SUSPECT/COUNTERFEIT ITEM COMPONENT AND PRODUCT INFORMATION

Approved as of January 1, 2017

This Department of Energy (DOE) Handbook provides information to assist DOE sites in preventing suspect/counterfeit items (S/CI) from entering the DOE complex. Specifically, it provides information on identifying, reporting and dispositioning S/CIs, and includes examples of S/CIs. Internal and external resources have been referenced for additional information.

The following is a reproduction of Attachment 3, IN 898-70, Supplement 1, April 26, 1990:

1. General Items

• Spare/replacement kits from vendors other than the Original Equipment;

• Manufacture;

• Elastomer – "O" rings, seals;

• Lubricants;

• Adhesives;

• Electrical connectors;

• Metal Framing components (i.e. flat plate fittings, post bases, beam clamps, channel); and

• Flanges.

2. Electrical Items

• Motor control centers - complete units;

• Components;

• Starters;

• Starting coils;

• Contactors;

• Contactor kits;

• Overload relays;

• Starter control relays;

• Overload heaters;

- Protective/control relays;
- DC power supplies/chargers;
- AC inverters;
- Current/potential transformers;
- Exciters/regulators;
- Bus transfers/auto bus transfers;
- Motor generators sets;
- Generators;
- Rewindable motors;
- Printed circuit boards;
- Fuses;
- Splices Vacuum breakers (BWR);
- Indicators/controllers;
- Panel lights/switches;
- Transmitters/instrument switches; and
- Isolation devices.

3. Mechanical Items

- Welding Materials;
- Rod;
- Wire;
- Flux;
- Small piping products;
- Small structural members (pipe supports);
- Spent fuel pool cooling pumps and similar pumps;
- Ultimate heat sink supply manual valves and similar valves; and
- Valves.

4. Diesel Generator Items

- Diesel speed governors;

• Diesel fuel transfer pumps; and

• Diesel injection pumps.

5. Lifting Materials

• Slings;

• Hooks;

• Cables; and

• Shackles.

Indicators of Suspect Components

The list reproduced here has been updated with information through June 2000. The authors have also added additional information through June 2013.

11.2.1 Indications of Suspect Piping and Piping Components (Including mechanical and metal products)

• Used component appearance;

• Unusual or inadequate packaging;

• Foreign newspapers used as packaging;

• Scratches on component outer surface;

• Evidence of tampering;

• Components with no markings;

• Pitting or corrosion;

• External weld or heat indications;

• Questionable or meaningless numbers;

• Typed labels;

• Evidence of hand-made parts;

• Painted stainless steel;

• Ferrous metals that are clean and bright;

• Excess wire brushing or painting;

• Ground off casting marks with stamped marks in the vicinity;

• Ground off logo mark;

• Signs of weld repairs;

• Threads showing evidence of wear or dressing;

• Inconsistency between labels;

• Old or worn nameplates;

• Nameplates that look newer than the component;

• Missing manufacturer's standard markings and logos;

• Overlapping stamps;

• Different colors of the same part;

• Traces of Prussian Blue;

• No specification number;

• No size designation;

• Missing pressure class rating;

• Other missing designations per the specification;

• Evidence of re-stamping;

• Deficient welds on chemical/nuclear shipping casks;

• Thinner than expected;

• Parts identified as "China" only, or "Korea," "Mexico," "Thailand," "India"; and

• Excess certification logos (i.e. "UL," "FM," "CGA," "AGA") all on one valve body

– not normal, usually will have one or two logos plus ANSI or ASME.

Indications of Suspect Valves

• Wrench marks on valve packing glands, nuts, and bolts;

• Nameplates attached with screws rather than rivets;

• Poor fit between assembled valve parts;
• Dirty internals;
• Scratched or marred fasteners or packing glands;
• Gate valve: gate off-center when viewed through open end;
• Fresh sand-blasted appearance of valve bodies, eyebolts, fittings, stems;
• Loose or missing fasteners;
• Different types of hand wheels on valves of the same manufacturer;
• Some parts (e.g., hand wheels) look newer than rest of the valve;
• Improper materials (e.g., bronze nut on a stainless stem);
• Post-manufacturing alteration to identification/rating markings;
• Indication of previous joint welding;
• Excessive standards markings (e.g. Underwriter's Laboratory (UL), Factory Mutual (FM), Canadian Gas Association (CGA), American Gas Association (AGA)
• Valves will not open or close, even when wrench applied; and
• Substandard valves mixed in with standard valves (substitution).

Indications of Suspect Specific Valves

Valves produced by the following manufacturers generally have the following acceptable features. If these features are missing, the item should be considered a potential suspect item.

1. Crane Valves

• Body cast or forged markings;
• Crane name;
• Pressure rating;
• Pattern number;
• Nameplate Information:

- Made from stainless steel (silver color) with black lettering;
- Attached by drive screws OR attached on valve stem underneath handle;
- Valve size pressure class, operating pressure at temperature; and
- Body material.
- Seat material on valve body and valve seat;
- Stem trim material and heat treat conditions;
- Certification data – military specification, if applicable;
- Drawing number Shop Order Number;
- Body cast or forged markings including the name “Crane”;
- Valve class;
- Valve size;
- Grade of steel; and
- Melt number.

2. Powell Valves (Wm. Powell Co.)

- Body cast or forged markings including the name “Powell”;
- Valve class;
- Valve size;
- Grade of steel;
- Melt number;
- Nameplate Information;
- Riveted to valve body OR attached to valve stem underneath handle;
- Attached with single end welded wire (small valves);
- Serial number;
- Valve size;
- Figure number;
- Body style;
- Valve stem, disc, and seat type;
- Strength at temperature;

• Strength at 100°F;
• The Wm. Powell Co. Cin., Oh. Made in U. S. A.;
• Vogt, Henry Machine Co., Inc.; and
• Body cast or forged markings;
• The name “Vogt”;
• Pressure rating;
• Pattern number;
• Size;
• Material specification; and
• Two-code ID – a 3-letter code and a 4-digit code.
• Nameplate Information
• Made from aluminum with electrochemical etched lettering;
• Attached on valve stem underneath handle;
• Valve size;
• Pressure class, operating pressure at temperature;
• Body material;
• Internal seat material or internal H.F.;
• Stem trim material;
• Specification number Drawing Number; and
• Pressure rating.

3. Walworth Valves

• Body Cast or forged markings:
• The name “Walworth”;
• Pressure class;
• Size;
• Heat code; and
• Serial number (stamped).
• Nameplate information:

• Made from aluminum;

• Attached by drive screws;

• Attached to cover at times;

• Valve size;

• Pressure class and operating pressure at temperature;

• Body material;

• Internal seat material;

• Stem trim material and heat treat conditions;

• Figure number;

• Serial number;

• Location of Manufacture; and

• Item code number.

4. Masoneilian - Dresser Valves

• Masoneilian or Worthington Controls stamped on nameplate; and

• MD or Masoneilian on valve body.

Indications of Suspect Electrical Components

a. General Indications

• Screwdriver marks on terminals;

• Different screw types or materials on terminals;

• Handwritten or typed rather than stamped tags;

• Missing tags (usually Nationally Recognized Test Laboratories (NRTL) approval tag);

• Pitted or worn contacts and lugs;

• Not in manufacturer's box or container;

• Signs of paint or smoke;

• Insufficient nameplate information;

• Missing terminals;

• Screws used in place of rivets;

• Body worn or discolored;

• Rough metal edges;

• Scratched or marred surfaces;

• Metal color inconsistencies;

• Modified or re-stamped nameplates;

• Improper fastening of nameplates;

• Plastic parts of different colors;

• Discolored or faded manufacturer's labels;

• Past due calibration stickers (internal and external);

• Broken or damaged solder terminations;

• Broken or damaged termination lugs;

• Contact surfaces that do not mate properly;

• Lubrication that appears to be old;

• Shipping in plain packaging (no manufacturer bar code); and

• Used or damaged parts in new packaging.

b. Specific Indications

1. Molded Case Circuit Breakers

• Handle modified to change ampere rating;

• Style is no longer manufactured;

• Unusual packaging: bulk packaging, generic packages, and cheap appearance;

• Refurbisher's name on breaker;

• Broken seal between halves;

• Contradicting amperage ratings; and

• Use of silicone sealant.

2. Fuses

• Label missing or weathered; and

• Wear marks on bases.

3. Power (Draw out) Circuit Breakers

• Different color or shape of over current devices; and

• Suspicious- looking auxiliary trip devices.

4. Motor Starters with poor fitting or wrong voltage rated operating coil.

5. Motor Control Centers

• Breakers that are not easily opened or closed with compartment door closed; and

• Exposed buss work with compartment doors open.

6. Electromechanical Relays with poor or loose-fitting relays

7. Potter-Brumfield Relay

• Sloppy coil lead solder joints;

• Painted relay base grommets (normally clean);

• Terminal strips fastened with eyelets;

• Painted rivets fastening the terminal strip to the relay housing;

• Termination screws in brown paper bags (should be in clear, heat-sealed plastic bags);

• Use of bubble wrap (plastic with Styrofoam should be used);

• Repainted inner bell surface;

• Missing or inconsistent date codes, inspection stamp, and test stamp;

• Incorrect shaft relay cover clearance, shaft play, and lack of bearing lubricant;

• Tops of rotor shafts painted a color other than black;

• Non-uniform numbers stamped on the contact decks, indicating decks made up from various relays; and

• Incorrect coil.

8. Capacitors

• Polished surfaces scratched or dented;

• Termination lugs scarred;

• Buildup of debris and dirt in termination guards; and

• Plain packaging (no manufacturer bar codes).

Indications of Suspect Documentation and Certification

• Use of correction fluid or correction tape;

• Type style or pitch change is evident;

• Documentation has missing (or illegible) signature, initial, or data;

• Document is excessively faded or unclear;

• Inconsistent technical data;

• Certification or test results are identical between items when normal variations should be expected;

• Document is not traceable to the items procured;

• Technical data are inconsistent with code or standard requirements;

• Documentation is not delivered as required on the purchase order, or in an unusual format;

• Lines on forms are bent, broken, or interrupted indicating that data have been deleted or exchanged by “cut and paste”;

• Handwritten entries are on the same document where typed or pre-printed data exist;

• Data on a single line are located at different heights;

• Product recall;

• Chemical alloy composition totals 100% (or >99.75%) as shown on Certified Material Test Report (CMTR); and

• Heat and lot numbers are same for different materials in same order (i.e., 6010 and 7018 weld wire cannot be manufactured from same heat and lot of material).

Indications of Suspect Stainless Steel Wire Rope

• Lack of or incomplete documentation; and

• Noticeable alteration of documentation (refer to Documentation and Certification section).

Indications of Suspect Lifting Materials

• Original markings ground off and re-stamped;

• Altered markings on identification tags;

• Used appearance of items (i.e. straps appear worn, or hook have indications of previous use);

• Parts identified as “China” only, or “Korea,” “Mexico,” “Thailand,” “India”;

• No or incomplete documentation (refer to Documentation and Certification Section); and

• Red hooks not labeled with Crosby Group markings (“Crosby” or “CG”) Crosby has the Crosby Red Carbon Steel Hook U.S.A. Trademark, Registration #2,108,103.