



Counterfeit, Suspect, Fraudulent Items (CSFI): Today & Tomorrow

***Nuclear Procurement Issues Committee (NUPIC) Vendor Meeting
June 18, 2009 St. Louis, MO***

Daniel Pasquale

Sr. Operations Engineer
Quality and Vendor Branch
Office of New Reactors

Daniel.Pasquale@nrc.gov



TOPICS

- Refer to the current NRC guidance
- Protect your Intellectual Property (IP)
- Maintain a robust CSFI program
- Build a solid community



CONTINUOUS IMPROVEMENT

*“Those who cannot remember history are
condemned to repeat it.”*

- Edmund Burke (1729-1797)

Generic Communication IN 2008-04

“Counterfeit Parts Supplied To Nuclear Power Plants”

The **3 characteristics** of an effective procurement and dedication plan:

- 1) The involvement of engineering staff in the procurement and product acceptance process;
- 2) Effective source inspection, receipt inspection, and testing programs;
- 3) Thorough, engineering-based programs for review, testing, and dedication of commercial-grade products for suitability for use in safety-related applications.

Generic Communication IN 2008-04

“Counterfeit Parts Supplied To Nuclear Power Plants”

“Licensees may want to consider the applicability of these characteristics to their programs to reduce the likelihood of the introduction of counterfeit or fraudulent products into their plants and to assure the quality of procured vendor products.”

FOCUS AREAS FOR CFSI

- Basic Components (Safety Related) [10 CFR 50 Appendix B & 10 CFR 52]
- Commercial Grade Dedication (CGD) [10 CFR 21]
- Operating Plants: Augmented Quality (AQ)
- COL Plants: Regulatory Treatment of Non-Safety Systems (RTNSS) [SECY-94-084 & SECY-95-132]
- Special Nuclear Materials: Items Relied on for Safety (IROFS) [10 CFR 70.4]

SAFETY CLASSIFICATION VS. CSFI VULNERABILITY

	Nuclear Safety Significance	Degree of Inspection	Vulnerability to CSFI
Basic Components	High	High	Low
CG Dedicated	High	Moderate	Moderate
Augmented Quality	Moderate	Low	High
RTNSS Items	Moderate	Low	High
IROFS Items	Moderate	Low	High
Commercial Quality (Non-safety Related)	Low	Low	High

RECENT CSFI ACTIVITY ON NUCLEAR POWER'S RADAR

1. ABB Capacitors – *U.S.A. (Nuclear Power)*
2. Copper Busmann Fuses – *U.S.A. (Nuclear Power)*
3. Ladish Valves – *U.S.A. (Nuclear Power)*
4. Square-D Breakers – *U.S.A. (Nuclear Power)*
5. Microchip, Handheld Rad Detector - *U.S.A. (Nuclear Power)*
6. Fasteners – *U.S.A (DOE facility)*
7. Moisture Separator Reheater Piping – *Japan (Nuclear Power)*
8. Substandard Steel – *Italy (Nuclear Power)*
9. Seamless Pipe – *China (Fossil Power)*
10. Fasteners – *U.S.A. (Oil Refinery)*
11. ASME Flanges – *U.S.A. (Oil Refinery)*
12. Chrome gas valves 2"-24" - *U.S.A. (Oil Refinery)*
13. Pressure Safety Valves - *U.S.A. (Oil Refinery)*

SOURCES OF COUNTERFEITING

- Theft of O.E.M. design (readily available technology)
- Remarking (100MHZ part becomes 200MHZ)
- Illegal Manufacturing (unauthorized design use)
- Peppering (Salting) of CSFI parts
- Open door return policies
- Rebuilding used items
- Inventory auctions (in & out)
- Scrap salvaging
- Dumpster diving

BRANDING FRAUD

Tampering with original markings or application of counterfeit markings including:

- OEM markings (black topping & re-etching)
- Counterfeit manufacturer's labels or tags
- Inspector's insignia/designators
- Lot/heat/batch markings
- Tracking bar codes/RF information

DOCUMENT FRAUD

Falsification of Product Certificates:

- Certificates of Conformance (COC)
- Certified Material Test Reports (CMTR)
- Lot/Batch/Heat Records
- Factory Acceptance Testing (FAT)
- Scrap Authorizations
- Cut Logs
- Bills of Lading/Manifests

WHAT SHOULD YOU BE DOING

- 1. Re-acquainting yourself with the body of knowledge issued by the NRC**
 - Incorporate the 3 characteristics of an effective procurement and dedication plan as presented in IN 2008-04 (GL 89-02)**
- 2. Sharing CSFI information**
- 3. Maintaining safety above all else**

WHAT CAN YOU BE DOING

Some Proactive Best Practices:

- Protect Your Intellectual Property
 - Register patents & trademarks
 - Impose strong IP procurement clauses including specific CSFI language
 - Question the supplier's IP controls
 - Institute anti-fraud techniques
- Maintain Robust Procurement Controls
 - Perform vigilant receipt inspections that include CSFI elements
 - Include a CSFI element for repair/returns receipt inspections
 - Control disposal of process scraps, rejects, un-repairable returns etc
 - Trust but verify
- Know Your Suppliers
 - Use O.E.M. authorized distributors
 - Employ rigorous supplier selection processes
 - Maintain short supply chains

WHAT CAN YOU BE DOING

Some Proactive Best Practices:

- Communicate and Maintain a Relationship with the O.E.M
 - Seek O.E.M. assistance In detecting CSFI
 - Ensure that the O.E.M. also has a robust CSFI program
- Take Action
 - Report known or suspected Counterfeiting
 - Guard Intellectual Property
 - Take appropriate legal actions
- Stay Current
 - Monitor counterfeiting news
 - Participate in related industry committees
 - Share information

ANTI-FRAUD TECHNIQUES

- ◆ Controlled paper stock for CMTR's, CofC's etc
 - ◆ Use of watermarks etc
 - ◆ Use of embedded labeling
 - ◆ Quantum Dot fluorescent particles (experimental)

COMMUNITY WATCH PROGRAMS

A community-based organization working together to combat CSFI activity:

- Take positive steps
- Share current information of new trends in CSFI
- Establish consistent programs for combating CSFI activity
- Awareness of & access to the various related government agencies
- Develop industry standards
- Evaluate CSFI claims
- Training for Inspectors, Purchasers and QA personnel

NOW IS THE TIME TO SHARE INFORMATION

*“I have suggested before that this kind of information (**defective, counterfeit, or mis-used components**) should be collected by all regulators and shared across national borders. Today I will modify my view by saying that this is not merely a good idea, but perhaps even a necessary one.”*

- NRC Commissioner and Former Chairman Dale E. Klein at the IAEA General Conference Senior Regulators Meeting, Vienna, Austria, October 3, 2008

EXISTING DATA SOURCES

- 10 CFR Part 21 Reports - NRC
- **OpE**: Operating Experience - NRC
- **OpEx**: Operating Experience - INPO
- **EPIX**: Equipment Performance & Information Exchange-INPO
- **GIDEP**: Government Industry Data Exchange Program
- **SCI**: Suspect & Counterfeit Items – DOE
- **EPLS**: Excluded Parties List System - GAO
- **CPSC**: Consumer Protection Safety Commission
- **TheTrueCosts.org**: U.S. COC
- **STOPFAKES.gov**: Joint Effort hosted by DOC
- **IRS**: Incident Reporting System – IAEA
- **ConE**: Construction Experience - NRC
- **ConX**: Construction Experience - NEA

WHAT IS THE NRC DOING?

- 1. Issuance of IN 2008-04, “Counterfeit Parts Supplied To Nuclear Power Plants” (April 7, 2008)**
- 2. Developing the NRC’s CSFI community (June 3, 2009)**
- 3. Continuing to enhance the NRC’s Vendor Inspection program**
- 4. Working with NUPIC to enhance their audit process**
- 5. Working with EPRI’s Technical Advisory Group (TAG) on CSFI**
- 6. Cooperating with DHS’s Anti-Counterfeiting task forces**
- 7. Improving communications and sharing information with the nuclear community**
 - Presentations to NUPIC, Feb. 2008, Jun. 2008 and Jun. 2009**
 - Presentation to EPRI JUTG, Sept. 2009**

SUMMARY

- The threat of CFSI is real – and growing
- Industry vulnerabilities are growing also
- Maintain a robust CSFI program
 - Refer to current NRC guidance
 - Protect your Intellectual Property (IP)
 - Incorporate Best Practices
- Build and maintain a solid CSFI community
 - Federal agencies
 - Industry communities



QUESTIONS

Daniel Pasquale

Sr. Operations Engineer
Quality and Vendor Branch
Office of New Reactors

Daniel.Pasquale@nrc.gov

