ONR GUIDE			
ANALYSIS OF SECURITY ROLES & ASSOCIATED COMPETENCIES			
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1. INTRODUCTION

1.1 The Office for Nuclear Regulation (ONR) has established a set of Security Assessment Principles (SyAPs) (Reference 7). This document contains Fundamental Security Principles (FSyPs) that dutyholders must demonstrate have been fully taken into account in developing their security arrangements to meet relevant legal obligations. The security regime for meeting these principles is described in security plans prepared by the dutyholders, which are approved by ONR under the Nuclear Industries Security Regulations (NISR) 2003 (Reference 1).

1.2 The term 'security plan' is used to cover all dutyholder submissions such as nuclear site security plans, temporary security plans and transport security statements. NISR Regulation 22 dutyholders may also use the SyAPs as the basis for Cyber Security and Information Assurance (CS&IA) documentation that helps them demonstrate ongoing legal compliance for the protection of Sensitive Nuclear Information (SNI). The SyAPs are supported by a suite of guides to assist ONR inspectors in their assessment and inspection work, and in making regulatory judgements and decisions. This Technical Assessment Guidance (TAG) is such a guide.

2. PURPOSE AND SCOPE

2.1 This TAG contains guidance to advise and inform ONR inspectors in exercising their regulatory judgment during assessment activities relating to a dutyholder's analysis of security roles and associated competencies. It aims to provide general advice and guidance to ONR inspectors on how this aspect of security should be assessed. It does not set out how ONR regulates the dutyholder's arrangements. It does not prescribe the detail, targets or methodologies for dutyholders to follow in demonstrating they have addressed the SyAPs. It is the dutyholder's responsibility to determine and describe this detail and for ONR to assess whether the arrangements are adequate.

3. RELATIONSHIP TO RELEVANT LEGISLATION

3.1 The term 'dutyholder' mentioned throughout this guide is used to define 'responsible persons' on civil nuclear licensed sites and other nuclear premises subject to security regulation, a 'developer' carrying out work on a nuclear construction site and approved carriers, as defined in NISR. It is also used to refer to those holding SNI.

3.2 NISR defines a 'nuclear premises' and requires 'the responsible person' as defined to have an approved security plan in accordance with Regulation 4. It further defines approved carriers and requires them to have an approved Transport Security Statement in accordance with Regulation 16. Persons to whom Regulation 22 applies are required to protect SNI. ONR considers competence management to be an important component of a dutyholder's arrangements in demonstrating compliance with relevant legislation.

4. RELATIONSHIP TO IAEA DOCUMENTATION AND GUIDANCE

4.1 The essential elements of a national nuclear security regime are set out in the Convention on the Physical Protection of Nuclear Material (CPPNM) (Reference 4) and the IAEA Nuclear Security Fundamentals (Reference 3). Further guidance is available within IAEA Technical Guidance and Implementing Guides.

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4.2   The importance of issues relating to workforce competence are also recognised in the Nuclear Security Fundamentals, specifically:

- Essential Element 12: Sustaining a Nuclear Security Regime – 3.12:

    d)   Allocating sufficient human, financial and technical resources to carry out the organisation's nuclear security responsibilities on a continuing basis using a risk informed approach; and

    e)   Routinely conducting maintenance, training, and evaluation to ensure the effectiveness of the nuclear security systems.

4.3   A more detailed description of the elements is provided in Recommendations level guidance, specifically Nuclear Security Series (NSS) 13, Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5) (Reference 2). This publication highlights the importance of sustainability programmes to ensure that physical protection regimes are resilient and effective in the long term through adequate resourcing. With respect to competence management it advises that operators, shippers and carriers should establish sustainability programmes for their physical protection system, which should encompass human resource management and training.

4.4   The IAEA also publishes NSS 12 "Educational Programme in Nuclear Security" (Reference 11). It is intended for a range of people with responsibility for nuclear security including university curriculum developers, nuclear security instructors and human resource development managers. The scope of this publication is broad and covers education in all areas of nuclear security, ranging from MSc programmes for developing highly educated staff with in-depth knowledge to a programme for the development of certified nuclear security specialists.

4.5   This TAG is also consistent with the Systematic Approach to Training, advocated by the IAEA in Technical Document 1254 (Reference 11) and implicit in other publications (References 8 and 9).

5.   RELATIONSHIP TO NATIONAL POLICY DOCUMENTS

5.1   The SyAPs provide ONR inspectors with a framework for making consistent regulatory judgements on the effectiveness of a dutyholder's security arrangements. This TAG provides guidance to ONR inspectors when assessing a dutyholder's submission demonstrating they have effective processes in place to achieve SyDP 3.1 – Analysis of Security Roles and Associated Competencies, in support of FSyP 3 – Competence Management. The TAG is consistent with other TAGs and associated guidance and policy documentation.

5.2   The HMG Security Policy Framework (SPF) (Reference 5) describes the Cabinet Secretary's expectations of how HMG organisations and third parties handling HMG information and other assets will apply protective security to ensure HMG can function effectively, efficiently and securely. The security outcomes and requirements detailed in the SPF have been incorporated within the SyAPs. This ensures that dutyholders are presented with a coherent set of expectations for the protection of nuclear premises, SNI and the employment of appropriate personnel security controls both on and off nuclear premises.

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5.3 The Classification Policy (Reference 6) indicates those categories of SNI, which require protection and the level of security classification to be applied.

6. ADVICE TO INSPECTORS

6.1 It is essential that personnel whose activities have the potential to impact on nuclear security are Suitably Qualified and Experienced (SQEP) to carry out their jobs. This includes those who directly carry out security operations and others such as directors, managers, designers, security plan authors (etc) whose roles, if inadequately conceived or executed, may affect security in less visible ways. For example, through introducing latent technical or organisational vulnerabilities. Dutyholders should, therefore, put in place robust arrangements for identifying its competence needs and assuring these are met and maintained. The arrangements should clearly define the dutyholder's interpretation of SQEP, and should identify those who need to be SQEP. Staff who discharge nuclear security roles should be included within the dutyholder's organisational baseline - see NS-TAST-GD-065 (Reference 12) and TAG 1.2.

6.2 Training is a fundamental mechanism through which personnel acquire, and maintain, the skills and knowledge needed to perform a job to defined standards. Training should be instrumental in developing and sustaining competence. IAEA has defined competence as "the ability to put skills and knowledge into practice in order to perform a job in an effective and efficient manner to an established standard" (Reference 9). ONR concurs with this definition, which is widely accepted within the international nuclear community. Other factors contributing to a person's competence include their prior experience, aptitude, attitude, behaviours, skills and qualifications. Competence can therefore broadly be equated to SQEP. Dutyholders should have arrangements in place to define and deliver the training needed to sustain competence, and these arrangements should be clearly detailed in their security plan.

6.3 Security Delivery Principle 3.1 in SyAPs confirms there may be a need for the appointment of Duly Authorised Persons for Security Purposes (DAPSyPs). DAPSyPs are usually identified as individuals who are in direct control or supervision of operations or activities that impact on the security regime of a site or facility notwithstanding the role may not necessarily be their primary function. Their appointments are therefore subject to additional management controls covering areas such as appointment and assessment. Roles for which DAPSyPs need to be appointed should be specified in the dutyholder's security plan, and a register kept of such persons. However, the general principle that persons whose activities may impact upon nuclear security should be appropriately trained, and their competence adequately assured, is similar for SQEP personnel and those designated as DAPSyPs.

6.4 ONR does not assess the competence of dutyholder staff (e.g. security guards or control room operators) directly, or authorise them. Rather ONR seeks confidence that dutyholders have put in place, and are implementing, effective and proportionate arrangements for training and competence assurance for all personnel whose activities may impact upon security. This should cover both dutyholder employees and contracted elements of the workforce, whose actions could impact upon nuclear security A well-designed training and competence management system should adequately address the following elements:

- Analysis of roles and associated competencies

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- Identification of learning objectives and training needs

- Assessment of competence (gap analysis)

- Training programme design

- Selection of appropriate training staff, methods and media

- Evaluation of training effectiveness

- Organisation and support of the training function

- Knowledge management and capture

- A process to measure, assess and improve the competence management arrangements

6.5   This guidance should be applied in a proportionate and targeted manner at each stage. This assessment guide focuses on the analysis of roles and associated competencies, presenting a summary of the reasons why it is an important component of a dutyholder's training arrangements, and sets out the principal factors which should be considered by the ONR inspector.

6.6   The emphasis that the inspector gives to assessing different elements of a dutyholder's training and competence arrangements will depend upon the plan being assessed. For example, where the tasks involved in carrying out a role are already well-defined, it may not be necessary to closely scrutinise the processes used to analyse the role and define its competence and training needs. Conversely, where new activities are being developed, closer examination of the approach which the dutyholder takes to analysing these factors may be appropriate. As an overriding principle, the inspector should consider the security significance (as effected by aspects including security function category or the categorisation for theft or sabotage) of the activities concerned and adopt a proportionate and targeted approach to applying the guidance in this document.

Regulatory Expectation

6.7   The regulatory expectation placed upon the dutyholder is that they will ensure that the security plan identifies how they adopt a systematic approach to training that incorporates analysis of security roles and associated competencies as part of an ongoing commitment that all personnel whose activities have the potential to impact on nuclear security are SQEP to carry out their jobs.

FSyP 3 - Competence Management	Analysis of Security Roles and Associated Competencies	SyDP 3.1
Analysis should be carried out of all tasks important to security and used to justify the effective delivery of the security functions to which they contribute.		

7.   ANALYSIS OF SECURITY ROLES AND ASSOCIATED COMPETENCIES

7.1   To develop a suitable and effective training programme it is necessary to identify the roles that should be performed. ONR expects the dutyholder to show how it has identified all roles that have the potential to impact on nuclear security. This includes

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roles discharged by staff who may not necessarily have immediate hands-on contact with the security structure, system or components within it, such as those who work in design and analysis roles, and should also cover those working in corporate offices as well as on-site. It should include managerial roles and extend up to and including the Board. The dutyholder should have a process in place to ensure that security roles performed by staff whom it does not employ directly (e.g. contractors and agency staff) have been suitably identified and are subject to the dutyholder's arrangements.   The tasks associated with each role then need to be determined so that competence and training needs can be assessed and established.

7.2   Identifying the components of a role, and the competencies needed to carry them out, may involve the use of job or task analysis. Where it exists, this should build on and extend any existing task analysis that has been developed in support of human factors integration (see NS-TAST-GD-058 (Reference 13). A range of task analysis techniques is available to dutyholders, and the choice of technique should depend on the nature of the activity and the information being sought. For example, some techniques are oriented towards describing the cognitive demands made by the task, whereas others are better at describing procedural steps or interactions between people. Useful guidance on the selection and use of task analysis techniques is provided in the ONR TAG on Human Machine interface (Reference 14).

7.3   The analysis should draw upon sources such as the security plan and facility-level security operating procedures, staffing levels, statements of personnel responsibilities, the dutyholder's overriding nuclear security policy, regulatory requirements and operational experience feedback. For new facilities, where operational experience may not be available, the analysis may place more emphasis on expert judgement, simulation and desk-top exercises. Job and task analysis can be a resource-intensive activity, and it may not be necessary for a detailed analysis to be performed for every role. It may also be possible to define 'families' in which several related roles are grouped together so that generic competence needs are identified.

7.4   For each role and associated task(s), both the competencies needed to carry out the work, and the level or standard which those competencies must meet, should be determined. The set of competencies should include both technical elements and others which may be less tangible, but which are no less important, such as decision making, challenge, management and leadership, communication and behavioural skills, etc. The competence requirements for all nuclear security roles are expected to include an awareness of the importance of sustaining and contributing to a strong security culture and the importance of attitudes and behaviours in relation to this.   All staff should understand why nuclear security is important and that their roles and responsibilities require working in a way that promotes safety and security. They should ensure that any conflicts between these disciplines are quickly identified and resolved after due consideration and balancing of the relative risks. Some dutyholders may define 'families' in which roles with similar competence needs are grouped together. The stated levels of competence needed to discharge each of these related roles may then vary according to the nature of the work. For example, more qualifications and experience may be required for roles which include the authority to make significant nuclear security decisions. This approach can help the dutyholder manage staff competence, personal development needs and support succession planning.

7.5 The ONR inspector should confirm the dutyholder has a structured process in place to identify the tasks which are to be performed for each role, and the competencies needed to perform these tasks. The output of this process should contribute towards the specification of a role profile. An individual post may include a number of roles, and these should be set out in the job description. Where this is the case, consideration should also be given to the integration of these roles within a 'post' to ensure they are compatible and do not either overload individuals or create conflicts in terms of responsibility or delivery. The job description and role profile should explicitly include, or reference, the competencies needed to carry out the associated activities.

7.6 Benchmarking serves a useful purpose in enabling dutyholder's to compare their approaches to staffing and task organisation to those of other organisations. This is particularly relevant for new nuclear facilities or those changing status, such as during commissioning. Therefore, the ONR inspector should review whether the dutyholder has compared their arrangements for staffing and task organisation against those of comparable facilities, and, where they have, any resultant changes have been included in the nuclear security baseline and any impact of staff morale is understood.

7.7 In addition to consideration of individual roles and tasks, analysis should include consideration of the way in which these come together and how team and organisational performance can impact upon security. This should input to and be reflected in the process for identifying the required competencies.

7.8 When considering the range of competencies that are needed to fulfil a designated role, the dutyholder should consider circumstances where an individual may be called upon to deputise for another person (e.g. sickness or holidays). Although the deputy may not possess the full range of competencies required to carry out the work on a long-term basis, the dutyholder should identify the principal security-related activities and ensure that the Deputy is, and remains, competent to carry out them out for the necessary periods of time.

Inspectors should consider:

- Has a suitable analysis been carried out to identify those roles that may impact on security, including corporate as well as security operations staff?

- Is the analysis sufficiently detailed to provide confidence that all security-related roles and responsibilities have been identified?

- Does the analysis include consideration of the full range of operating states, including during periods on increased alert or response level and when security events identified in the security plan occur?

- Is the analysis current (i.e., has it been maintained to take account of plant, equipment, procedural or organisational changes)?

- Do qualitative and quantitative indicators support claims regarding the adequacy of staffing levels and task organisation? Indicators of potential problems include:
  - High levels of security equipment maintenance failings
  - Events relating to staff shortages, work patterns, communication or coordination issues within or between teams, or inadequate supervision
  - High levels of overtime

- o Deferrals or significant delays to nuclear security related work programmes
- o Large numbers of outstanding actions or issues
- o Symptoms of personnel stress due to under or overload (e.g. high levels of sick leave, union grievances).
- o High levels of temporary promotion

- Have the competencies required to carry out the tasks or activities associated with each role in an efficient and effective manner to the designated standards been formally identified?

- Has the identified set of skills, knowledge and competencies been used to inform the selection criteria for specific roles and posts?

- Do the identified competencies include managerial, leadership and behavioural factors?

- Has consideration been given to the competencies required to support team and organisational performance as well as for individual roles?

- Have any DAPSyP roles been identified and are their associated competencies clearly defined?

8. REFERENCES

1. **Nuclear Industries Security Regulations 2003**. Statutory Instrument 2003 No. 403

2. **IAEA Nuclear Security Series No. 13.** Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (**INFCIRC/225/Revision 5**). January 2011. www-pub.iaea.org/MTCD/Publications/PDF/Pub1481_web.pdf.

3. **IAEA Nuclear Security Series No. 20**. Objective and Essential Elements of a State's Nuclear Security Regime. http://www-pub.iaea.org/MTCD/Publications/PDF/Pub1590_web.pdf

4. **Convention on the Physical Protection of Nuclear Material (CPPNM)** https://ola.iaea.org/ola/treaties/documents/FullText.pdf

5. **HMG Security Policy Framework**. Cabinet Office. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/316182/Security_Policy_Framework_-_web_-_April_2014.pdf

6. **NISR 2003 Classification Policy** – Trim Ref. 2012/243357.

7. **Security Assessment Principles** – Trim Ref. 2017/121036

8. **IAEA Safety Report No.79.** Managing the Regulatory Bodies Competence. December 2013.

9. **IAEA Safety Standard Series NS-G-2.8.** Recruitment, Qualification and Training or Personnel for Nuclear Power Plants. November 2002.

10. **IAEA –TECDOC-1254.** Training the Staff of the Regulatory body for Nuclear Facilities. November 2001.

11. **IAEA Nuclear Security Series No. 12.** Educational Programme in Nuclear Security. March 2010.

12. **ONR Document NS-TAST-GD-065.** Function and Content of a Nuclear Baseline

13. **ONR Document NS-TAST-GD-058.** Human Factors Integration.

14. **ONR Document NS-TAST-GD-059.** Human Machine Interface

Note: ONR staff should access the above internal ONR references via the How2 Business Management System.

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9. GLOSSARY AND ABBREVIATIONS

CPPNM	Convention on the Physical Protection of Nuclear Material
CS&IA	Cyber Security and Information Assurance
DAPSyP	Duly Authorised Person for Security Purposes
FSyP	Fundamental Security Principle
IAEA	International Atomic Energy Agency
NISR	Nuclear Industries Security Regulations
NSS	Nuclear Security Series
ONR	Office for Nuclear Regulation
SNI	Sensitive Nuclear Information
SPF	Security Policy Framework
SQEP	Suitably Qualified and Experienced
SyAP	Security Assessment Principle
SyDP	Security Delivery Principle
TAG	Technical Assessment Guide

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