

# Register Guidance Note 15

## Registers of Security Engineers and Specialists Technical Report Route

### Introduction

If you do not have the appropriate educational base for Register of Security Engineers and Specialists (RSES) membership through formal academic qualifications, the RSES Technical Report Route (TRR) may allow you to use the equivalent academic knowledge gained by other means, including through your work experience, without completing a period of formal study. However, if you are professionally qualified or satisfy the educational base for RSES Membership, then you may apply through the standard routes outlined in 3009(2).

There are three grades of RSES membership which are broadly equivalent to Technician, Incorporated and Chartered status, hereafter referred to as Technician, Member and Principal Member grades respectively.

### **Applicants applying through TRR may only apply as General Security Advisor (GSA) at either Member or Principal Member.**

If you wish to apply for a specialist category you are expected to hold a relevant science or engineering academic qualification.

The appropriate grade of RSES membership, through the TRR, will depend on your experience in fulfilling the generic engineering, scientific and security competences for that grade in addition to the specific GSA competences. The generic competences are set out in [Annex B, RSES Guidance](#). The specific competences are set out in Annex C, RSES Guidance.

If you hold a non-accredited security-related academic qualification(s), i.e. they do not meet the requirements as outlined by UK-SPEC, and believe you possess the required generic engineering, scientific and security attributes and the specific competences for GSA you can apply for the RSES TRR. This applies as follows:

#### **For Principal Member:**

- a) *BEng (Hons) degree (accredited with Further Learning for CEng) (indicative 7 years\*)*
- b) *An engineering or cognate degree with sufficient technical basis of an equivalent standard or an overseas degree assessed to be of an equivalent standard or an IEng accredited degree - (indicative 7years\*);*
- c) *Foundation Degree, HND/HNC or an overseas qualification assessed by the RSES Academic Qualifications Group (AQG) to be of an equivalent standard – (indicative 10 years\*)*
- d) *Applicants who do not hold the required academic base for Principal Member grade will be required to demonstrate underpinning knowledge equivalent to a BEng degree (indicative 15 years)*

#### **For Member:**

- a) *HND/HNC (accredited with Further Learning for IEng) or equivalent or an overseas qualification assessed to be of an equivalent standard – (indicative 5 years\*); or*
- b) *ND/NC, approved NVQ or an overseas qualification assessed by the RSES AQG to be of an equivalent standard – (indicative 10 years\*)*
- c) *Applicants who do not hold the required academic base for Member grade will be required to demonstrate underpinning knowledge equivalent to a BEng degree (indicative 15 years)*

\* The years of experience set out above are for guidance only. What matters is that you must show that the experience gained within your career, is sufficient to compensate for the lack of formal academic qualifications. It is unlikely, however, that you will have obtained this in less than the indicative periods.

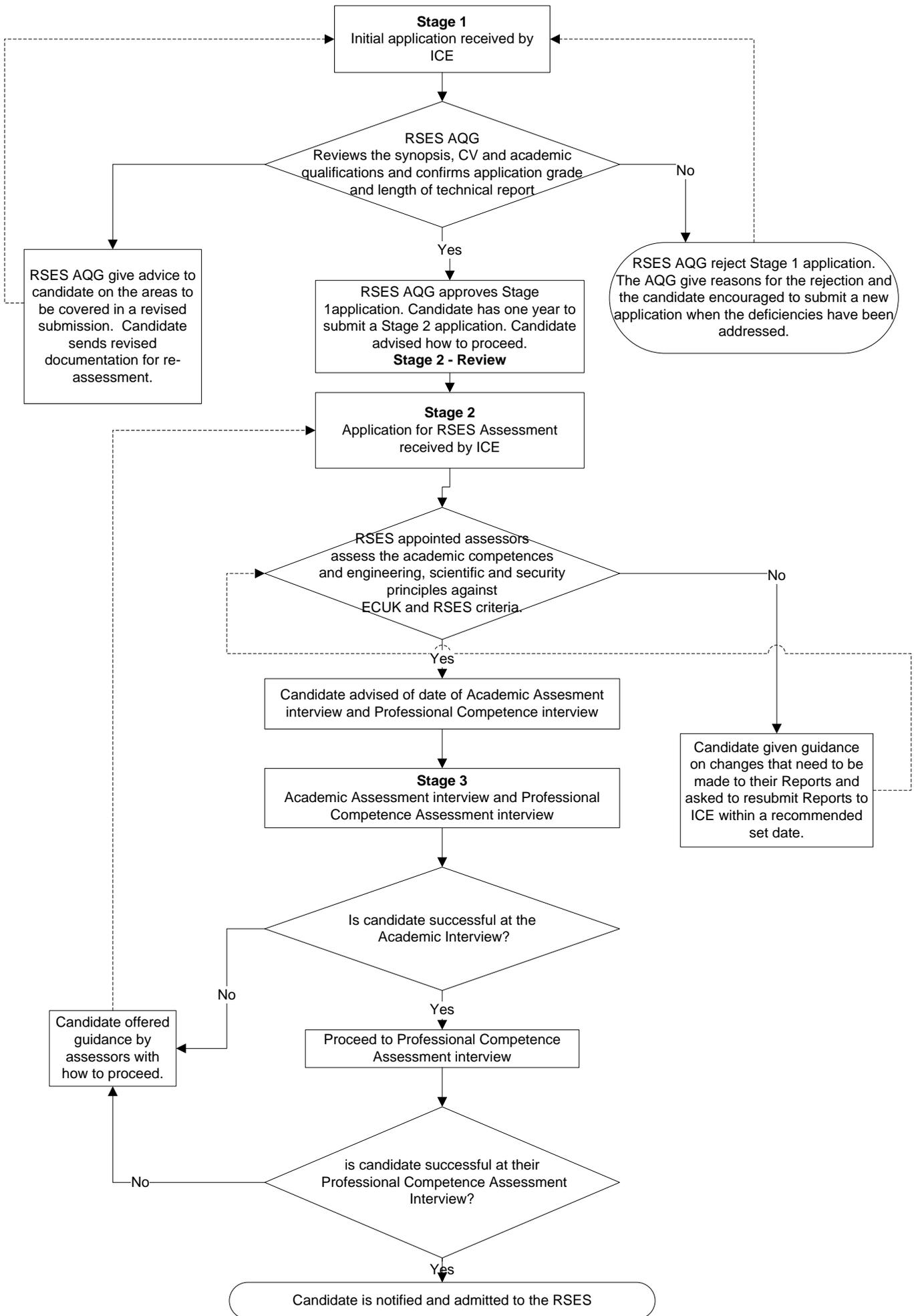
### **Expression of Interest**

All RSES applicants are required to submit an [ICE 3920 Expression of Interest](#) together with a brief CV and authenticated copies of any academic qualifications you have gained.

Your CV at this stage should be no more than 1000 words. It should provide a chronological review of your career and indicate your role and responsibilities held in various projects and/or activities with which you have been associated.

Certified English translations of academic qualifications should also be provided where applicable. Please note we may need to contact your university/college or professional body to verify the authenticity of your academic qualification(s). If any qualification is identified as fraudulent the application will be rejected

**Those applicants advised to apply via the TRR will be required to prepare and submit the Stage 1 TRR documentation. There are three stages to the application process which are outlined in the flowchart on page 2.**



# 1. Stage 1 – TRR initial assessment

You will need to submit in hard copy, and not electronically, the following documentation:

- i. [TRR Initial Assessment Application form ICE3930](#) that includes confirmation of Mentor support
- ii. a synopsis of your proposed Technical Report, endorsed by your Mentor
- iii. authenticated copies of transcripts of your academic qualifications indicating the full module breakdown\*
- iv. a detailed CV
- v. an application [fee](#)

## Academic Qualifications

The information you will need to provide about your qualification depends on the qualification itself. The ICE provides this information on the [academic section](#) of its website.

Copies of academic qualifications can be signed by the awarding college or by persons of responsibility, your manager or professionally qualified member of a professional body/organisation, etc. This information is also available on the academic section of the ICE website.

## Mentor/Sponsor support

Sponsors may also act as mentors to applicants. The role of the mentor is to identify which aspects of competence will form the basis for demonstrating the relevant attributes, to approve your submission and prepare you for interview. Your sponsor has a duty to act as a mentor during your submission process.

You must obtain the support of a sponsor to undertake the TRR. The mentor plays a vital role in assessing whether your Technical Report and the preceding synopsis clearly demonstrates your understanding and application of the generic engineering, scientific and security principles and how you have compensated for the shortfall in your academic achievement.

Your sponsor will be required to confirm, in some depth, your suitability for RSES Membership. The scope of your sponsor's involvement should extend to constructive criticism of reports as well as advice on presentation and practice in both the RSES Academic Assessment and RSES Competence Assessment interviews. They must read and sign both submitted reports and ensure that they and your CPD documents demonstrate your professional and specific competences and ensure that you are fully prepared for Stage 3.

Your sponsor should be consulted at all stages of your TRR application.

## Synopsis of Technical Report

**1.2** The synopsis of your Technical Report **must** set out clearly how you intend to demonstrate your knowledge and understanding of the engineering, technical and security principles. You must show how you have compensated for the shortfall in your academic achievement rather than just describing the project(s) on which you have been working. For further information on the structure of the Technical Report please see Appendix A.

In order to assist with the preparation of your synopsis and your Technical Report, Appendix B outlines the required academic competencies to be demonstrated at your Academic Assessment interview. Appendix C sets out examples of some of the generic engineering, technical and security principles that you might seek to identify and demonstrate.

You should ensure that your Stage 1 synopsis has been reviewed and signed by your Mentor before submitting your Stage 1 application.

## Curriculum Vitae

**1.3** This document should record your personal details and any academic achievements, and then set out brief details of the jobs you have worked on together with an indication of your security-related roles and responsibilities. Any challenges you encountered should be mentioned as should any periods where you gained unusual or extensive experience or learned valuable lessons. Of particular interest is work carried out during the last five years. You should also demonstrate in your CV how you have achieved the generic engineering competences and the RSES specialist criteria for GSA for the relevant grade. The length of a typical CV might be between two and four pages.

## Assessment process

**1.4** On receipt of your hard copy Stage 1 submission at ICE it will be forwarded to the RSES AQG for review.

The AQG will confirm your appropriateness for the TRR and you will be advised of the word count of your Technical Report. The AQG may also recommend modifications to your application. When a satisfactory conclusion has been reached you and your Mentor will be advised that you can proceed to Stage 2.

**1.5** Your Stage 1 result will be valid for a period of 12 months only and within this time you are expected to make a full submission for Stage 2.

## 2. Stage 2 - The Application

You will need to submit in hard copy, and not electronically, the following documentation:

**2.1** Stage 2 requires the submission of the following documentation:

- i. an RSES application form [ICE3922](#)
- ii. Sponsors' Statement ([ICE 3923](#))
- iii. a record of Continuing Professional Development (CPD)
- iv. Criminal Convictions Statement [ICE 3924](#)
- v. Two Character References ([ICE 3929](#))
- vi. a Technical Report, endorsed by your Mentor (see below for length limits)
- vii. a 2000 word Experience Report

With the exception of the Criminal Convictions Statement and the Character References you should send **three** hard copies of the above to the ICE Professionalism and Registers Executive.

An initial check of your documentation will be conducted by the ICE Professionalism and Registers Executive before forwarding to your assessors. Your assessors may request further technical and/or professional information; or they may report that your reports and records do not meet the RSES TRR standards and will require re-drafting. The purpose of this intervention is to ensure that you have complied with the process prior to presenting for the RSES Academic Assessment at Stage 3.

### 2.2 Record of Continuing Professional Development (CPD)

You must maintain a Personal Development Record (PDR), or similar, and prepare a Development Action Plan (DAP), for the forthcoming year (see [ICE's CPD Guidance](#)). An alternative system of recording CPD, providing it demonstrates the same basic information, can be submitted.

Your CPD must include security-related activities. Of particular interest are your records for the last three years.

### 2.3 Character References

Two character references must be submitted as part of the application, using the specified form, providing information on who you are, the referees connection with you and the specific skills you have that they are endorsing.

### 2.4 The Technical Report

Based on your approved synopsis you are required to prepare a Technical Report.

A minimum of 3,000 words to a maximum of 5000 words is normally sufficient for candidates whose academic qualifications have been assessed to be worth 300 credits or more. A minimum of 10,000 words to a maximum of 15,000 words is recommended for candidates whose academic qualifications have been assessed to be worth less than 300 credits.

The report should set out the key aspects of your technical competence and must offer an ordered and critical exposition of some technical aspect or aspects of security practice in which you have played a major part. You must define the technical problems involved and demonstrate how you resolved them by the application of generic engineering, scientific and security principles and knowledge to meet the academic competencies set out in Appendix B.

**The focus of the Technical Report *must* be on the demonstration of the engineering, technical and security principles which underpin attributes 1 and 2 in the generic competences. As indicated in the [RSES Guidance, Annex B](#).**

It is not expected that you will need to demonstrate an advanced mathematical or computing ability but your submission may include relevant calculations and drawings. It is important that in this document you do not set out to demonstrate your professional competence, e.g. management and leadership skills, interpersonal skills and communication, etc. These matters are to be covered in the Experience Report.

The structure of the Technical Report is not prescribed, and should be decided by you and your mentor to suit your individual circumstances.

The RSES considers plagiarism and collusion to be examples of behaviour that breach the RSES Code of Ethics (see RSES Guidance, Annex A). Accordingly, instances of plagiarism and collusion will be treated seriously.

Your mentor must have confidence that you can articulate the key aspects of your technical competence in the Technical Report, the presentation and at interview.

### 2.5 The Experience Report

The purpose of the Experience Report is to concentrate on the demonstration of the generic security engineering competences and the specific GSA criteria

The generic engineering, scientific and security competences, for the grade of registration for which you are applying, are set out in Appendix B below.

The specific GSA competences are set out in the RSES Guidance, Annex B.

When the assessors are satisfied with your submission the Registers Coordinator will arrange the time and date of your Stage 3 interviews.

## 3. Stage 3 - The RSES Academic Assessment and Professional Competence Assessment Interviews

3.1 The RSES Assessment is a two part interview process with both parts undertaken on the same day.

### Part 1

The RSES Academic Assessment, based on your Technical Report, is to ascertain how your experience has compensated for the shortfall in your educational base compared with someone of similar experience who does have the required educational base.

### Part 2

The RSES Professional Competence Assessment is to determine whether you possess the required generic engineering competences and the specific GSA criteria.

**You will have to be successful at the RSES Academic Assessment to be allowed to undertake the RSES Professional Competence Assessment.**

3.2 The RSES Academic Assessment interview is split into two parts. You will first be given up to 30 minutes in which to make a presentation based upon your Technical Report. In order to confirm the range and depth of your knowledge, you will then be invited to respond to questions based upon your Technical Report. The overall duration of the Academic Assessment interview, including your presentation, will be around 90 minutes.

3.3 The presentation is delivered sitting opposite the assessors at a table. You may use legible visual aids such as flip portfolios, not larger than A3, to illustrate the presentation. Whilst the use of laptop computers is permitted, experience has shown that people using these will need to plan the practicalities with very great care. *The presentation must expand on the Technical Report, rather than repeat the information already given to your Assessors.*

3.4 On completion of the RSES Academic Assessment interview, the assessors will adjourn to determine whether you have satisfied the educational base for admittance to the RSES.

- i. If you are successful you will be invited to undertake the subsequent RSES Professional Competence Assessment interview.
- ii. If you are unsuccessful you will not be invited to undertake the RSES Professional Competence Assessment interview. However, the Assessors will take time to explain to you the reasons for their decision and will give you advice on how to proceed. This will also be confirmed in writing.

3.5 The aim of the RSES Professional Competence Assessment interview is to allow you to demonstrate that you have satisfied the generic engineering competences, as set out at Appendix D of this note, and the specific GSA criteria, as set out in the [RSES Guidance, Annex B](#), for the grade of registration applied for.

3.6 Observers may be in attendance at the assessment interviews; they will take no part in the conduct of the assessments or be involved in any decisions taken.

## 4. RSES Assessment result

4.1 Time is required after the Stage 3 RSES Assessment interview for the quality control, audit and approval processes. The results will be then be posted to you.

4.2 If you are successful at the RSES Academic Assessment, but are unsuccessful at the RSES Professional Competence Assessment, this will be recorded and you may apply at a future date for a re-sit of the RSES Professional Competence Assessment interview only.

**4.3** There is no limit to the number of times you may apply for the RSES TRR.

**4.4** There is a right of Appeal in cases of perceived error in process or for unforeseen events. Appeals are only accepted if received within two months from the date of the deferral letter. For details contact the ICE Professionalism and Registers Executive.

## **5 Associated Documents**

The below documents are downloadable from the ICE website:

[ICE3920 RSES Expression of Interest](#)

[ICE3922 RSES Application form](#)

[ICE3923 RSES Sponsor's Statement](#)

[ICE3924 RSES Criminal Convictions Statement](#)

[ICE3929 Character Reference Form](#)

[ICE3930 RSES TRR Initial Assessment Application Form](#)

[ICE CPD Guidance](#)

## Appendix A: Guidance on the Structure of the RSES Synopsis and Technical Report

Submissions may take a variety of forms but they will generally fall into one of the following categories:

- Report on a security related project with a commentary and connecting dialogue indicating how the material meets the objectives for the Assessment; or
- A speciality paper based on a security related project(s); or a report on original work carried out by you.

The synopsis must not exceed 750 words and needs to indicate how your final Technical Report will demonstrate:

1. The academic competencies set out in Appendix B below to demonstrate your use of underpinning engineering, scientific and security principles to solve problems.
2. The knowledge criteria set out in Annex C of 3009(2) – Attributes of a Registrant – General Security Adviser

Subdivisions of the Technical Report typically might be:

- TITLE
- INTRODUCTION - What the Technical Report is about.
- AIM – How does the report meet the specific requirements
- BACKGROUND - Setting the scene. Where does the project lie in relation to the “total picture”?
- TECHNICAL CONTENT/DESCRIPTION – Draws out the fundamentals underlying the subject(s). The Technical Report must not merely demonstrate the application of codes and standards but must illustrate your understanding and application of engineering, scientific and security principles. It is not expected that you will need to demonstrate an advanced mathematical or computing ability but your submission may include relevant calculations and drawings. Diagrams or drawings should preferably be included with the relevant text.
- CONCLUSIONS - In relation to the application of engineering, scientific and security principles, what were the successes and failures?
- LESSONS LEARNT – What were they?
- APPENDICES - For supporting detail, if appropriate.
- BIBLIOGRAPHY - If appropriate.

**All content must be either the product of your original thoughts and work or referenced to the original author.**

**All documentation is to be reviewed by your Mentor/sponsor before submission.**

## Appendix B: Required Academic Competencies to be demonstrated at Assessment

The following knowledge criteria for GSA Grades B and C are to be demonstrated at the RSES Academic Assessment (Attribute Groups 1 to 3 of the generic competencies, Annex B, 3009(2)).

### Academic competencies required for RSES Member grade (equivalent to Incorporated Engineer)

- 1. Science and mathematics:** Have knowledge and understanding of the mathematical, scientific and engineering principles that underpin security engineering. Be able to undertake and properly apply engineering analysis to problems using relevant information technology, as well as being able to implement engineering processes and technologies.
- 2. Design:** Possess the knowledge, understanding and skills to define problems, identify constraints and contribute to the design and development of engineering solutions in a practical context. Ensure that designs are appropriate to meet their purposes or applications.
- 3. Engineering practice:** Demonstrate a knowledge and understanding of relevant materials, processes and products as applied to the solution of security engineering problems. Be able to use and apply information from technical literature, appropriate international and national technical standards, codes of practice and industry generated standards.

### Academic competencies required for RSES Member grade (equivalent to Chartered Engineer)

- 1. Science and mathematics:** Have a deeper understanding of the mathematical principles supporting your engineering activity together with knowledge of developing techniques and technologies. Understand the applications and limits of information technology. Demonstrate an ability to develop analysis and solutions to problems faced.
- 2. Design:** Possess a wide knowledge and a comprehensive understanding of the design process. Show an ability to adapt solutions and be able to generate innovative design/engineering solutions for/to problems encountered.
- 3. Engineering practice:** Have a thorough understanding of current practice and limitations as well as an appreciation of new developments and areas of innovation. Show extensive knowledge and understanding of engineering materials and be able to apply these in the solution of both routine and non-routine problems.

## Appendix C: Examples of Engineering, Scientific and Security Principles

When producing the Technical Report and its synopsis, candidates are required to identify underpinning security principles and demonstrate how they were used to solve problems. Some examples of applying security principles are shown below:

- The process and methodology of conducting Threat and Risk Assessments, interpreting how risk is considered from the outset in determining a security policy or strategy for an organisation / project.
- The process and methodology of conducting Security Surveys and Audits and the use of risk modelling to establish a palette of preferred security options to be considered.
- Developing a basis of design (Concept Design) i.e. design based solutions (DBSs) to underpin the security strategy for a project or organisation.
- Ensuring that identified threats and Risks are properly addressed, within the given design and financial constraints, when liaising with engineers in the production of Outline Design solutions.
- Developing user security requirements i.e. Operational Requirements and how these interface with an ongoing design.
- Use of the 'Onion' model of layering to develop a security strategy.
- Consideration of security requirements at concept design stage so that an intrinsically secure design can be developed, reducing the need for operational security measures
- Demonstration of reduction in vulnerability utilising at a strategic level the use of a palette of passive, active, operational and procedural security measures i.e. H.V.M, CCTV and guarding, etc

## Appendix D: Required Generic Engineering, Scientific and Security Competences to be demonstrated at the Professional Competence Assessment

The following Generic Engineering, Scientific and Security Competences for GSA Grades B and C are to be demonstrated at the Professional Competence Assessment (Attribute Groups 4 to 9 of the generic competencies, Annex B, 3009(2)).

### Professional requirements for Grade B (equivalent to Incorporated Engineer)

- 1. Management and leadership:** Ability to **plan** for effective project implementation, to **manage** the planning and organization of tasks, people and resources. Ability to **manage** teams and develop staff to meet changing technical and managerial needs and to **manage** quality **processes**.
- 2. Independent judgement and responsibility:** Ability to identify the limits of **personal** knowledge and skills and to exercise sound **independent engineering judgement** and take responsibility.
- 3. Commercial ability:** Ability to **prepare** and control budgets and have a **sound knowledge** of statutory and commercial frameworks within own area of responsibility.
- 4. Health, safety and welfare:** A **sound knowledge** of legislation, hazards and safe systems of work and an ability to **manage** risks. Ability to **manage** health, safety and welfare within own area of responsibility.
- 5. Sustainable development:** A sound knowledge of sustainable development best practice and have an ability to **manage** engineering activities that contribute to sustainable development.
- 6. Interpersonal skills and communication:** Ability to **communicate** well with others at all levels and be able to **discuss** ideas and plans competently and with confidence. Have personal and social skills.
- 7. Professional commitment:** Understanding and compliance with the RSES Code of Ethics, the commitment to current and future CPD of self and others, the support of RSES activities and a personal commitment to professional standards, recognising obligations to society, the profession and the environment.

### Additional professional attributes required over Grade B for Grade C (equivalent to Chartered Engineer)

- 1. Management and leadership:** Ability to plan, **direct and control** tasks, people and resources. The ability to **lead** teams and develop staff to meet changing, technical and managerial needs. Demonstration of commitment to **continual /continuous improvement** through quality management.
- 2. Independent judgement and responsibility:** Ability to identify the limits of a **team's** skill and knowledge and the ability to exercise sound **holistic independent judgement** and take responsibility.
- 3. Commercial ability:** Demonstrate a high level of commercial and contractual **understanding and an ability to use it** within own area of responsibility.
- 4. Health, safety and welfare:** Have a commitment to **leading** continual /continuous improvement in health, safety & welfare.
- 5. Sustainable development:** Demonstrate a commitment to **leading** continual/ continuous improvement in sustainable development.
- 6. Interpersonal skills and communication:** Have an ability to communicate new concepts and ideas to technical and non-technical colleagues

## Appendix E – Individual requirements

We're committed to making reasonable adjustments to our assessment process to accommodate specific individual requirements. Individual requirements may include disabilities and security clearance. You need to tell us about these requirements in the space provided in your Technical Report Route application form. We'll also need to see any evidence, such as certified documents or statements.

### Disability or sensory impairment

In line with the Equality Act 2010, we'll make whatever 'reasonable adjustments' are required for candidates with a disability, such as dyslexia, speech impairment or sensory loss, for example. Our Equality and Diversity Policy ensures everyone receives the same opportunities during the review process.

### Security clearance

You might be restricted in the information you can include in your review submission, for security reasons. However, there's no reason why this should detract from the quality of your report.

If your submission is affected by security issues, you should consider the following suggestions:

- Make your report non-site specific - don't state that the facility was on the Sellafield site or on the Hinkley site, for example
- Don't state building numbers or names – it's sufficient to say 'nuclear facility' or 'nuclear store'
- Remove site and building names from drawings
- Don't include photographs which reveal the location of buildings and facilities
- Avoid stating technical details (such as wall thickness) which may reveal security-sensitive information

If you work on a security-sensitive project, we recommend that your in-house information security manager reads your review submission.