gathered as part of the revalidation of the HNC/D Electrical Engineering suggests that over the next few years there will be an increased demand for electrical technicians and incorporated engineers produced in no small part by the retirement of many staff working in the electrical industries. It is thus anticipated that there will be an increasing demand from candidates to take HN units in the three cognate group areas.

On the basis of such limited HN external moderation activity it is difficult to comment on how the new EV8a. V2 form has operated. There is a sense from studying the three completed forms that external moderators were 'feeling their way' in terms of completing the form. Discussions at a cognate group training session in February 2006 revealed that moderators had experienced some difficulty in obtaining from centres all the information they required to complete the form. It was also noted that the time involved in writing up the form has increased significantly over the previous EV8 form.

An analysis of the three moderation forms indicates that national standards in the areas of Electrical Installation, Electrical Principles and Electrical Plant continue to be maintained mainly due to internal moderation procedures working effectively in centres.

### Advice on good practice and areas for further development:

1. Centres should continue to maintain laboratory and workshop activities so that candidates have an opportunity to relate the theory they learn in the classroom to practice. The use of simulation software is to be encouraged but not at the expense of practical, hands-on activities.

2. Centres may consider developing and sharing resource materials which provide candidates with additional support prior to any reassessment.

3. While it is understood that some centre staff give verbal feedback to candidates, it is recommended that more written feedback should be given on candidate written responses to help candidates identify where they may have gone wrong in an answer. Centre staff should not be frightened to give praise where a candidate has given a good response. Centres should seek to standardise their approach to giving feedback to candidates.

4. Centres should regularly check new assessment instruments to ensure they fully meet the requirements set out in the unit specification.

5. Centres should ensure that alternative assessments are included in all master files.

## HIGHER NATIONAL GRADED UNITS

### TITLES/LEVELS OF HN GRADED UNITS MODERATED

DN3V 34 Electrical Engineering: Graded Unit 1 (SCQF Level 7) - Examination

### FEEDBACK TO CENTRES

**General comments:**

This was the first year that the Electrical Engineering: Graded Unit 1 Examination was sat by candidates. Only one centre entered candidates: presenting 15 for the Examination. The paper was set and vetted by members of the Qualifications Support Team for Electrical Engineering. The paper was also independently sat by an external moderator so that he could check the standard of the paper and minimise errors in the paper. The scrutineer's view was that the paper was of a good standard.

Six out of fifteen candidates passed the paper at the first sitting. This represents a 40% pass rate. A resit paper has been arranged for August 2006. The Qualifications Support Team were disappointed by the low pass rate although they noted that two candidates scored over 80% which suggested that the paper was 'do-able' if candidates had done the appropriate revision.

The external moderation team observed that centre staff had marked a number of candidate scripts too severely. Centre staff were penalising candidates for simple arithmetic mistakes and penalising candidates again for the same arithmetic mistakes as they progressed through the question. Such marking errors are not surprising given that many new FE staff are not familiar with marking examinations based on a marking scheme. Centre staff are not to be criticised for their desire to maintain standards but there is clearly a training need in terms of marking examination papers which may well apply to new staff in many FE colleges. The upgrading of marks as part of the external moderation process is clear evidence that that process worked effectively.

**Advice on good practice and areas for further development:**

1. It is clearly important to get centre staff involved in writing examination questions for the Graded Unit Examination. However, newer staff will almost certainly need some initial support in writing questions. The Qualifications Manager for Engineering has indicated a willingness to assist in putting in arrangements to support new staff writing questions.

2. It is hoped that as more centres offer the HNC in Electrical Engineering, staff from centres can work together to produce one examination paper and one resit examination paper per year. The benefits of this include a reduction in workload on individual centre staff and a greater confidence in obtaining national standards by centres and external moderators working together to produce one high quality examination paper and one high quality resit paper.

## NATIONAL UNITS
**(i.e. Freestanding units which contribute to NPAs or NCs etc.)**

The units moderated contribute principally to the NC Electrical Engineering and NC Electrical Engineering Practice awards, although they may also contribute to other NC Engineering and NC Engineering Practice Group awards.

## TITLES/LEVELS OF NATIONAL UNITS MODERATED

Typical units include Conduit Systems, Cable Tray Systems, PVC Sheathed Wiring, Electricity for the Consumer. Electrical Fundamentals, Circuit Elements, Single Phase AC, Basic Electrical Plant Safety and Maintenance, Electrical Motor Applications and Electrical Machine Principles. These units are at SCQF Levels 5 and 6.

## FEEDBACK TO CENTRES

**General comments:**

The levels of external moderation activity in cognate groups 160 – Electrical Installation, 231 – Electrical Principles and 274 – Electrical Plant are shown in the table below.

| Cognate Group | No. of Centres Visited | No. of units externally moderated | No. of units accepted | No. of units placed on hold |
|---|---|---|---|---|
| 160 | 11 | 36 | 36 | 0 |
| 231 | 15 | 37 | 37 | 0 |
| 274 | 5 | 7 | 7 | 0 |

All centres visited in all three cognate groups were FE Colleges. It can be seen from the table that there has been a high level of external moderation activities in cognate groups 160 and 231 reflecting in part the popularity of electrical installation courses and the core nature of electrical principles units. There was a much lower level of external moderation activity in cognate group 274 indicating that few centres are currently offering NQ units in this cognate group.

It is pleasing to report that all units in all three cognate groups were accepted.

External moderator reports indicate that national standards of assessment were being maintained. Assessments were being marked correctly and consistently. Internal moderation procedures were working effectively in nearly all centres.

**Advice on good practice and areas for further development:**

1. Candidates should be encouraged to undertake risk assessments of laboratory and workshop areas they are going to work in before commencing work in them.

2. While most centres present their assessment materials to a high standard a few centres need to improve the quality of presentation of their assessment materials.

3. Most centres have very good internal moderation procedures in place but a few centres need to improve the rigour with which they apply their internal moderation procedures.

4. Staff offering NQ units in the security systems area should avoid over assessment and ensure that all performance criteria in the units are being covered in assessments.

5. Centres may wish to consider introducing self-completing unit progress forms for candidates to use.

6. Centres may wish to consider putting photographs of candidates beside their completed practical work.

7. Centres should ensure that all learning and teaching materials, including presentational materials, are of a high quality, correct, up-to-date and relevant

8. Centres may like to consider having tables and chairs in the middle of electrical installation workshop areas so that candidates have an area to sit in while producing drawings, completing notes, logbooks etc.

9. Centres should ensure that all laboratory and workshop areas used for inspection and testing purposes are as realistic as possible, well planned and resourced and have up-to date test equipment.