



The NRC's Agencywide Approach to Counterfeit, Fraudulent, and Suspect Items (CFSI)

**National IPR Center
Open House - June 20, 2013**

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Topics for Today

- ✓ The NRC – Who we are & how we regulate?
- ✓ Why CFSI is a concern
- ✓ Poor Performance vs. Wrongdoing
- ✓ Counterfeit vs. Fraudulent
- ✓ How is the NRC addressing CFSI
 - ✓ Domestic
 - ✓ International
- ✓ Questions?



National IPR Center Partners

1. U.S. Postal Inspection Service (USPIS)
2. Defense Criminal Investigative Service (DCIS)
3. Air Force Office of Special Investigations (AFOSI)
4. U.S. Naval Criminal Investigative Service (NCIS)
5. General Service Administration's Office of the Inspector General
6. INTERPOL
7. Royal Canadian Mounted Police (RCMP)
8. Department of Commerce's Office of Intellectual Property Rights (OIPR)
9. U.S. Department of State's Office of International Intellectual Property Enforcement (IPE)
10. Federal Bureau of Investigation (FBI)
11. U.S. Immigration and Customs Enforcement's (ICE) Homeland Security Investigations (HSI)
12. U.S. Customs and Border Protection (CBP)
13. Food and Drug Administration's (FDA) Office of Criminal Investigations (OCI)
14. U.S. Army Criminal Investigation Command
15. Defense Logistics Agency (DLA)
16. U.S. Patent and Trademark Office (USPTO)
17. U.S. Consumer Product Safety Commission (CPSC)
18. National Aeronautics and Space Administration (NASA)
19. Mexican Revenue Service
20. EUROPOL
21. **U.S. Nuclear Regulatory Commission (NRC)** ← July 11, 2012



Some Nuclear Power Facts (Domestic)

- 10² nuclear power plants supply ~ 775B Kwh/yr in the U.S. (~18 %)
 - Average U.S. Nuclear plant produces 12.2 B kWH
- New NRC licensed construction
 - Vogtle Units 3 & 4
 - V.C. Summer Unit 2
 - Watts Bar Unit 2
 - Mixed Oxide Fuel (MOX) facility
 - GE's Separation of isotopes by Laser Excitation (SILEX) facility
- Nuclear materials are used in medicine for cancer treatment and diagnosis.
- Nuclear materials are widely used in industry, such as in density gauges, flow measurement devices, radiography devices and irradiators.



NRC's Mission Statement:

To license and regulate the nation's civilian use of byproduct, source and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.



www.nrc.gov/about-nrc/nrc-slides-who-we-are.pdf



The NRC Regulates:

- **Nuclear reactors** – commercial power reactors, research and test reactors, new reactor designs;
- **Nuclear materials** – radioactive materials for medical, industrial and academic use;
- **Nuclear waste** – transportation, storage and disposal of nuclear material and waste, decommissioning of nuclear facilities; and
- **Nuclear security** – physical security of nuclear facilities and materials from sabotage or attacks.



NRC Objectives

- **Safety** - Ensure the protection of public health and safety and the environment.
- **Security** - Ensure the secure use and management of radioactive material.
- **Openness** - Ensure openness in our regulatory process.
- **Effectiveness** - Ensure our actions are effective, efficient, realistic and timely.
- **Management** - Ensure excellence in agency management.



What We Don't Do:

- Regulate nuclear weapons, military reactors or space vehicle reactors. (regulated by others federal agencies)
- **Lobby** for nuclear power. (U.S. nuclear agenda set by the President and Congress.)
- **Own or operate** nuclear power plants.
- Regulate naturally occurring radon, X-rays and material produced in particle accelerators. (regulated by states or other federal agencies.)
- ***Procure the components that are installed into licensed facilities***



Pertinent Regulations

1. **10 CFR 21** - REPORTING OF DEFECTS AND NONCOMPLIANCE
2. **10 CFR 50** - DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES
 - **Appendix B:** **QUALITY ASSURANCE CRITERIA FOR NUCLEAR POWER PLANTS AND FUEL REPROCESSING PLANTS**
3. **10 CFR 50.5** - DELIBERATE MISCONDUCT
4. **10 CFR 52** - EARLY SITE PERMITS; STANDARD DESIGN CERTIFICATIONS; AND COMBINED LICENSES FOR NUCLEAR POWER PLANTS
5. **10 CFR 73.54** - PROTECTION OF DIGITAL COMPUTER AND COMMUNICATION SYSTEMS AND NETWORKS (a.k.a. the Cyber Security Rule)

Appendix B to 10 CFR 50

The 18 Criteria / CFSI Elements

I	ORGANIZATION	
II	QUALITY ASSURANCE PROGRAM	CFSI
III	DESIGN CONTROL	CFSI
IV	PROCUREMENT DOCUMENT CONTROL	CFSI
V	INSTRUCTIONS, PROCEDURES, AND DRAWINGS	CFSI
VI	DOCUMENT CONTROL	
VII	CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES	CFSI
VIII	IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS	CFSI
IX	CONTROL OF SPECIAL PROCESSES	
X	INSPECTION	CFSI
XI	TEST CONTROL	CFSI
XII	CONTROL OF MEASURING AND TEST EQUIPMENT	
XIII	HANDLING, STORAGE AND SHIPPING	CFSI
XIV	INSPECTION, TEST, AND OPERATING STATUS	CFSI
XV	NONCONFORMING MATERIALS, PARTS, OR COMPONENTS	CFSI
XVI	CORRECTIVE ACTION	CFSI
XVII	QUALITY ASSURANCE RECORDS	CFSI
XVIII	AUDITS	CFSI

Criterion VII - Control of Purchased Material, Equipment, and Services

- *Appendix B of 10 CFR Part 50*

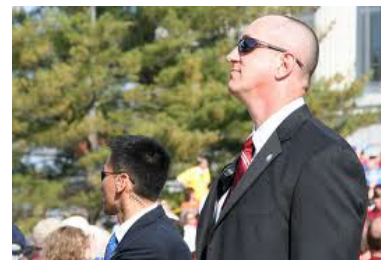


“Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors, conform to the procurement documents. These measures shall include:”

- 1. Source evaluation and selection*
- 2. objective evidence of quality furnished by the contractor or subcontractor*
- 3. inspection at the contractor or subcontractor source*
- 4. examination of products upon delivery*



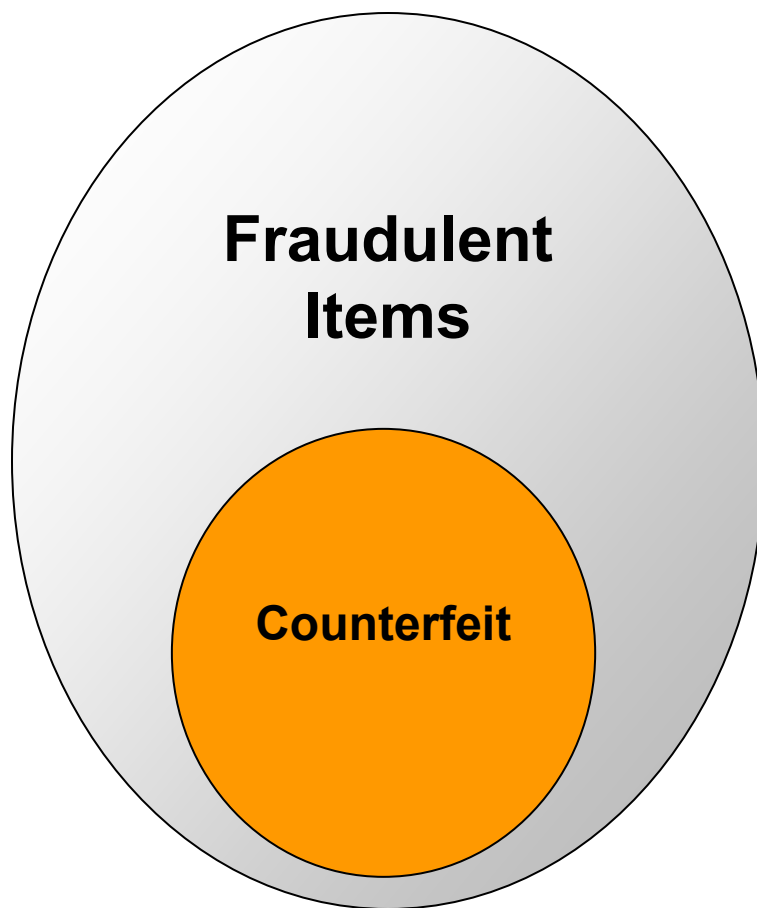
Poor Performance vs. Wrongdoing



- Poor performance by a vendor resulting in a nonconformance, while undesirable, can be managed by effective customer oversight.
- Intentionally misrepresenting equipment, parts or materials is illegal and must be dealt with appropriately!



CFSI Diagram a.k.a. “the fried egg”



**“Suspect” =
unconfirmed**

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Generic Letter 89-02

“Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products.”

The 3 characteristics of effective procurement and dedication programs:

1. Engineering involvement in the procurement & acceptance process
2. Effective inspection & testing programs
3. Thorough, engineering-based commercial grade dedication (CGD) programs.



The Need for Increased CFSI Attention

- **Historic increase in counterfeit electronic incidents** (U.S. DOC Jan. 2010)
 - **140%** increase in DoD counterfeit electronic reports: 2006-2009
 - **82%** of companies DO NOT report CFSI
- **Industry indications** (mostly international)
- **Increased use of commercial-grade dedications**
- **Supply chain globalization**
- **Industry-wide transition to digital technology**
 - Advanced microcircuit technology (including programmable logic controllers)
- **Advanced Counterfeiting Technology**
- **Cyber Security for Critical Infrastructure** (embedded/tainted code)

Recent CFSI events in the news



- 2012**
- Jan The Construction Industry Institute (CII) approves additional funding to continue researching counterfeit materials in the construction industry (RT-307)
- Feb Procurement Director of a Russian supplier to the nuclear power industry arrested for buying low quality raw materials and pocketing the difference.**
- Nov INPO Event Report IER-4-12-86, "Counterfeit Parts and Equipment Vulnerability"
➔ Issued w/action statement: "Plants are expected to consider corrective actions provided in this document and to develop applicable corrective actions."
- Dec Pentas Controls – DOJ press release
- 2013**
- Jan Multiple South Korean plants identify numerous CFSI issues**
- Jan IAEA adds CFSI to Convention on Nuclear Safety (CNS) Annual reports**
- Jan IN-2012-22, "Counterfeit, Fraudulent, Suspect Items Training Offerings" issued
- Feb NRC reinstitutes public meetings specifically to address CFSI with industry
- Apr India holds initial fuel load at Kudankulam plant due to suspect fraudulent parts**
- Apr "Grand Fraud" exposed at the Russian nuclear energy company for misrepresenting the development activities for equipment intended for nuclear reactors.**
- Jun Two more S. Korean plants shut down over fake control cable certificates. ROK President orders "Parliamentary" investigations.**
- 2014** *tbd* ASME NQA-1 discussing adding CFSI language to the 2014 Addenda

How is the NRC addressing CFSI?



1. Issuance of IN 2008-04, "Counterfeit Parts Supplied To Nuclear Power Plants," [ML093620098]
2. Established an NRC Internal CSFI community
3. Issued NUREG/BR-0500, "Safety Culture Policy Statement"
4. Issued SECY-11-0154, "An Agencywide Approach to Counterfeit, Fraudulent, and Suspect Items," [ML112200150]
5. Issued Staff Review of Counterfeit, Fraudulent, and Suspect Items (CFSI)," [ML112130293]
6. Issued IN 2012-22, "CFSI Training Offerings" [ML12319A044]
7. Conducting public meetings to raise stakeholder awareness & review industry voluntary initiatives
8. Continuing to enhance the NRC's Vendor Inspection program



International Focus

- International Atomic Energy Agency (IAEA)
 - Convention on Nuclear Safety (CNS) - Annual Report
 - CFSI Guidance IAEA-TECDOC-1169
 - Incident Reporting System (IRS)
- Nuclear Energy Agency (NEA)/Committee on Nuclear Reliability Activities (CNRA):
 - Working Group on Operating Experience (WGOE)
 - Task Group on Nonconforming & CFSI
 - Multinational Design Evaluation Programme (MDEP)
- Various Bilateral Initiatives



QUESTIONS

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