

# COGNMAS9

## Control external nuclear material movements onto and off a site



### Overview

This NOS forms part of a suite of standards which cover the activities carried out by individuals working within and on behalf of nuclear site licensed companies to meet nuclear material accountancy, control and safeguard (**NMAS**) requirements.

What is the NOS about?

A nuclear licensed site must ensure that nuclear materials are accounted for, controlled and safeguarded in order to demonstrate; good governance arrangements; meeting international safeguards commitments; and compliance with legal requirements and any voluntary undertakings. This NOS describes the standard expected of individuals who are responsible for managing the NMAS arrangements for external movements of nuclear material onto or off the nuclear licensed site, this includes any trans-shipment where material is held on a nuclear site as an intermediate destination.

Who is the NOS for?

This NOS is primarily for Nuclear Material Custodians and NMAS Managers within nuclear site license companies who are responsible for compliance with NMAS requirements for managing onto/off site movements of nuclear materials at a plant, site or organisational level. This NOS is also applicable to Transport Managers and Radioactive Material Transport Consignees and Consigners.

The main outcome of this activity is correctly controlled and accounted for nuclear material movements onto and off a nuclear site.

Where text is highlighted in bold, it is more fully defined in the Glossary section of this NOS.

# COGNMAS9

## Control external nuclear material movements onto and off a site

---

### Performance criteria

*You must be able to:*

- P1 meet the **NMAS requirements**, and **associated regulatory requirements** for receipts and shipments of nuclear material onto/off nuclear sites
- P2 meet the conditions to be satisfied for custodial handover and apply appropriate information classification and import/export notifications and controls
- P3 plan, communicate, notify and review a forward schedule of shipments and receipts in an annual outline of activities
- P4 set out the NMAS checks and measurement requirements and the source (measurement) which determines the quantity of material transferred and related uncertainties
- P5 carry out **reception procedures** for each receipt of nuclear material onto site and **shipment procedures** for each issue off site
- P6 apply **quality controls** to ensure **data integrity** for any receipt or shipment of nuclear material onto/off site
- P7 confirm that receipts or shipments of containers which are empty or contain non-nuclear materials do not contain nuclear material
- P8 maintain material segregation, ensure traceability and prevent access for removal of material during shipment preparation or receipt acceptance
- P9 **secure information on content and schedules of movements in line with sensitivity of materials and protective marking requirements**
- P10 apply approved and secure electronic data interchange appropriate to the security classification of the transfer data/records
- P11 follow holding arrangements for receipts and shipments of nuclear material during a movement suspension period (e.g. during Physical Inventory Take or independent stakeholder verifications)
- P12 follow **anomaly** procedures for any unauthorised seal breaks, material containment breaches, accidental loss/spillage, or where material has gone missing during transfer or packing/unpacking

# COGNMAS9

## Control external nuclear material movements onto and off a site

---

### Knowledge and understanding

*You need to know and understand:*

- K1 the NMAS requirements, other associated regulatory requirements, **organisational procedures for external transfers**, and the types of controls that can be put in place to ensure they are met
- K2 timescales for updating documentation consequent to the material movement
- K3 the NMAS **implementation framework** in relation to shipments and receipts of nuclear material
- K4 organisational procedures relating to **record management system requirements**, location of information sources and change control arrangements
- K5 tools and technology for applying and reading automatic identification systems (bar codes, radio frequency tags etc) and for handling and measuring the transfers
- K6 conditions for acceptance, prescribed pick-up and put-down areas, out of hours arrangements, how to verify, check, accept, refuse and quarantine transfers, and dispute/umpire arrangements
- K7 arrangements with third party transport agents
- K8 import/export control and Stakeholder (e.g. International Safeguards) arrangements, notification requirements, and procedures and methods for verification during packing/unpacking consignments
- K9 shipper/ Receiver Difference (SRD) action levels relevant to the material transfer
- K10 **data verification errors and discrepancies** and how to resolve them within the extent of your authority or how to refer them to the appropriate authority
- K11 information technology software systems in use for handling the control and recording of nuclear material movements onto/off site and associated electronic data interchange
- K12 security, safety, criticality and waste management arrangements including information security and protective markings.

# COGNMAS9

## Control external nuclear material movements onto and off a site

---

### Additional Information

#### Glossary

**Anomalies:** are NMAS **discrepancies** that are consistent with the absence or gain of a significant amount of nuclear material. These include:-

- 1 unacceptable losses detected by the account balances or by process monitoring
- 2 loss of a discrete item on site or in transit
- 3 significant finds of nuclear material
- 4 unacceptable shipper/receiver difference

**Associated regulatory requirements:** such as Safety, Security, Waste Management, Environmental Protection, Transport and Import/Export Controls.

**Data integrity:** includes data timeliness, quality (free from defects), authenticity, provenance, authorisation, completeness, adherence to required format and content, traceability, freedom from contamination/corruption.

**Data verification errors and discrepancies:** include those revealed during authentication, authorisation and validation or through arrangements for identifying incomplete data, data errors and discrepancies, and unusual features (such as damage of stock or container).

**Implementation Framework:** includes the NMAS physical and the managerial arrangements. It defines; the Material balance areas; transfer boundaries; key measurement points; NMAS capabilities, resources and infrastructure; control arrangements. It defines; organisational structures, responsibilities and accountabilities, separation of duties, those with direct custodial care of nuclear material and the competency framework.

**NMAS:** taken to include nuclear materials accountancy, nuclear materials control and nuclear material safeguards.

# COGNMAS9

## Control external nuclear material movements onto and off a site

---

**NMAS requirements:** comprise mandatory requirements set down in binding legal contracts, set, set down in UK policy and commitments, and set down in national and international Treaties and Regulations (particularly the safeguards reporting regulations and associated implementation guidelines). They also include optional requirements to which the site voluntarily subscribes.

**Organisational Procedures for external transfers:** include procedures for transfers of civil and defence materials and for nuclear materials treated as wastes. In each case they include appropriate shipment or reception procedures.

**Quality Control:** includes performance monitoring and testing, quality control and quality assurance, record keeping, and where appropriate, measures to protect from unauthorised tampering or prevent measurement systems being bypassed.

**Record management system requirements:** the site's overall records management system should be compliant with or equivalent to relevant standards. The emphasis in NMAS record management is:

- 1 authorising, securing, retaining, archiving, and destroying records
- 2 ensuring provenance of data by traceability of accounting records to their source documents (operating records) and authenticity checks
- 3 provision of linkage and activity logs to facilitate tracking nuclear material batch/item histories (of movement, modification, and correction)
- 4 segregation of the handling of records for civil nuclear material from those for defence materials

# COGNMAS9

## Control external nuclear material movements onto and off a site

---

### **Reception procedures:** include:

- 1 ensure that receipts are; expected; accompanied by packing documentation, uniquely identified; and have unique container/batch references or if necessary assign unique identifiers
- 2 providing appropriate notifications to stakeholders applying hold points during unpacking (when safeguard inspectors/stakeholders have indicated they require independent verification)
- 3 apply; receipt verification as soon as possible after receipt onto site; and remove, retain and return to safeguards inspectors any seals as required (with their approval). Obtaining appropriate approvals and authorisations to release the material available for use
- 4 ensure the receipt is recorded as soon as it is received on site (even if data is incomplete or in dispute) and record its subsequent receipt into site storage or unpacking locations
- 5 follow agreed shipper/receiver difference (SRD) procedures, including SRD recording, dispute resolution, umpire and quarantine arrangements and anomaly procedures for SRD which exceeds action levels

### **Shipment procedures:** include:

- 1 obtaining appropriate approvals and authorisations
- 2 uniquely identifying the transfer event and the individual items/batches being transferred; correct labelling and markings; and checking/preserving container integrity
- 3 providing appropriate notifications to stakeholders applying hold points during packing (when safeguard inspectors/stakeholder have indicated they require independent verification)
- 4 ensuring that shipments are accompanied by packing and shipping documentation and are recorded at the time of leaving the site
- 5 obtaining appropriate approvals and authorisations to release the material available for use.

# COGNMAS9

## Control external nuclear material movements onto and off a site

---

**Stakeholders:** include:

- 1 contacts within the site, the organisation, the parent company, the site owner
- 2 customers and contractors
- 3 public groups
- 4 national bodies with responsibilities for NMAS including the Department for Energy and Climate Change (DECC), the Office for Nuclear Regulation (ONR) Safeguards function and the Ministry of Defence
- 5 regulators including:
  - 5.1 the ONR Safety function, the ONR Security function, and the ONR Transport function (Radioactive Materials)
  - 5.2 environmental (EA, SEPA)
  - 5.3 the International Safeguard Inspectorates (the European Commission's Euratom Safeguards Inspectorate and the International Atomic Energy Agency Safeguards Inspectorate)

# COGNMAS9

Control external nuclear material movements onto and off a site

---

<b>Developed by</b>	Cogent
<b>Version number</b>	03
<b>Date approved</b>	September 2011
<b>Indicative review date</b>	September 2013
<b>Validity</b>	Current
<b>Status</b>	Original
<b>Originating organisation</b>	Cogent
<b>Original URN</b>	COGNMAS9
<b>Relevant occupations</b>	Nuclear Material Custodians; NMAS Managers; Transport Managers; Radioactive Material Transport Consignees; Radioactive Material Transport Consigners
<b>Suite</b>	Nuclear Materials, Accountancy, Safeguards and Control (NMAS)
<b>Key words</b>	Nuclear; Materials; Safeguards; Control