

COGNMAS14

Liaise with safeguard inspectorates and other stakeholders



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 interactions with NMAS stakeholders.

Who is the NOS for?

This NOS is primarily for the NMAS Managers. It is also applicable to Nuclear Material Custodians and Nuclear Material Accountants.

The main outcome of this activity is a managed and well understood interface with NMAS stakeholders and in particular the interface with the safeguards inspectorates' verification regime.

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

COGNMAS14

Liaise with safeguard inspectorates and other stakeholders

Performance criteria

You must be able to:

- P1 identify **stakeholders**, their requirements and expectations and translate these into operating practices and procedures (the overall quality management system), site plans, and **NMAS capabilities, resources and infrastructure**
- P2 establish stakeholder relationships at the appropriate operational, technical and managerial levels, provide clear points of contact, and ensure rapid communication of emergency and high priority issues
- P3 document information interchanges and agreements reached with stakeholders in accordance with organisational procedures and **record management systems**, and in line with national NMAS policy and information security requirements
- P4 engage early with stakeholders on **safeguards by design**, and **safeguards in-depth** measures in plant designs, major modifications and decommissioning plans.
- P5 formalise agreements in **design intent documentation and project dossiers**.
- P6 interpret and communicate the relevance of other **associated regulatory requirements** within the **process context** and ensure that stakeholders comply with these requirements when on site
- P7 support stakeholders to carry out efficient inspection, technical, and audit activities, including assistance with **asset management**
- P8 ensure information provided to stakeholders meets their requirements and is as accurate as possible
- P9 maintain appropriate levels and frequency of communication with stakeholders according to their importance and relevance to the decisions and actions being undertaken
- P10 respond to any questions and requests and ensure timely actions, consistent and authorised responses, and follow up until the issues are closed out
- P11 keep stakeholders informed of developments, incidents, **anomalies**, and NMAS information proposed for publication
- P12 identify any conflicts of interest and disagreements with stakeholders, and resolve them as effectively as possible
- P13 review relationships with stakeholders at appropriate intervals and requirements for review and communications meetings

COGNMAS14

Liaise with safeguard inspectorates and other stakeholders

Knowledge and understanding

You need to know and understand:

- K1 the range of relevant stakeholders and their requirements
- K2 the nuclear non-proliferation regime, the role of international safeguards verification and of effective nuclear material management, and NMAS risk assessments of unauthorised removal/diversion scenarios
- K3 the **NMAS requirements**, the **implementation framework**, stakeholder owned assets on site, commercial support contracts, and commitments in **supplementary safeguards information**, design intent documentation and in formal correspondence
- K4 the NMAS capabilities, resources and infrastructure and in particular those relating to physical inventory taking and verification and to supporting inspections and investigations
- K5 frequency and nature of interactions with stakeholders and safeguards inspectorates
- K6 procedures and records management system for recording, tracking and responding to stakeholder communications
- K7 key performance measures used by stakeholders, current level of satisfaction, comparison benchmarks, and good stakeholder management practices
- K8 stakeholder verification requirements and techniques; weighing, sample taking, verification of movements, Non-destructive assay devices, tamper proofing etc
- K9 an inventory of stakeholder equipment based on site and procedures for transporting equipment on-off plants and on-off site
- K10 personnel security access requirements for escorting inspectors and for information classification
- K11 safety and radiation protection protocols agreed with stakeholders for their independent activities on site
- K12 regulatory powers, scope, limits of authority and punitive measures
- K13 reporting requirements of the safeguards additional protocol on the organisation, its subsidiaries and its nuclear material collaborations with other organisation
- K14 the consequences of discrepancies and anomalies on stakeholders being able to draw non diversion assurances and safeguards conclusions

Additional Information

Glossary

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

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

Asset management: the management of equipment resources, including routine and breakdown maintenance, equipment degradation, obsolescence, replacement and disposal.

Associated Regulatory requirements: safety, Security, Waste Management, Environmental Protection, Import/Export controls, and Transport

Design: this includes new designs or refurbishments which could impact on NMAS arrangements:

- 1 within that plant, system or equipment under consideration or which could impact on adjacent plant or systems
- 2 through design of new or refurbished NMAS related information technology (IT) or associated software or subsidiary data capture systems
- 3 through new or refurbished radiometric instruments used for NMA purpose. Such instruments should provide output with measurement uncertainties which are consistent with accepted International Target Values (ITVs) for such equipment.

Design Intent Documentation: includes:

- 1 the project approved NMAS specification of design features and capabilities
- 2 the catalogue of design documents exchanged with the safeguards inspectorates
- 3 the approach agreed with the safeguards inspectorates detailing the independent equipment, installation requirements, data provision/access requirements, inventory requirements, and design verification requirements
- 4 the project commissioning and engineering plans with NMAS requirements integrated
- 5 the NMAS Commissioning specification
- 6 the initial measurement control programme and material balance capability expectations.

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

NMAS capabilities, resources and infrastructure: includes provision of:

- 1 technical support for NMAS issues
- 2 equipment for measurement and for material control
- 3 sampling and analytical capabilities with timely results
- 4 sufficient time and scope of duties to meet NMAS requirements
- 5 training and development
- 6 a competent workforce of Suitably Qualified and Experienced Personnel (SQEP)'d to carry out NMAS duties.
- 7 clear NMAS points of contact and responsibility within design and decommissioning project teams
- 8 computerised data capture and accounting systems

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.

Process Context: includes the plant design, the measurement envelope, the physical and chemical properties of materials in the plant flow-sheet, the ionising radiation environment, measurement system maintenance and eventual decommissioning policy and the plant operating parameters and expected throughputs.

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

Safeguards by design: an approach to the design and construction of nuclear plant or equipment in which nuclear safeguards provisions and features are designed into the plant or equipment from the very beginning of the design process.

Safeguards in depth: a range or hierarchy of techniques deployed to ensure multiple systems of detection and prevention and avoid over reliance on a single NMAS component. Safeguards in depth are needed to provide an assurance of non-diversion in circumstances where plant throughput and measurement complexity mean that nuclear material accountancy may not achieve International Target Values.

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)

Supplementary safeguards information: this includes:

- 1 **BTC** - Basic Technical Characteristics required by the Euratom regulation to describe the site fuel cycle processes and NMAS related systems
- 2 **DI** - Design Information is the IAEA counterpart of the BTC and serves the same purpose
- 3 **PSP** - Particular Safeguards Provisions are additional (to the regulation) safeguards requirements specific to your site set out by Euratom
- 4 **FA** - Facility Attachments is the IAEA counterpart of the PSP
- 5 **AP submissions** – Details as required by the safeguards Additional Protocol.

COGNMAS14

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