Guidance for Candidates – CEng / IEng

1. Introduction

The benchmark route to Professional Registration consists of the educational base, followed by initial professional development, and finally the professional review.

The Professional Institution will assess the competences demonstrated by a candidate in accordance with the requirements of UK-SPEC.

In view of the wide ranging nature of Engineering and of the disciplines covered by candidates, the assessment will be carried out appropriately in relation to the candidates disciplines and UK-SPEC and not against prescriptive competences.

2. Educational Base

2.1.   CEng

The exemplifying academic qualification for CEng is an accredited Master of Engineering (MEng) degree.

BEng (Hons) courses will be able to meet the accreditation requirements for CEng Interim Stage registration.

Candidates will then need to complete Further Learning in order to satisfy the full Final Stage registration requirement

2.2.   IEng

The exemplifying academic qualification for IEng is an accredited Bachelor of Engineering (BEng) degree.

Accredited HND/HNC or equivalent or Engineering Council Certificate courses will be able to meet the accreditation requirements for IEng Interim Stage registration.

Candidates will then need to complete Further Learning in order to satisfy the full Final Stage registration requirement

2.3.   Further Learning

This is required for those at interim registration to complete their educational base for CEng or IEng and must include the learning equivalent of 1 further academic year of study, with the aim of achieving "equivalence" with the higher level qualification. There are many means by which this can be achieved. No specific routes are detailed.

3. Initial Professional Development

Initial Professional Development involves the building of competence and professional breadth, inclusive of the business aspects of engineering. It is achieved by acquiring further learning and experience, often in a specialist role or field of engineering. Additionally, it develops the breadth of capability required to carry out responsibility and to make engineering decisions which take account

of social and economic factors. This cannot be acquired solely by formal study; it involves some structured learning from experience.

Initial Professional Development comprises training and learning from experience, inclusive of some experience of a responsible nature. The benchmark route comprises either accredited training and experience programmes, or accredited monitored professional development schemes. Other IPD arrangements may be approved. All candidates should maintain a detailed record, verified by superiors or mentors, to provide best evidence for the Professional Review.

3.1.   Training

Initial Training for should build on the educational base, to enable the candidate to carry theory successfully into practice. Well structured training, monitored by professional engineering mentors, will ensure that the candidate swiftly becomes confident and effective in the application of fundamental principles, the exercise of professional judgement, and the development of engineering technology.

The programme should extend beyond a chosen specialist area in order to provide a broad appreciation of the organisation's business needs and encourage effective communication with associated disciplines. It should also include a variety of challenging experiences in a real working environment, and be supported by appropriate off-the-job training. The later stages of training should be designed as preparation for an identified first post of responsibility.

3.2.   Responsible Experience

Responsible experience occurs when the candidate's employment requires them to develop, prove and be accountable for their technical competence and to demonstrate a satisfactory range of functions and characteristics. This work must include the exercise of independent technical judgement. It should also involve an appropriate level of responsibility for human and material resources, taking account of financial, commercial, safety, statutory and national considerations, and for the design, development, construction, manufacture, operation or maintenance of products, systems or services.

4. Professional Review

The Professional Review is the final assessment of a candidates competence and suitability for full registration. It is based on evidence of professional competence and commitment. Great importance is attached to the Professional review. The onus is on the candidate to make a case for registration based on evidence, against the general and specific criteria laid out later. The Professional Review will normally include a written report and an interview by two suitably qualified, experienced and registered Engineers of the appropriate level.

5. The Report

The written report should give details of the candidate's:

- educational record and academic attainment relative to the required standards
- structured or other initial professional development with supporting evidence

- areas of accountability for the exercise of engineering and technical judgement, as exemplified by the identification, analysis and solution of engineering problems, appropriate to the role of the Engineer.

The material in the report should demonstrate and substantiate the candidate's understanding of the technical, financial, social and environmental implications of decisions taken. It should also cover the candidate's efforts to keep up-to-date in technology, involvement in Institution activities and include a development action plan.

6. Guidance on Preparation for Professional Review

6.1.   Introduction

UK Spec represents a major overhaul of the ways in which individual candidates prepare for registration with the Engineering Council, and of the processes used in their assessment. Candidates have access to the assessment criteria and evidence requirements and must be able to demonstrate at the Professional Review how their achievement matches the standards.

6.2.   Professional Review

Professional Review is the process by which the final judgement for Institution membership and registration is made. Before a candidate is presented for review, administrative judgements will have been made to ensure that there is a prima facie case. This prior clearance both reduces the work to be undertaken by the Professional Review Assessors and highlights the particular contribution they have to make.

6.3.   The Criteria

The essence of UK-Spec is as follows:

- The criteria for registration in three 'Sections of the Register'. There are Sections for Engineering Technicians (EngTech), Incorporated Engineers (IEng) and Chartered Engineers (CEng).
- Idealised staged routes through education, initial professional development (incorporating training and responsible experience), professional review, registration and continuing professional development. This is done for ease of presentation. It is recognised that few people will go through a simple serial process; for many candidates, the elements will be interspersed over several years.
- The mechanisms by which various well-used courses and schemes are accredited, approved or otherwise formally recognised.
- The variety of alternative approaches that are equally acceptable as routes to registration, and to changing from one register section to another. Whilst these routes are equally acceptable as those formally recognised, there is inevitably a more complex and demanding assessment system at the end, because less has been determined and assured beforehand.
- A process of Professional Review, involves an assessment of:
  - current competence in professional practice;
  - personal commitment to professional codes of practice on conduct, risk, the environment and continuing professional development.

Competence and Commitment' are the key words in preparation for Professional Review. The key requirements are presented, as follows:

Competence	A	Knowledge and Understanding
	B	Application to Practice
	C	Leadership / Management / Supervision
	D	Interpersonal Skills
Commitment	E	Professional Conduct

This Professional Review guidance document amplifies the 'Roles and Responsibilities' statements with more detailed 'Competence and Commitment' outcome statements within the same structure. They also give guidance on the amount and type of evidence required at the Professional Review.

6.4.   Preparation by the Candidate

The first stage of preparation is for the candidate to make contact with the Secretariat of the Professional Institution. It is not possible to register with the Engineering Council, other than through an engineering Institution that is a Licensed Member of Engineering Council.

In principle, there is nothing that the Professional Review assessors can assess which candidates cannot determine for themselves. The criteria are set down in objective statements which are where possible versed in a way which relates to the variety of domains seen by a member of the Professional Institution.

It is intentional that UK-Spec provides opportunity for candidates to demonstrate their competence and commitment against objective criteria.

Candidates should seek guidance from a Professional Registration Advisor, as to the most appropriate section of the register for their application (ie for EngTech, for IEng or for CEng registration). It should not be assumed that this has been pre-determined by the educational course taken. Having completed an educational course which has been accredited for a particular section is a good start, but by no means pre-determines the outcome. It is also necessary to consider:

Whether the course was accredited for the full educational base criteria or whether it was accredited only for a shorter period, and would need to be supplemented by a 'Matching Section'. The relevance of the subject area of the educational course taken (whether accredited or not) to the area of practice and the 'discipline' or 'industrial sector' of the Licensed Member concerned.

- The direction taken by the candidate during Initial Professional Development and experience of professional work, in relation to the selected section of the register and class of membership.
- Most importantly, which set of 'Competence and Commitment' criteria (ie for EngTech, IEng or CEng) the candidate actually matches. Ultimately, it is the outcome of the formation process, in terms of current competence and commitment, which counts, and not just the courses undertaken nor qualifications achieved.

6.5.   Organising the Evidence

The judgements made about the candidate, both within the Institution Registration Committee and at the Professional Review including interview, are based on evidence submitted by candidates in

support of their caseCandidates are advised to choose a small but significant number of projects or work activities in which they have been engaged. Ideally, these will be activities which:

- Provide some 'hard evidence' for the reviewers, for example in the form of design studies, data sets, calculations, drawings, fault investigations, project plans, artefacts, photographs, computer programs.
- Are the candidate's own work; or larger pieces of work in which the candidate's personal contribution is identified and substantiated.
- Are able to act as a 'spine' running through several of the A1 to E5 'Evidence Guides' listed in the following pages under "Competence and Commitment"
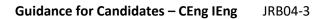
An example of the use of such a 'spine' is in the 'B1 to B4' area, which deals with technical practice. Each of the criteria could be met through a totally different project. But it ought to be simpler to organise and present if a consistent theme is used. This might then extend from the technical 'applications' of the Bs into some of the C, D and E activities.

As an example, an Environmental Impact Assessment might be presented as part of the technical aspect of a project. But it should also provide evidence for E3 (compliance with environmental codes), as well as for some of the 'communication' aspects of D1 and D2. If some new learning was required in the project, there will be evidence which can be used for E4 relating to Continuing Professional Development (CPD)

There is, of course, a danger of putting too much reliance on one project. Registration is not narrow and job-specific; it requires a breadth of experience and an ability to transfer capability from one area of work to another. So the candidate also needs to be able to show a reasonable range of work. For most people it would be difficult, if not impossible, to build the whole case on direct evidence which is transportable to the Professional Review venue. Planning ahead will provide several different approaches. For example:

- When the professional development programme is moderately well structured with the prior advice of the Professional Institution, the mentoring, assessment and recording process will have preserved some admissible records of certified work done against the criteria. This authenticated record will save much nugatory work at the Professional Review. Even if career directions have changed several times, it should still be possible to map 'old' achievements to 'new' criteria and demonstrate their continued validity.
- A candidate who is seeking registration in a less structured manner in mid-career, will need to go to the expanded 'competence and commitment' statements, the 'evidence guides' and the 'links to standards' already mentioned, and then assemble sufficient relevant evidence from current and former work.
- A candidate may well need to approach former colleagues, clients or managers and ask them formally to certify work which has been done in the past. These referees should not (and will not) be asked to make a judgement on a candidate, but only to confirm (usually in writing) whether certain 'outcomes' were achieved and, if so, with what degree of reliability, repeatability etc. It is the Professional Review panel members who make a holistic judgement and come to a registration recommendation. This is based on all of the evidence; any single piece will rarely provide sufficient basis for a decision.

- No matter what retrospective evidence and records are presented for the Professional Review, there will always be a requirement for evidence of reflection upon past work, evaluation of future needs and some form of action planning. The candidate must always bring a completed Development Action Plan to the Professional Review Interview.

No matter how much original material is available, it will only be valuable if it is indexed, cross-referenced and organised against the A1 to E5 criteria. It would not generally be helpful to present the full set of evidence on initial application. Candidates are, therefore, advised to think initially in terms of an overview of their Report, showing how the available evidence would demonstrate their competence and commitment. Guidance would then be given on what was needed at interview, and what might be sent in advance to assist authentication.

6.6.   A Final Word to Candidates

Professional Review is the final stage of assessment of competence and commitment prior to registration. It is up to the candidate to make the case that the criteria have been satisfied. The relevant criteria have been published, the processes and routes to registration (inclusive of the educational preparation) pave the way, and guidance is available from the Professional Institution.

However, it is the final outcome - evidence of meeting the A1 to E5 'roles and responsibilities' in a sensible and balanced way - which is vital. That case must finally be proved by the candidate, by virtue of the material presented to, and by the candidate's performance at, the Professional Review.

7. References

Competence and Commitment' statements (CEng and IEng)

UK Standard for Professional Engineering Competence (Engineering Council)