



ONR GUIDE			
NUCLEAR SUPPLY CHAIN MANAGEMENT			
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1 INTRODUCTION

- 1.1 The Nuclear Industries Security Regulations (NISR) 2003 contains requirements for responsible persons to make certain arrangements including standards and procedures to ensure the security of the nuclear premises, Nuclear Material (NM) or Other Radioactive Material (ORM) stored on the premises, Sensitive Nuclear Information (SNI) and standards and procedures for the transportation of Category I - III NM.
- 1.2 Regulation 4 of NISR requires there to be an approved security plan for each nuclear premises which details those arrangements for the protection of NM/ORM and SNI, including contingency plans. Regulation 7 places the requirement for the dutyholder to maintain arrangements in accordance with the approved plan. Similarly, transporters of Category I-III quantities of NM are required to detail their security arrangements in an approved Transport Security Statement in accordance with Regulation 16 and Regulation 17 requires them to maintain those arrangements. For the purposes of this guide, the term security plan will be used to refer to both approved documents.
- 1.3 The Office for Nuclear Regulation (ONR) has established a set of outcome focused Security Assessment Principles (SyAPs) (Reference 5.1) which provide a framework for it to assess security arrangements defined in security plans and make consistent regulatory judgements on the adequacy of those arrangements. The Fundamental Security Principles (FSyPs) and their underpinning Security Delivery Principles (SyDPs) are goal-setting and do not describe what the dutyholder's arrangements should contain; this is the responsibility of the dutyholders who remain responsible for security.
- 1.4 To assist inspectors, ONR produces a suite of guides to assist them in making regulatory judgements and decisions in relation to the adequacy of compliance. This inspection guide is one of the suites of documents provided by ONR for this purpose.

2 PURPOSE AND SCOPE

- 2.1 Security plans are structured in a format consisting of high-level claims, supported by arguments substantiated by evidence. Where the dutyholder is required to have an approved security plan, the purpose of this guide is to facilitate a consistent and effective approach to inspecting compliance with the arrangements detailed in the plan concerning FSyP 4 - Nuclear Supply Chain Management. This fundamental principle is supported by four Technical Assessment Guides (TAGs): Procurement and Intelligent Customer Capability (Reference 5.2); Supplier Capability (Reference 5.3); Oversight of Suppliers of Items or Services that may Impact on Nuclear Security (Reference 5.4); and Commissioning (Reference 5.5).
- 2.2 The judgements made by the inspector will primarily relate to the efficacy of the implementation of arrangements described in evidence that supports the security plan to ensure that associated arguments are fully substantiated. However, ONR takes a sampling approach to regulation and it is possible that elements of evidence within the plan were not subject to assessment as part of the approval process. Therefore, when reviewing or inspecting evidence as part of the intervention, the judgement may relate to the efficacy of the evidence itself in relation to supporting any associated arguments. The inspector may also provide advice and guidance in the interests of encouraging dutyholders to seek continuous improvement.
- 2.3 This guidance is not intended to be mandatory, but provides a framework for inspectors on which to base their judgement and discretion during such inspections.

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- 2.4 This guidance does not indicate when or to what extent these compliance inspections should be made. These matters are covered in the integrated intervention strategy and individual inspectors' inspection plans.
- 2.5 This guide lays the foundation for all inspection activities carried out by Civil Nuclear Security (CNS) inspectors. The same basic phases should be applicable to an inspector in any of the ONR Divisions. The phases which will help inspectors plan their inspection programmes and compliance inspections are: planning, preparation, delivery, write up, and follow up. For more detailed information on these phases see ONR Guide GD-064 (Reference 5.6).
- 2.6 The guidance contained in this document is consistent with International Atomic Energy Agency (IAEA) Safety Standard No GS-R-3 (The Management System for Facilities and Activities) which equally applies to safety and security and is applicable to the activities of all dutyholders (Reference 5.7).
- 2.7 The IAEA Nuclear Security Fundamentals NSS 20 of February 2013 (Reference 5.8), Article 3.12 requires Member States to ensure that dutyholders establish and implement an effective integrated management system and demonstrate leadership in nuclear security matters. SyAPs transposes this requirement in the UK and this guidance considers the relevant aspects of Supply Chain Management.

3 OVERVIEW OF FUNDAMENTAL SECURITY PRINCIPLE 4: SUPPLY CHAIN MANAGEMENT

- 3.1 FSyP 4 details that dutyholders must implement and maintain effective supply chain management arrangements for the procurement of products or services related to nuclear security.
- 3.2 SyDP 4.1 describes how dutyholders should maintain an 'Intelligent Customer' capability for all work carried out on their behalf by suppliers that may impact upon nuclear security.
- 3.3 SyDP 4.2 outlines that for work that may impact on nuclear security; dutyholders should evaluate and confirm that suppliers have the organisational and technical capability, capacity and culture to deliver items or services to the specification prior to placing any contract.
- 3.4 SyDP 4.3 details that dutyholders should conduct effective oversight and assurance of their supply chain.
- 3.5 SyDP 4.4 describes how before bringing into operation or returning to service any facility, system or process that may affect security, it should be subject to testing and a commissioning plan.

4 GUIDANCE ON THE EXPECTATIONS FOR THE INSPECTION OF FSYP 4

General

- 4.1 ONR has developed regulatory strategies for dutyholders. This includes conducting a programme of Supply Chain Management interventions to influence behavioural changes across the industry. For all of the major sites and facilities, an annual Integrated Intervention Strategy (IIS) plan exists which describes how the strategy is realised through a series of planned inspections. For more detail on IIS plans, see ONR Guide GD-059 (Reference 5.9).

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Taking into Account Other FSyPs

4.2 Inspectors should take into account other FSyPs when carrying out Supply Chain Management inspections, in particular: FSyP 3 (Competence Management); FSyP 5 (Reliability, Resilience and Sustainability). For example:

- Are dutyholders staff suitably qualified and experienced to carry out their assigned security roles and responsibilities?
- Have dutyholders designed and supported their Supply Chain Management regime to ensure it is reliable, resilient and sustained throughout the entire lifecycle?

4.3 FSyP 4 is not about Cyber Security and Information Assurance in the supply chain, which is covered in FSyP 7

Implementation

4.4 Information on implementing the planning, preparation, delivery, write-up and follow up phases is contained in ONR Guide GD-064 (Reference 5.6).

Specific Advice for Supply Chain Management Inspections

4.5 Specific considerations related to the arrangements for each of the FSyP elements are covered in the Annexes as follows:

- Annex A - SyDP 4.1 (Procurement and Intelligent Customer Capability).
- Annex B – SyDP 4.2 (Supplier Capability).
- Annex C – SyDP 4.3 (Oversight of Suppliers of Items or Services that may Impact on Nuclear Security).
- Annex D – SyDP 4.4 (Commissioning).

5 FURTHER READING

5.1 Security Assessment Principles for the Civil Nuclear Industry.

5.2 CNS-TAST-GD-4.1 - Procurement and Intelligent Customer Capability.

5.3 CNS-TAST-GD-4.2 - Supplier Capability.

5.4 CNS-TAST-GD-4.3 - Oversight of Suppliers of Items or Services that may Impact on Nuclear Security.

5.5 CNS-TAST-GD-4.4 - Commissioning.

5.6 ONR GUIDE GD-064 – General Inspection Guide.

5.7 IAEA SAFETY STANDARD NO GS-R-3 (The Management System for Facilities and Activities).

5.8 IAEA Nuclear Security Fundamentals NSS 20 - Objective And Essential Elements of a State's Nuclear Security Regime.

5.9 ONR Guide GD-059 - Guidance for Intervention Planning and Reporting.

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6 ANNEX A - PROCUREMENT AND INTELLIGENT CUSTOMER CAPABILITY

Regulatory Expectation

The regulatory expectation is that dutyholders will describe in the security plan how they achieve effective procurement for items or services for nuclear security and maintain an intelligent customer capability to support nuclear supply chain management arrangements.

Inspectors should consider the dutyholder's ability to demonstrate compliance with arrangements made in their security plans through the exhibition of behaviours and knowledge, and the provision of evidence, which may consider:

Effective Commercial and Supply Chain Strategy

- Have they developed a commercial and/or Supply Chain strategy to address current and future security plan requirements?
- Do they have effective arrangements to manage their Supply Chain including a clear strategy and/or policy, and is it organised to deliver clearly defined roles and responsibilities?
- Do they have the organisational capability to manage supply chain delivery?
- Checking by sampling, if the supply chain management arrangements are subject to routine review to determine if they remain effective in addressing security plan requirements?
- Has their Supply Chain strategy been developed cognisant of the learning available from within the organisation, Supply Chain, nuclear and wider industry?
- Does their strategy encourage collaborative working with the Supply Chain, and the sharing of common security aims, objectives and success criteria?
- Do their make/buy (i.e. outsourcing and in-house provision) arrangements effectively consider current and future security plan requirements as part of the decision making criteria?

Effective Procurement Cycle – Security Specification

- Do their specifications reflect the design intent, design codes and standards, and meet security plan requirements?
- Are appropriate levels of quality assurance applied to the procurement of items or services significant to nuclear security?
- Does their purchaser's specification ensure that their assurance arrangements address any specific regulatory requirements?
- By sampling, do suppliers understand that the items or services being procured are security systems, structures or components?
- Are variations to specification, design or contract properly conceived, communicated, implemented and assessed for nuclear security implications and also authorised by SQEP staff?
- Do suppliers notify the purchaser of any proposed changes and are they properly assessed and authorised by the purchaser?
- Are supplier documents (e.g. quality plans and manufacturing instructions) re-approved before a change is implemented?

Effective Procurement Cycle – Deviations from Specified Requirements

- Are deviations from specifications identified, characterised and formally sanctioned by competent persons with the appropriate delegated authority?

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- Do suppliers bring all deviations of nuclear security significance to the attention of the purchaser, dutyholder's design authority (or equivalent) and ONR if appropriate? Is there a demonstrable audit trail for all approved deviations from the work control document to logs showing the status of each deviation raised, approved, rejected or reworked with links to required document changes?

Effective Procurement Cycle – Counterfeit Fraudulent and Suspect Items (CFSI)

- Are there effective processes in place to prevent against CFSI entering their Supply Chain at any level?
- Do they employ positive material identification and effective testing methods as part of their assurance arrangements, including sample testing of proprietary high risk items?
- Are staff:
 - Competent to perform their role?
 - Aware of the risks of CFSI?
 - Cognisant of and compliant with the organisation's mitigation methods?
- Are there appropriate arrangements in place to quarantine, investigate and dispose of suspect items dependent on them being as conforming, non-conforming, counterfeit or fraudulent?
- Have they established arrangements to raise awareness of CFSI within their Supply Chain and are they encouraging the open reporting of CFSI examples to maximise learning and mitigate risks?
- Can appropriate staff provide examples of where they have identified CFSI and have taken appropriate remedial measures including notification to the ONR and the sharing of learning through their Operational Experience (OPEX) arrangements?

Effective Procurement Cycle – Supply Chain Operational Experience (OPEX)

- Is their OPEX process established, and does it capture and act upon sub-standard performance issues associated with their Supply Chain Management (SCM) arrangements?
- Does their OPEX process capture and act upon issues occurring within their different Supply Chain tiers?
- Are their OPEX arrangements generating improvements in their SCM arrangements and do they influence commercial and/or Supply Chain strategy?
- Do they have evidence which demonstrates they evaluate relevant learning from other dutyholders, purchasers and supplier organisations, nationally and internationally as appropriate?
- Do they share learning within their Supply Chain and wider industry as appropriate?

Maintaining an Intelligent Customer Capability

- Do they retain and maintain the core capability in order to understand, specify, oversee and accept nuclear security related work undertaken on their behalf by contractors at any level of the Supply Chain?

The following documents are representative of evidence that may be referenced in the security plan and could be sought for review or sampled prior to the inspection:

- Commercial and/or Supply Chain policy.
- Relevant security plans.

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- Relevant security specifications.
- Relevant technical specifications.
- Relevant purchase orders.
- Change control processes.
- Quality management plans and procedures.
- Technical Queries and procedures.
- CFSI policies and procedures.
- Acquisition processes.
- Verification testing.
- OPEX policy and procedures.
- Security Aspects Letters.
- Operational Requirements.

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7 ANNEX B - SUPPLIER CAPABILITY**Regulatory Expectation**

The regulatory expectation is that dutyholders will describe in the security plan how they seek assurance of supplier capability to support effective nuclear supply chain management arrangements.

Inspectors should consider the dutyholder's ability to demonstrate compliance with arrangements made in their security plans through the exhibition of behaviours and knowledge, and the provision of evidence, which may consider:

Supply Chain Organisation and Technical Capability

- Can dutyholders demonstrate that their process for evaluating suppliers of security significant items and services are appropriately weighted to consider the quality and security requirements as a key part of the contract selection and award criteria?
- How does the dutyholder determine that their suppliers of security significant items and services currently have, and can maintain, sufficient SQEP personnel throughout the contract period?
- How do dutyholders assess that their suppliers have the capacity to provide an enduring source of security significant items or services throughout the contract period?
- Have they promulgated the required nuclear security culture with key suppliers?
- Can suppliers of security significant items or services, demonstrate that they understand the importance of their products in achieving the dutyholder's security plan requirements and are they well-coordinated with the dutyholder's staff?
- How do dutyholders demonstrate that they and their suppliers monitor the performance of key individuals who are responsible for providing security significant high-risk items or services?

Supply Chain Management Systems

- Are the supplier's management system arrangements appropriate to the risks of the items of services being supplied?
- Are Quality Plans comprehensive and inclusive of the full sequence of steps required to deliver the item or service, including references to assurance activities and applicable codes and standards?
- Do Quality Plans identify inspection/witness/review and hold points for all the required inspection parties?
- Are Quality Plans being adhered to and are they fully signed off after each step has been completed?
- Has the dutyholder put adequate contractual arrangements in place to ensure that relevant records are identified and provided by the Supply Chain in the correct form and to the required timescale?

The following documents are representative of evidence that may be referenced in the security plan and could be sought for review or sampled prior to the inspection:

- Commercial and/or Supply Chain policy.
- Relevant security plans.
- Quality Plans.
- Purchaser's document package:
 - Qualification of personnel.

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- Fabrication procedures.
- Material certification and traceability.
- Consumable specification.
- Concessions and rework.
- Manufacture.
- Fabrication instructions.
- Heat treatment records.
- Inspection and test results.
- Supplier material traceability and inspection.
- Supplier test and surveillance activities.
- Purchaser lifetime record package tracking process.

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8 ANNEX C - OVERSIGHT OF SUPPLIERS OF ITEMS OR SERVICES THAT MAY IMPACT ON NUCLEAR SECURITY

Regulatory Expectation

The regulatory expectation is that a dutyholder's security plan will describe how they apply oversight of suppliers of items or services of nuclear security significance to support effective nuclear supply chain management arrangements.

Inspectors should consider the dutyholders ability to demonstrate compliance with arrangements made in their security plans through the exhibition of behaviours and knowledge, and the provision of evidence, which may consider:

Supply Chain Oversight and Assurance

- Do the dutyholder's oversight and assurance arrangements allow them control of their supply chain management and procurement process arrangements for security significant items? Does it cover from the specification of the requirement and sourcing of a supplier including contract award, through to manufacture of item, construction of facility or provision of item or service?
- Does their oversight and assurance process confirm that their expectations are understood and communicated throughout the Supply Chain? Is it routinely reviewed to ensure that suppliers have an appropriate understanding of the security application and importance of their high consequence items or services?
- Do they have sufficient capability to oversee and assess performance throughout the Supply Chain? Is the level of oversight and assurance deployed by the supplier post contract award commensurate with the risk of the item or service failing to meet the specified intent? These quality assurance arrangements for the supply chain may be delivered by the principal contractor employed by the dutyholder.
- Do they utilise qualitative and quantitative data to demonstrate supplier performance during contract execution and instigate remedial measures where appropriate?
- Through sampling, are they carrying out adequate and appropriate assurance and acceptance of items or services being supplied or undertaken by others on their behalf?
- Are the Inspection Agencies that they use competent to provide third party assurance and verification of items or services significant to security?
- Do their assurance processes undertake regular reviews of the supplier's quality activities including the release of hold points; and, is the level of evidence to support hold point release defined and tested?
- Do their assurance processes undertake regular reviews of supplier's quality activities for Technical Queries (TQs)? Does it specifically focus on the aggregation of multiple TQs?
- Do they seek assurance from suppliers that the measures introduced to prevent CSFI from entering supply chain are in place and effective?

The following documents are representative of evidence that may be referenced in the security plan and could be sought for review or sampled prior to the inspection:

- Commercial and/or Supply Chain policy.
- Relevant security plans.
- Supplier's security procedures.
- Supplier performance data.
- Supplier assurance policy and procedures.
- Technical Queries.

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OFFICIAL**9 ANNEX D - COMMISSIONING****Regulatory Expectation**

The regulatory expectation is that dutyholders demonstrate in the security plan how they implement proportionate commissioning arrangements which should include clear definition of roles and responsibilities, performance indicators, availability of resources and clearly defined decision points (to be met prior to moving to the next phase), as appropriate. Where the plant and systems form a part of an existing infrastructure, the inspector should determine if a risk assessment has been undertaken to review the potential impact on security caused by the commissioning of the new (or refurbished) equipment. Planned mitigation of any associated risks should also be evidenced.

Inspectors should consider the dutyholders ability to demonstrate compliance with arrangements made under their security plans through the exhibition of behaviours and knowledge, and the provision of evidence, which may consider:

- Has the dutyholder confirmed that new equipment enables them to achieve the required PPS outcome?
- Is the commissioning process underpinned by appropriate levels of internal and external stakeholder engagement and adequate Operational Requirements (ORs)?
- Are stakeholders involved during the actual commissioning process?
- Are there appropriate plans and procedures in place to support the commissioning process as well as the introduction of any new or amended processes or procedures?
- Is the commissioning process supported by adequate numbers of SQEP personnel (managers, operators and maintainers)? Can they evidence their qualifications and experience?
- Have whole life maintenance and training requirements been considered and updated during the commissioning process?
- Do they have contingency plans if security equipment is not commissioned to schedule?
- Is security equipment being commissioned incorporated within security plans?
- How do dutyholders ensure that commissioned equipment is appropriately reliable and resilient?

The following documents are representative of evidence that may be referenced in the security plan and could be sought for review or sampled prior to the inspection:

- Commercial and/or Supply Chain policy.
- Relevant security plans.
- Records of commissioning activities.
- 'As built' drawings.
- Operating and maintenance procedures and requirements.
- Recommended spares holding.
- Operating Requirements.
- Operating manuals.
- Operating procedures.
- Maintenance manuals.
- Staff training records.
- Contingency plans.
- Performance requirements.

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