Office for Nuclear Regulation

ALERT

Supply Chain Management
Counterfeit, Fraudulent and Suspect Items (CFSI)

Site	Non-specific
Licensee	All licensees and dutyholders and their supply chains
Incident Date/Time (if applicable)	Not applicable
Issuing Specialism / Division	Supply Chain Sub-specialism, Human & Organisational Capability, Technical Division

Purpose and Background

Purpose

The purpose of this alert is to:

1. Reinforce the risks of counterfeit, fraudulent and suspect items (CFSI) entering the nuclear supply chain (SC); and
2. Emphasise the methods dutyholders can deploy to mitigate the risks.

This alert is relevant to both ONR and dutyholders. It reinforces the 2015 ONR OPEX learning note 001-15, which highlighted the risks of CFSI entering the nuclear SC. Operating experience continues to identify examples of CFSI that have the potential to impact the UK nuclear industry and safety.

Background

There should be recognition at all levels across the nuclear sector, its supply chain and ONR that there are parties who might wish to substitute CFSI for genuine items or services. This may be for reasons of commercial gain, to avoid processes to qualify items or because of deviations from specification.

CFSI present risks to nuclear safety as the items or services may not be capable of performing their intended function or be of the required quality or reliability. The presence of CFSI in the nuclear SC can impact the public's confidence in the safety of nuclear operations.

Identification of CFSI can be challenging. The CFSI occurrence may be at component level or form part of a wider assembly and associated records. To maintain the safe construction and operation of nuclear facilities, it is important that dutyholders implement adequate arrangements to prevent, protect and mitigate against CFSI within their SC and its effects on their plant.

Examples of CFSI entering the nuclear SC have been the subject of public interest at national and international levels. ONR is proactively engaging with its dutyholders and the wider international community to ensure robust arrangements are in place to minimise CFSI occurrences in the UK nuclear industry.

The following terminology is associated with CFSI (adapted from IAEA NP-T-3.26 'Managing Counterfeit and Fraudulent Items in the Nuclear Industry'):

- Counterfeit Items - Products that are intentionally manufactured, refurbished or altered to imitate original products without authorisation, in order to pass them off as genuine.
- Fraudulent Items - Products that are intentionally misrepresented with the intent to deceive. Fraudulent items include items provided with incorrect identification or with falsified or inaccurate certification.
- Suspect Items - Products for which there is an indication or suspicion that they may not be genuine.

ONR Technical Assessment Guide (TAG) NS-TAST-GD-077 'Supply Chain Management Arrangements for the Procurement of Nuclear Safety Related Items or Services' sets out ONR's expectation that dutyholders:

- Be aware of the risks and hazards of CFSI entering the nuclear SC; and
- Implement mitigating measures as appropriate to the scale and complexity of their SC and the nuclear safety application of their items or services.

The following are examples of measures dutyholders can take to mitigate the risk of an undetected CFSI occurrence:

- Effective Management Systems – That define SC management and procurement processes related to the acquisition of nuclear safety significant items and services.
- Training – Competent staff trained in the application of the procurement processes and risks associated with CFSI. Training should cover the 'end-to-end' SC, from specification of requirement(s) through to those receiving and installing the items and/or providing services.
- Supplier Qualification – Sourcing a SC with the capability to operate to the standards defined in the purchaser's management system. There should be no deterioration in arrangements through the SC tiers.
- SC Oversight & Assurance – Ranging from effective communication to, and education of the SC in CFSI standards and at-risk procurements, through to intrusive audit and inspection approaches. Utilising 'positive material identification' and 'product traceability to source' techniques when appropriate.
- Shared Learning – Learning from experience and utilising operational experience (OPEX) routes for sharing CFSI learning, this may include the licensees Safety Directors Forum (SDF) Supply Chain Quality Working Group (SCQWG), the suppliers Nuclear Industry Association Suppliers Group, or other industry groups and forums as appropriate.
- Establish an effective safety culture – Ensuring staff understand the safety significance of the item or service, their individual role as the purchaser in securing safe operations and the importance of maintaining vigilance and a questioning attitude during procurement and goods-in-receipt.

For further information see IAEA NP-T-3.26 'Managing Counterfeit and Fraudulent Items in the Nuclear Industry'.

Context and Relevance to Industry

Evidence of CFSI occurrences have been found across the world in all major industries, including nuclear. The risk of CFSI has increased with the globalisation of the world's economy, with some vendors entering the SC having little or no experience of the standards and requirements of the nuclear industry. The risks in the UK nuclear sector have increased given the increasing economic pressures on suppliers, capability challenges, complex SCs and obsolescence issues associated with aging plant.

Below are some international events reported since the previous OPEX note in 2015:

- 2017 – Kobe Steel identified that it had experienced misconduct in the production of records associated with high integrity products to customers worldwide.
- 2017– Bradken identified a discrepancy between test results recorded in the company's internal systems and the results that were certified to the customer. In 2021 the Director of Metallurgy was convicted of falsifying test results for the United States Submarine Programme.
- 2022 – Mitsubishi Electric identified improper quality control practices associated with high voltage electrical transformers.
- 2022 – Gray Market industrial automation products were identified by a nuclear supplier during goods-in-receipt inspection.

Licensee and Dutyholder Considerations

All licensees and dutyholders should consider if their supply chain management or procurement arrangements have:

- methods to raise awareness of CFSI within their supply chain and encourage open reporting of CFSI examples to maximise learning and mitigate risks?
- competent staff involved in the acquisition processes, who are aware of the risks of CFSI, understand and support the organisation's mitigation methods, and have arrangements in place, to quarantine, investigate and sentence suspect items?
- adequate processes in place to prevent CFSI entering their supply chain at any level? This may include the application of positive material identification and non-destructive testing methods during its assurance arrangements.
- identified examples of CFSI and taken appropriate remedial measures, including the notification of ONR, through the licensee as appropriate, and the sharing of learning through their OPEX arrangements?

For further information on ONR's regulatory expectations see NS-TAST-GD-077 'Supply Chain Management Arrangements for the Procurement of Nuclear Safety Related Items or Services '.

Reporting to ONR

Licensees

The licence conditions require licensees to make and implement adequate arrangements for the notification, recording, investigation, and reporting of incidents on their sites. Reporting of

significant CFSI occurrences to ONR should normally be via the incident notification (INF1) process NS12 categorisation for licensees.

It is also ONR's expectation that licensees should, through an appropriate means, routinely inform ONR of all examples of CFSI confirmed within their SC (including those that do not meet INF1 reporting thresholds). This may be done via routine level 4 engagements or other appropriate means agreed with ONR.

Suppliers and other dutyholders

Suppliers and other dutyholders should inform their licensee customers of all examples of CFSI confirmed within their SC in the first instance for onward reporting to ONR (through the most appropriate means).

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