



**National Qualifications 2016
Internal Assessment Report
Electrical Engineering**

The purpose of this report is to provide feedback to centres on verification in National Qualifications in this subject.

National Qualifications (NQ) Units

The NQ units externally verified in Verification Group 419 Electrical Engineering were as follows:

- DHS8 10 Application of Electrical Installation Hand-Tools and Accessories (SCQF level 4)
- D9AF 11 Fundamental Electrical principles (Intermediate 2)
- D9AG 11 Basic Electrical Installation Systems and Protection (Intermediate 2)
- D9AH 11 Basic Electrical Installation Skills (Intermediate 2)
- F5D7 11 Fundamental Electrical Systems (SCQF level 5)
- F5FS 11 Inspection and Testing of Electrical Installations (SCQF level 5)
- F5H7 11 Circuit Element Devices (SCQF level 5)
- F5HE 11 Earthing Systems (SCQF level 5)
- F5HH 11 Electrical Plant Safety and Maintenance (SCQF level 5)
- F5HK 11 Electrical Principles (SCQF level 5)
- F5HP 11 Electrical Wiring Skills (SCQF level 5)
- F5HR 11 Electricity in the Home (SCQF level 5)
- F5HW 11 Installation of PVC Sheathed Wiring Systems (SCQF level 5)
- F5JK 11 Rotating Electrical Machines (SCQF level 5)
- F5D8 12 Fundamental Electrical Systems (SCQF level 6)
- F5DB 12 Fundamental Electronics (SCQF level 6)
- F5H3 12 Cable Ratings and Overcurrent Protection Devices (SCQF level 6)
- F5H8 12 Circuit Element Principles (SCQF level 6)
- F5HD 12 Earthing and Earth Fault Current Protection (SCQF level 6)
- F5HL 12 Electrical Principles (SCQF level 6)
- F5HN 12 Electrical Testing and Measurement (SCQF level 6)
- F5J7 12 Electronic Network Analysis (SCQF level 6)
- F5JT 12 Single and Three Phase Induction Motors (SCQF level 6)
- F5JV 12 Single Phase and Three Phase Principles (SCQF level 6)

General comments

In session 2015–16, 11 centres received external verification visits. All 11 centres were further education colleges, and the visits were conducted by four SQA qualification verifiers.

Twenty-four units were verified across the 11 centres. The qualification verifiers judged that, in almost all centres, there were significant strengths across all the criteria used to determine that centres have clear and accurate understanding of the requirements of the national standards.

Unit specifications, instruments of assessment and exemplification materials

The NC units that were externally verified utilised a combination of SQA assessment exemplar materials and centre-designed internal assessment instruments. All assessment instruments reviewed were found to be in line with SQA requirements and, as such, were valid, reliable and fair.

Evidence requirements

On reviewing assessment instruments and candidate evidence across the 11 centres, it was found that assessors and internal verifiers had a clear understanding of the evidence requirements in the NC units that were externally verified. Assessment decisions were seen to be accurate, consistent and fair. There was also evidence of standardisation activity having been carried out which ensured that assessment activities were being carried out consistently and fairly across different candidate groups.

Administration of assessments

All centres provided evidence of conducting regular meetings to review assessment instruments and environments, and the resources required to support them. Well-established systems were in place to support self-evaluation of courses and units to ensure continued validity and relevance of all assessments. Centres had clear, well-developed and established quality assurance systems which were being rigorously applied, and candidate evidence was being retained for lengths of time that exceeded SQA's requirements. All centres had processes in place to ensure that feedback from qualification verifiers was disseminated to all relevant staff.

Areas of good practice

Whilst undertaking visits to centres to verify NC units in Electrical Engineering, SQA qualification verifiers identified a number of areas of good practice.

- ◆ In all centres, candidates were being very well supported and had regular, scheduled contact with their assessors to review their progress and revise their assessment plans accordingly. In three centres, candidates also had weekly timetabled guidance sessions with their guidance tutor to ensure regular support and advice. One centre timetabled additional academic support sessions throughout the academic year.
- ◆ Across the centres visited, there was good practice identified in the way that regular, high-quality feedback is given to candidates. This was seen to be taking place after assessment events and during regular scheduled meetings. In one centre, the front sheets of assessment instruments had specific sections for the assessor and verifier to provide feedback. This had encouraged high levels of feedback for candidates.
- ◆ Qualification verifiers also commented on the good systems in place to track candidates' progress and ensure support needs are identified. In one centre, the effective use of candidate personal logs and learner progress checklists was ensuring that candidates' development needs were being particularly well met.
- ◆ Another example of good practice was observed in one centre where the use of plagiarism-checking software and online marking allowed candidates to submit reports and receive feedback whilst off-campus. In another centre, a practical assessment in unit F5JV 12 Single Phase and Three Phase Principles was being integrated into the assessment strategy for unit F5HN

12 Electrical Testing and Measurement, thus reducing the number of assessment events required.

Specific areas for improvement

Feedback from one visit report was that centres should ensure that they utilise current, industry standard documentation for delivering and assessing units which involve inspection and testing of electrical installations.