

MINOR CHANGE REQUEST FORM

MCR NO. **MCR-QA-020,R2-003**

(e.g., MCR-ENG-021,R0-001)

The Minor Change Request (MCR) Form is to be used to process Minor, or in some necessary cases, Urgent or Temporary changes to PPPL Lab-wide procedures). The MCR should be used when changes are:

- 1) **minor** and do not warrant further SME review;
- 2) **urgent** and cannot wait the 2-4 week period for further SME review; or
- 3) **temporary**, to revert to original state by a given expiration date (must be within 6 months).

For questions about definitions of “minor,” “urgent,” and “temporary” changes, please review Lab-wide Procedure GEN-001, **Development, Review, and Approval of Lab-wide Documents**.

Person Requesting Change: **Adolfo Amaya**

Phone Ext: **2305**

Department Name: **Q&A**

Document Number: **QA-020**

Revision No.: **__**

Document Title: **Suspect & Counterfeit Items Control and Dispositioning**

Reason for change:

Remove obsolete references to the S&CI committee; update links and locations for information and training; update contact information

Change description: (Summarize and attach changed pages, with changes clearly indicated)

Changes on pages 2 and 3 to eliminate references to Procurement site and S&CI committee (no longer active and policy no longer exists)
Updated QA server link for information
Training link updated to reflect LMS location

1. Does this change significantly alter the intent or scope of the document? YES: **__** NO: **X**

2. Does this change significantly impact ES&H? YES: **__** NO: **X**

If 1 or 2 is **YES**, explain why the changes should not be submitted as a revision:

Place a check mark next to the appropriate type of change request:

- Minor change? **__X__**
- Urgent change? (revision must follow within 2 weeks) **__**
- Temporary change? **__**

If “temporary change” is checked, provide expiration date, allowing document to revert to original state (must be within 6 months): **__**

Management System Owner/Designee Approval

Date

Head, PACM/Designee

Date

Release/Effective date of this MCR: **8/26/2019**

Subject: Suspect & Counterfeit Items Control and Dispositioning	Effective Date: March 11, 2016	Initiated by: Head, Quality & Assurance
	Supersedes: Rev. 1, dated February 21, 2014	Approved: Director

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Management System (Primary): 12.00 Quality Assurance
Management System Owner: Head, Quality & Assurance
Management Process: 12.01 Quality Assurance Program
Process Owner: Head, Quality & Assurance
Sub Process: 12.01.11 Suspect/ Counterfeit Item (S/CI Prevention Process)
Sub Process Owner: Head, Quality & Assurance
Subject Matter Experts (SMEs): Head, Quality & Assurance; Procurement QA Engineers

APPLICABILITY

This procedure applies to all PPPL equipment, projects and facilities on C- and D-Sites, and to any items provided by PPPL to external collaborators.

Definitions

Suspect Items A part or item whose documentation, appearance, performance, material, or other characteristics may have been knowingly misrepresented by the vendor, supplier, distributor, or other manufacturer. (Further investigation is required to determine if suspect items are, in fact, counterfeit).

Counterfeit Parts A part or item whose documentation, appearance, performance, material, or other characteristics are knowingly misrepresented by the vendor, supplier, distributor, or manufacturer.

Introduction

There is a long history of suspect and counterfeit items (S/CI) being provided in industry and the problem continues to grow. Counterfeit bolts are the most well-known S/CI, but other common examples include flanges, fittings, struts, used or refurbished electrical components, and other items supplied as new. There is potential that virtually any type of part or equipment could be S/CI. All PPPL personnel must be watchful for S/CI in the workplace. This procedure establishes the practices to ensure that S/CI are identified and dispositioned to remove them from applications that compromise safety and to prevent their reuse.

PPPL has instituted the measures described in this procedure to:

- Prevent introduction of suspect or counterfeit items (S/CI) to PPPL, and
- Control and disposition S/CI that is found.

PPPL S/CI has determined restrictions and controls meant to keep S/CI from coming on-site as part of legitimate PPPL procurements. Categories of items where S/CI are most likely and where procurement controls are appropriate have been identified. These categories and the associated restrictions are detailed in Attachment 1 and summarized at: <https://pppl->

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intranet.princeton.edu/resources/quality-assurance/pqa-information/suspect-parts-information.

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Reference Documents

QA-005	Control of Nonconformances
GEN-006	Occurrence Reporting and Processing of Operations Information
ES-MECH-007	Hoisting and Rigging Standard

Procedure for Identifying and Dispositioning S/CI**Responsibility****Action**

Any Individual

1. Identifies Suspect/Counterfeit Item(s).
Bolts listed on the DOE Headmark List (attached) are presumed to be counterfeit.

For S/CI identification information contact QA or access the QA web page:<https://pppl-intranet.princeton.edu/resources/quality-assurance/pqa-information/suspect-parts-information> MCR-QA-020,R2-003

2. Promptly contacts QA (qa@pppl.gov) and informs their supervisor. MCR-QA-020,R2-003
3. Tags and/or segregates items as practicable.
Unless adverse conditions would result, the Supervisor/Cog/TA, as appropriate, removes in-service equipment from service.

QA

4. Verifies that the item is S/CI.
5. Notifies PPPL ORPS Facility Manager of a possible occurrence per GEN-006. If this is determined to be an occurrence, the ORPS Facility Manager will follow GEN-006 notification requirements.
6. Notifies Germantown DOE Office of Inspector General (OIG) using contact information at: <http://energy.gov/ig/contact-us/field-offices>.
7. Issues a Nonconformance Report, per procedure QA-005, to document the discovery and the final disposition of the S/CI.

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- Cognizant Individual 8. Determines whether items will be promptly removed and replaced (“REPAIR” on the NCR) or marked and left in place (“USE-AS-IS” on the NCR). An engineering evaluation, documented on the NCR, is required for decisions to leave S/CI in-place for lift equipment and the Lift Manager must concur.

S/CI left in place must be clearly and permanently marked (typically with red paint or ink). Where practicable, signage shall indicate that the painted items are S/CI and that QA must be notified prior to removal. The marking method shall be documented on the NCR. Bolts left in place, shall be replaced when they are next removed for other purposes (maintenance, disassembly, etc.). High strength fasteners removed from other equipment shall not be used in for any other application requiring high strength fasteners.

The disposition must be documented on or with the NCR. Engineering evaluations must indicate the name of the engineer performing the evaluation and should have the engineer’s signature. However, the disposition process need not be delayed while the NCR is being written or otherwise processed. For example, a suspect bolt in the load path can be removed and replaced on the spot, minimizing time that the equipment is out-of-service. Similarly, when there is no doubt that suspect bolts are not in the load path, they can be marked and the equipment can be returned to service while the paperwork is being processed.

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9. Delivers all removed S/CI to QA for ultimate disposal.

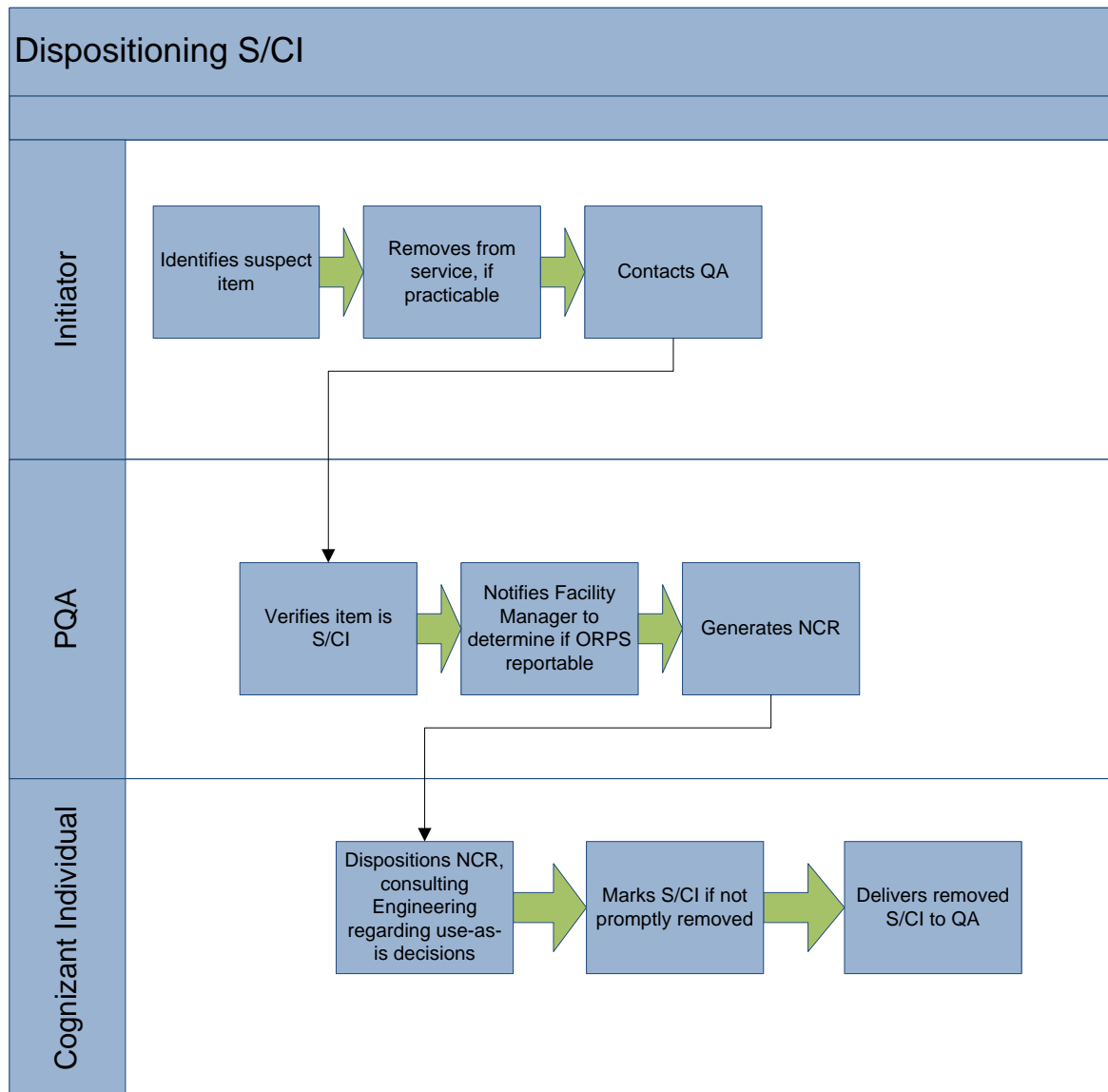
TRAINING

Personnel specifying, ordering, receiving, inspecting, or installing hardware or electrical items that are susceptible to counterfeiting must take Suspect/Counterfeit Items Awareness Training. Managers are responsible to see that the training is taken. The training has been developed by QA and is available online at the Princeton University Learning Center at: Training by Department > PPPL > Quality Assurance. The training must be renewed every three years.

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RECORDS REQUIREMENTS SPECIFIC TO THIS PROCEDURE

S/CI discoveries are documented on Nonconformance Reports, which are processed and retained in accordance with the nonconformance procedure, QA-005. No other unique record requirements are imposed by this procedure.



Attachments

- 1 S/CI Information
- 2 DOE Headmark List

Potential S/CI*:

- High Strength Fasteners – those rated at 100,000 psi (or greater) Tensile

Strength and those that require grade marking in accordance with the applicable national standards (Some examples are: SAE grades 5 & 8, 8.2; ASTM grades A193, A325, A490, A453, F593 (and many others); and Metric fasteners (grades 8.8 & 10.9).

- Molded Case Circuit Breakers (and similar electrical equipment)
- Code-stamped Components (Flanges, Valves, etc.)
- Hoisting and Rigging (Lift) Equipment - *Procurement and inspection requirements are in the Hoisting and Rigging Program*
- Ratchet tie-down assemblies - (These are often assembled using high strength fasteners).

* Incidents involving semiconductors are also frequently reported by DOE labs. Suspect semiconductors are usually specialty items for the defense and aerospace industries and elaborate equipment is often needed to detect the counterfeits. At PPPL we rely on inspection by experienced personnel and board testing to detect such items before they become part of systems.

All of these items are required to be purchased through the requisition system. Procurement Cards (P-Cards) cannot be used for these items.

- 1) All requisitions for these items **MUST** specify Receipt Inspection.
- 2) All requisitions (including spare parts requisitions) for electrical materials (e.g., Molded case circuit breakers or larger circuit breaker components) **MUST**:
 - a. Require AC Power review;
 - b. Contain a note from the Requisitioner requiring that "Materials must be directly delivered from, and be traceable to, an OEM-authorized distributor."
- 3) All requisitions for high strength fasteners (including fastener material) or for code-stamped components **MUST**:
 - a. Require the manufacturer's Certified Material Test Reports (CMTRs) showing actual chemical & physical properties.
 - b. Require traceable markings tying the product to the CMTRs.

Note on Grade B8 fasteners:

ASTM standards allow A320, Grade B8 and A193, Grade B8 fasteners to have raised or recessed manufacturer's and grade markings. This means that a manufacturer's mark may be raised, formed into the head, while the B8 grade marking is hand-stamped afterwards. Although this marking approach is acceptable to the standard, it opens the door to fraudulent hand stamping of fasteners without the required properties. The Industrial Fastener Institute has warned about such incidents.

Requisitions for Grade B8 fasteners should stipulate "no hand stamped grade markings." The Requisitioner, however, should be aware that compliant fasteners may not be readily available

and so they may have to waive this requirement. In this case, testing of a few sample pieces is recommended to assure that the hand-stamped grade is valid.

Note on “Metric Fasteners”:

ISO 898-1 standard, section 10 “Marking”, identifies when and how manufacture’s symbols should be applied to metric fasteners. A manufacture’s identification mark shall be included during the manufacturing process on all fasteners marked with a property class symbol (i.e. 8.8 & 10.9). Marking Details for Metric Fasteners:

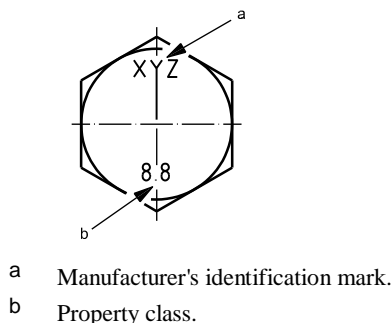


Figure 1 - Example of Marking

For High Strength fasteners procured as part of manufactured products, not custom fabrications for PPPL, the cognizant individual shall have receipt inspection done to ensure that the products do not contain known S/CI. For these items, the material certification requirement does not apply unless the cognizant individual deems it appropriate due to safety concerns associated with the product. Otherwise, it is presumed that the manufacturer has in some way qualified their design and used appropriate parts.

High strength fasteners removed from other equipment shall not be used in for any other application requiring high strength fasteners.

DOE Headmark List

ANY BOLT ON THIS LIST SHOULD BE TREATED AS DEFECTIVE WITHOUT FURTHER TESTING.



ALL GRADE 5 AND GRADE 8 FASTENERS OF FOREIGN ORIGIN WHICH DO NOT BEAR ANY MANUFACTURERS' HEADMARKS:





GRADE 5
















GRADE 8

GRADE 5 FASTENERS WITH THE FOLLOWING MANUFACTURERS' HEADMARKS:

MARK	MANUFACTURER	MARK	MANUFACTURER
 J	Jinn Her (TW)	 KS	Kosaka Kogyo (JP)




GRADE 8 FASTENERS WITH THE FOLLOWING MANUFACTURERS' HEADMARKS:

MARK	MANUFACTURER	MARK	MANUFACTURER
 A	Asahi Mfg (JP)	 KS	Kosaka Kogyo (JP)
 NF	Nippon Fasteners (JP)	 RT	Takai Ltd (JP)
 H	Hinomoto Metal (JP)	 FM	Fastener Co of Japan (JP)
 M	Minamida Sleybo (JP)	 KY	Kyoel Mfg (JP)
 MS	Minato Kogyo (JP)	 J	Jinn Her (TW)
 Hollow Triangle	Infasca (CA TW JP YU) (Greater than 1/2 inch dia.)		
 E	Dalai (JP)	 UNV	Unytite (JP)

GRADE 8.2 FASTENERS WITH THE FOLLOWING HEADMARKS:

MARK	MANUFACTURER
 KS	Kosaka Kogyo (JP)

GRADE A325 FASTENERS (BENNETT DENVER TARGET ONLY) WITH THE FOLLOWING HEADMARKS:

MARK	MANUFACTURER
Type 1  A325 KS	Kosaka Kogyo (JP)
Type 2  A325 KS	
Type 3  A325 KS	

Key: CA-Canada, JP-Japan, TW-Taiwan, YU-Yugoslavia