

# ANALYSIS AND TRENDRING OF SUSPECT/COUNTERFEIT ITEMS AT DEPARTMENT OF ENERGY FACILITIES

CAL ITEMS  
Suspect Head Mark List

GRADE 5 AND GRADE 8 FASTENERS OF  
UNKNOWN ORIGIN WHICH DO NOT BEAR ANY  
MANUFACTURER'S HEAD MARKS:

Grade 5  
GRADE 5 FASTENERS WITH  
MANUFACTURER'S HEAD MARKS:

- J
- A
- NF
- H
- M
- MS
- E

GRADE 8.2 FASTENERS  
HEAD MARKS:

WLL-2T

A325 FASTENERS (BENNETT DENVER  
WITH THE FOLLOWING HEAD

A325 KS



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SUSPECT/COUNTERFEIT ITEMS AT  
DEPARTMENT OF ENERGY FACILITIES**

**April 2004**

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## EXECUTIVE SUMMARY

The Office of Environment, Safety and Health (EH) prepared this report to disseminate information on Department of Energy (DOE) suspect/counterfeit items (S/CI) and defective items (DI) or S/CI-DI. Within EH, the Office of Corporate Performance Assessment (EH-3) routinely collects, screens, disposes, and communicates information on S/CI-DI that could potentially impact operations at DOE facilities.

This semiannual report updates the S/CI report issued in August 2003, and includes data on S/CI events reported in the Occurrence Reporting and Processing System (ORPS) between January 1, 2003 and December 31, 2003. It also includes data on S/CI-DI reported through the Government Industry Data Exchange Program (GIDEP), the Institute for Nuclear Power Operations (INPO), and other sources for the same period. The report provides the DOE complex with general information, trends, and analyses about S/CI-DI issues. Future reports will be issued annually. As described in the report, the following summarizes the current S/CI-DI and related activities for 2003:

- No injuries or near misses resulted from S/CI-DI within the DOE complex.
- EH-3 issued two Safety Alerts in 2003. One related to defective electrical relays, and the other described potential problems with hydrostatic testing of gas cylinders. One response was received on the first alert positively identifying a defective electrical relay, and three responses were received with positive identifications on the second alert. Future alerts will request that sites respond whether or not they discover items described in the alert.
- The 22 S/CI events that were reported through ORPS during the last six months of 2003 brought the total for 2003 to 48.
- While the number of S/CI reports has decreased since the peak of 144 in 1994, the number of S/CI events reported has remained relatively constant (approximately 50 per year) since 2001.
- From January 1991 through December 2002, 92 percent of the S/CI ORPS reports pertained to fasteners. During 2003, 82 percent of the S/CI ORPS reports pertained to fasteners.
- Of the 59 S/CI that were identified to the DOE complex during 2003, 48 were identified from ORPS, 10 from GIDEP, and one from a DOE e-mail notification.
- In 2003, 116 defective items were identified to the DOE complex. ORPS identified 14, GIDEP 41, INPO 59, and other sources identified 2.
- No follow-up ORPS reports resulted from GIDEP and INPO items posted on the EH S/CI-DI website in 2003.
- EH-3's achievements in 2003 in implementing the S/CI-DI process included the following.
  - Developed an S/CI-DI process guide
  - Conducted in-house training on the S/CI-DI process in July 2003
  - Conducted an S/CI-DI workshop and videoconference in October 2003
  - Launched the S/CI-DI website (<http://www.eh.doe.gov/paa/sci>). One hundred DOE Federal and contractor employees were registered for access at the end of 2003.



- Conducted a causal analysis for the Department's response to the Temperform USA investigation regarding suspect heat-treated aluminum.
- Improved communications with Office of Inspector General management and field contacts on S/CI investigations.
- EH-3's goals for the S/CI-DI program in 2004 are described below.
  - Conduct an annual self-assessment and implement recommendations.
  - Revise DOE Order 414.1A, *Quality Assurance*, with updates to the accompanying guidance document.
  - Conduct DOE complex-wide S/CI training.
  - Continue to search GIDEP, INPO, ORPS, and other data sources to identify S/CI-DI information with potential impacts to DOE operations, collect data and conduct investigations as needed, and convey important information to the complex.

This report is also accessible on the S/CI-DI website.



# 1.0 INTRODUCTION

The Office of Environment, Safety and Health (EH) prepared this report to disseminate information on Department of Energy (DOE) suspect/counterfeit items (S/CI) and defective items (DI) or S/CI-DI. The Office of Corporate Performance Assessment (EH-3) routinely collects, screens, and disseminates information on S/CI-DI that could potentially impact operations at DOE facilities.

## 1.1 Background

This report updates S/CI summary information and associated trends for newly identified S/CI-DI at DOE facilities, and provides historical data and trending information regarding S/CI-DI discovery and disposition. EH-3 searched the Occurrence Reporting and Processing System (ORPS) database and other data sources to identify S/CI-DI. These added sources included, but were not limited to, the Government-Industry Data Exchange Program (GIDEP) and the Institute for Nuclear Operations (INPO). EH-3 informed the DOE complex of all S/CI-DI identified from these sources that it deemed potentially applicable to DOE operations, and used the information from the search results to trend and analyze S/CI-DI for calendar year 2003.

## 1.2 2003 Accomplishments

- EH-3 assumed corporate responsibility for the Department's S/CI process, developing a process guide and manual to provide direction on collecting, screening, dispositioning, and communicating information on S/CI that could potentially impact operations at DOE facilities.
- EH-3 analyzed events, causal factors, and root causes pertaining to the Temperform USA issue in response to a Defense Nuclear Facilities Safety Board (DNFSB) recommendation to ensure that the Department's S/CI identification, notification, and investigation process is effective.
- EH-3 launched the S/CI-DI website as a mechanism for communicating potential S/CI-DI information complex-wide. The website can be accessed at <http://www.eh.doe.gov/paa/sci>, and registration is available to DOE Federal and contractor employees.
- A Department-wide televideoconference presented the new DOE S/CI-DI process and promoted discussion on various perspectives on S/CI-DI activities.

## 1.3 2004 Goals

EH-3's 2004 goals for the S/CI-DI process are described below.

- Continue data source research from GIDEP, INPO, ORPS, and other sources, conveying important S/CI-DI information to the DOE complex, collecting data, and conducting investigations as needed.
- Perform an annual self-assessment and implement recommendations.
- Revise DOE O 414.1A, *Quality Assurance*, with updates to the accompanying guidance document.
- Initiate site reviews to confirm field implementation of the S/CI-DI process.

- Conduct complex-wide S/CI training starting in spring 2004.
- Continue to identify improvements to the S/CI-DI process and implement appropriate changes.

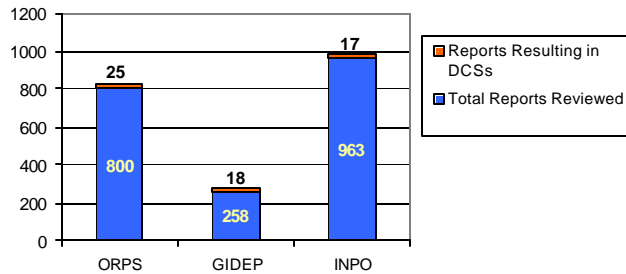
## 2.0 CURRENT STATUS OF S/CI-DI IN DOE FACILITIES

The number of S/CI events reported complex-wide in ORPS has remained relatively constant over the past three years at an average of 50 per year. In 2003, 48 S/CI were reported in ORPS, bringing the total number of S/CI reported in ORPS to 750 since the S/CI reporting requirements were established in 1994.

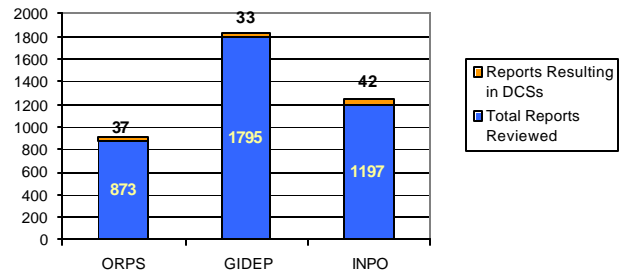
### 2.1 Sources of S/CI-DI

EH-3 reviews potential S/CI-DI events from ORPS, GIDEP, and INPO for those with potential applicability to DOE operations. Events are reviewed, evaluated, and communicated as described in Section 2.7, *DOE S/CI-DI Process*. Figures 1 and 2 compare the total number of events reviewed from all sources during 2003 to those resulting in the generation of a Data Collection Sheet (DCS) for complex-wide review. EH-3 generated 114 DCSs during the first six

**Figure 1. Comparison of Total Reports Reviewed to Those Requiring DCSs  
July – December 2003**

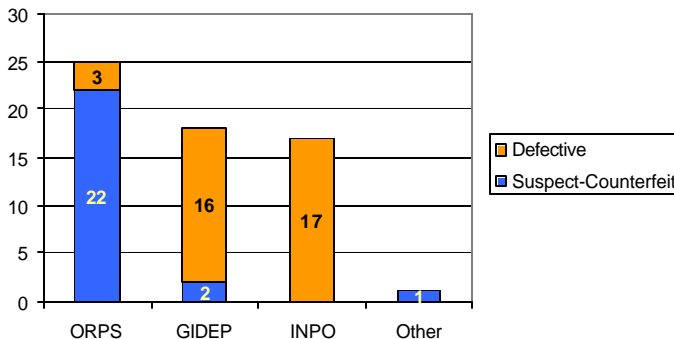


**Figure 2. Comparison of Total Reports Reviewed to Those Requiring DCSs  
January - June 2003**

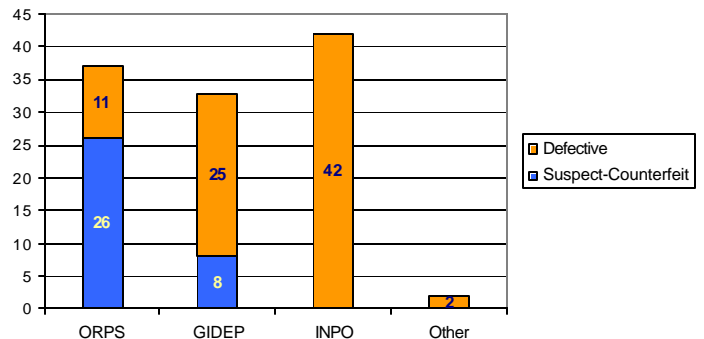


months of 2003, and 61 DCSs during the last six months. EH-3 attributes this drop to its more stringent screening process for determining SC-DI with potential impact on DOE operations. The distribution in DCSs being generated by S/CI-DI reporting source is shown in Figures 3 and 4. During 2003, DCSs were generated for 175 (3 percent) of the total number of 5,886 reports

**Figure 3. S/CI-DI by Reporting Agency  
July - December 2003**



**Figure 4. S/CI-DI by Reporting Agency  
January - June 2003**



reviewed from ORPS, GIDEP, and INPO. EH-3 found that the vast majority of the reports it reviewed and screened were not applicable to DOE facilities.

### **2.1.1 ORPS**

During the first six months of 2003, EH-3 reviewed 873 ORPS reports. Of these, 26 DCSs were generated describing potential S/CI events, and 11 DCSs were generated for potential DI. Most of these DCSs in the first half of the year were communicated to appropriate DOE Federal and contractor employees by the Quality Assurance Working Group (QAWG) via e-mail distribution. When EH-3 assumed responsibility for the DOE S/CI process, the DCSs it generated were posted on the S/CI-DI website for DOE complex notification. The 800 ORPS reports reviewed in the last six months of 2003 resulted in a similar number of DCSs being generated for potential S/CI (22) and defective items (3). These DCSs were all posted on the S/CI-DI website as well, bringing the total of DCSs generated from ORPS reports to 62 during 2003. As would be expected, ORPS identified the majority of all S/CI (81 percent) and the minority of DI (12 percent) reported in 2003.

### **2.1.2 GIDEP**

During the first six months of 2003, EH-3 reviewed 1,795 GIDEP reports, resulting in the generation of 33 DCSs. During the last six months of 2003, EH-3 reviewed only those GIDEP reports that described failure experiences, allowing for a more focused review and screening process. From the 258 GIDEP reports reviewed, 18 DCSs were generated. Two were related to S/CI, and the remaining 16 were on DI. None of the 51 DCSs generated from GIDEP report reviews in 2003 resulted in follow-up events being reported in ORPS.

### **2.1.3 INPO**

During the first six months of 2003, EH-3 reviewed 1,197 INPO reports, from which 42 DCSs were generated. The 963 INPO reports reviewed in the last six months of 2003 resulted in 17 DCSs. Because INPO does not categorize its reports as S/CI, all of the DCSs generated in 2003 related to defective items. Similar to GIDEP, none of the 59 DCSs generated from INPO report reviews in 2003 resulted in follow-up events being reported in ORPS.

### **2.1.4 Source Observations**

The absence of ORPS reports stemming from the posted INPO and GIDEP reviews is unexpected. In 2004, EH-3 will evaluate the causes leading to this result. The data being posted may not be applicable to DOE operations, may not be effectively communicated, or related events may not be reported in ORPS as required. EH will conduct selected site reviews to confirm field implementation of the S/CI-DI process as one step in evaluating this issue.

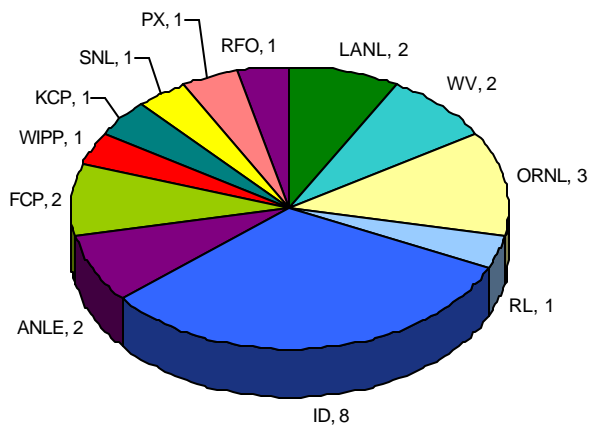
## **2.2 Recent S/CI-DI Occurrences in DOE**

DOE policy requires S/CI-DI events to be reported through ORPS. This allows the data to be analyzed and used for lessons learned and process improvement. Events reported in the last six months are categorized in this section by location found (site), status of use, and item type.

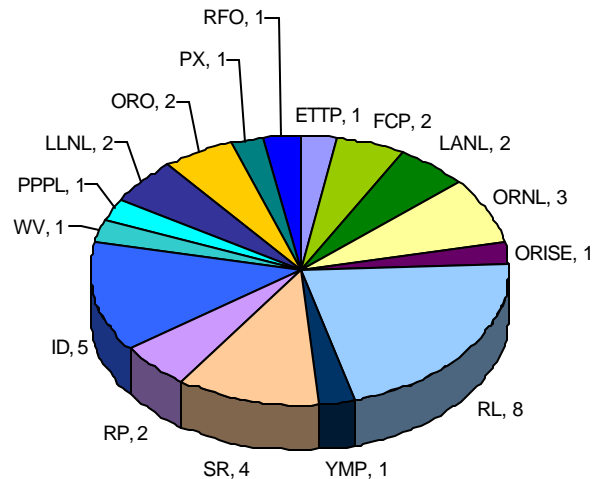
## 2.2.1 Distribution of Recent S/CI-DI by Operations/Field Office

The distribution of S/CI-DI for the last six months of 2003 by Operations/Field Offices was as follows: Idaho Operations Office (ID) 36%; Albuquerque Operations Office (ALO) 26%; Ohio Field Office (OH) 17%; Office of River Protection (RP) 13%, Richland Operations Office (RL) 4%; and Oak Ridge Operations Office (ORO) 4%. The remaining offices did not report S/CI-DI. Figure 5 displays these results. Figure 6 illustrates the S/CI-DI by Operations/ Field Office for the first six months of 2003.

**Figure 5. S/CI-DI by Site Office  
July - December 2003**



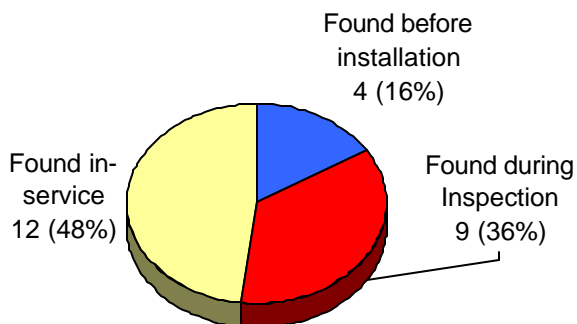
**Figure 6. S/CI-DI by Site Office  
January - June 2003**



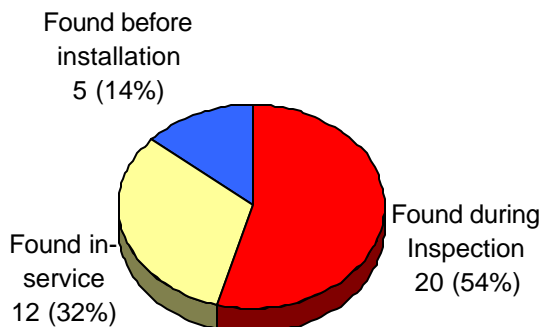
## 2.2.2 Use Status of S/CI-DI When Discovered

S/CI-DI events reported in ORPS were analyzed to determine where S/CI or DI were found in the field. Events have been categorized into three areas: found during receipt inspection, found before installation, and found in-service. During the first six months of 2003, in which 37 S/CI-DI were reported in ORPS, 16, or 43 percent, were found during receipt inspection or before installation, and 20, or 54 percent, were found in-service. During the last six months of 2003, in which 25 S/CI-DI were reported in ORPS, 13, or 52 percent, were found during receipt inspections or before installation, and 12, or 48 percent, were found in-service. The small improvement in finding items before they were committed to service is encouraging, and may reflect awareness efforts such as the October 2003 videoconference. Figures 7 and 8 display where S/CI-DI were found in the field during the first and last six months of 2003 respectively. The data for the first half of 2003 include several ORPS-reported DI that were not reported in the previous period. These are items processed by the QAWG, and increased the number of in-service DI reported.

**Figure 7. S/CI-DI by Found Status (ORPS only), July – December 2003**



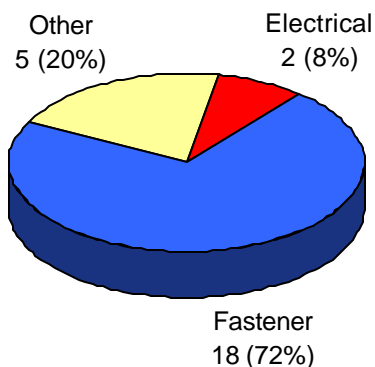
**Figure 8. S/CI-DI by Found Status (ORPS only), January - June 2003**



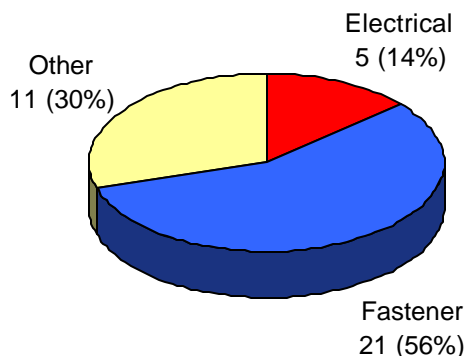
### 2.2.3 Categories of S/CI-DI Found in the Field

As we have seen in previous years, the overwhelming majority of S/CI reported in ORPS comprised bolts in ratchet straps, structures, and in storage. EH-3 attributes the high percentage of fasteners among S/CI reports to the continued personnel awareness of this longstanding issue along with clear and readily accessible identification aids. Figures 9 and 10 categorize the S/CI-

**Figure 9. Categories of S/CI-DI Found (ORPS only), July – December 2003**



**Figure 10. Categories of S/CI-DI Found (ORPS only), January – June 2003**



DI reported in ORPS in 2003 by item type.

Of the 22 ORPS reports identifying S/CI in the last six months of 2003, 18 dealt with fasteners: 16 dealt exclusively with bolts, 1 described suspect cable clamps, and 1 included both suspect bolts and suspect flanges of less-than-specified material thickness. Six of the bolt reports rolled up a number of similar events. Five reports addressed bolts found in storage, including bolts salvaged during disassembly. Seven reports addressed suspect bolts in various structural applications, five reports described suspect bolts in ratchet strap assemblies, and two reports identified suspect bolts in valve bodies. In three reports, fasteners in structural applications were analyzed and dispositioned to “accept as is.”

Four reports addressed S/CI data certifications. Three of these were responses to EH Safety Alert 2003-02, *Potentially Fraudulent Hydrostatic Gas Cylinder Testing Data*. More detail on

these reports is provided in section 2.6. The fourth report identified potentially fraudulent material certifications for stainless steel bar stock. This report and other information from investigative agencies led to the issuance of EH Safety Alert 2004-01. Misrepresentation of testing data is a concern to the Department because it relies on accurate test data to ensure the material is suitable for use in sensitive and essential safety applications.

Three ORPS reports addressed DI. One was a response to EH Safety Alert 2003-1 on defective electric relays. Another report identified a point source vacuum that had been miswired for foreign power sources, which could pose a potential shock hazard. A total of five miswired units were identified at the reporting site, Rocky Flats. The third DI report identified a fire sprinkler head failure.

## 2.3 Operating Experience Summaries

During 2003, EH-3 published two Operating Experience (OE) Summaries with articles related to S/CI-DI. These articles are summarized below.

**OE Summary 2003-05, March 10, 2003, Article #2, *Sharing of Lessons Learned Helps Identify Suspect/Counterfeit Bolts in Tie-Down Straps.*** This article described the discovery of a suspect bolt at the West Valley Demonstration Project (WVDP). A quality assurance (QA) inspector and QA engineer found the suspect bolt on a ratchet-level tiedown strap that was used to secure a container of low-level radioactive waste to a shipping pallet being prepared for shipment to the Nevada Test Site. Site management instituted this inspection practice based on a review of a Hanford-issued lessons-learned report. In an ongoing investigation at WVDP, investigators have identified four additional ratchet-level tiedown straps with suspect/counterfeit bolts.

**OE Summary 2003-20, October 6, 2003, Article #5, *Ideal Industries Recalls Voltage Testers.*** This article was published as a result of a U.S. Consumer Product Safety Commission recall notice that was issued in cooperation with IDEAL Industries in July 2003. The recall affected about 121,000 potentially defective solenoid-type voltage testers and voltage/continuity testers. The testers may short out at high voltage, causing an arc to flash that can injure users and blow out the faceplate. The OE Summary recommended that the use of these testers be discontinued immediately. No ORPS reports were submitted on recalled voltage testers through the end of 2003.

## 2.4 EH Safety Alerts

During the last six months of 2003, EH-3 issued two Safety Alerts.

**Issue Number 2003-01, August 2003, *Potentially Defective Electrical Relays.*** This EH Safety Alert was issued to provide information on potentially defective electrical relays that may impact operations at DOE facilities. Lawrence Berkeley National Laboratory personnel reported (outside ORPS\*) that a number of recently purchased electrical relays had internal defects. These relays are often used in safety interlock systems and control systems for complex

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\* Events of this type are reportable in ORPS in accordance with DOE O 231.1A, *Environment, Safety and Health Reporting*, August 2003.

equipment to indicate SAFE or UNSAFE operating conditions to operators. The relay defects can cause contacts to short and cause intermittent and erratic effects. Depending on how the relay is used, the defect may cause the relay to chatter, or the relay may signal a SAFE operating state, even though an UNSAFE condition may exist. All defective relays found to date are labeled Potter & Brumfield, a division of Tyco Electronics.

As a result of the EH Safety Alert, Argonne National Laboratory – East reported in ORPS (ORPS report number CH-AA-ANLE-ANLE-2004-0001) the discovery of 130 Potter & Brumfield electrical relays in use. Further investigation revealed that all relays installed had been working properly since installation. Division personnel conducted a review and concluded that 1) the relays were not in a critical application; 2) the acquisition of the relays was outside the date codes that have been documented to be defective; and 3) the relays have been in place with a long service time and have been operating successfully. The division will consider replacing the relays during a scheduled shutdown.

**Issue Number 2003-02, September 2003, *Potential Problems with Hydrostatic Testing.*** This EH Safety Alert concerned certifications for hydrostatic testing of gas cylinders. Several DOE sites contracted the supplier and its affiliates to perform hydrostatic testing on gas cylinders that contain gases such as oxygen, nitrogen, argon, compressed air, or breathing air. Most cylinders affected are commonly referred to as “tubes.” These tubes vary in length, but are commonly between 20’ and 40’ in length and arranged on tube trailers.

Hydrostatic testing is to be conducted in accordance with Department of Transportation Hazardous Materials Regulations (HMR) 49 Code of Federal Regulations (CFR) § 180.201. A hydrostatic retest and visual inspection, conducted as prescribed by the HMR, are used to verify the structural integrity of a cylinder. Such tests are to be documented and maintained in verifiable records. Between 1998 and 2001, the supplier’s cylinder retest reports indicate that it marked an undetermined number of cylinders as having been properly tested in accordance with the HMR, although the test apparatus was not calibrated properly at the time and was unavailable for use.

As a result of the EH Safety Alert, improperly tested tube trailers were identified at three DOE facilities as described below.

Los Alamos National Laboratory (LANL) (ORPS report ALO-LA-LANL-LANL-2003-0013) identified 88 improperly tested tube trailers. Each tube trailer held 32 to 36 large-diameter tubes, 20 to 40 ft. long that were used to hold compressed gases. The costs required for recertification were expected to exceed \$1 million in fiscal year 2003 and \$.6 million in fiscal year 2004.

These alerts requested sites to report if the concern was identified at that site. To ensure monitoring of these important safety concerns, future alerts will request that sites respond whether or not they discover items described in the alert.

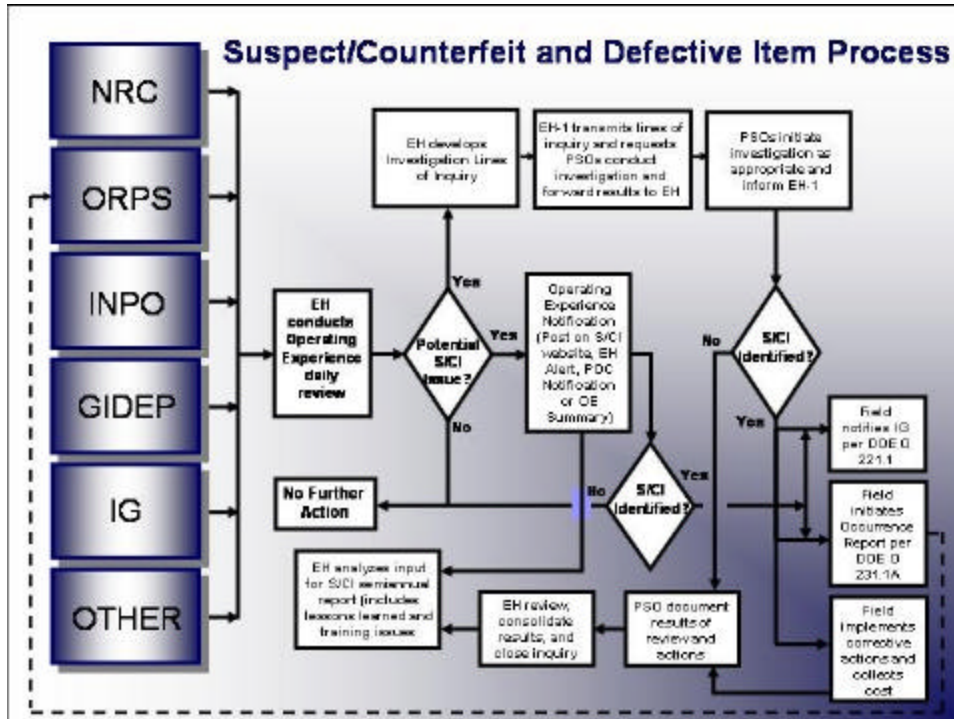
## **2.5 DOE S/CI-DI Process**

In May 2003, EH assumed corporate responsibility for the Department’s S/CI-DI process. EH developed a process guide and manual to provide direction on implementing the S/CI-DI process to collect, screen, disposition, and communicate information on S/CI-DI that could potentially impact operations at DOE facilities. The following is a brief description of the S/CI-DI process as depicted in Figure 11. A more detailed explanation of the entire process is provided in the EH



Process Guide for the Identification and Disposition of Suspect/Counterfeit Items at Department of Energy Facilities. The Process Guide has been posted on the S/CI-DI website at

Figure 11. S/CI-DI Process



<http://www.eh.doe.gov/paa/sci>

**Operating Experience Daily Review** – EH-3 routinely reviews and screens various data sources to identify potential S/CI-DI. These sources of information include, but are not limited to, the following:

- ORPS
- INPO
- GIDEP
- Other sources

**Potential S/CI-DI Issues** – Those SCI-DI issues that are determined to affect more than one Program Secretarial Officer (PSO) or present a significant concern will be elevated to EH-1. Other items of potential concern are documented through the Operating Experience program for review by field and Headquarters points of contact and posting on the S/CI-DI website. An EH Safety Alert may also be issued as a way of notifying potentially affected organizations and to provide guidance or recommendations to deal with the potential issue. If EH-3 determines that the issue does not impact the Department, no further action is taken.

Screening criteria and checklists have been established to assist EH-3 in making this determination. EH-3 may also obtain advice and assistance from other subject matter experts in the Department to assist them in making this determination.

**Operating Experience Notification (EH Safety Alert, Notification, Website Posting, or OE Summary)** – The EH-3 OE Group analyzes potential S/CI issues and documents the results using a DCS. The DCS includes a description of the issue and may include the potential impact on DOE facilities. Depending on the results of the analysis, the information may be provided to the DOE complex using one of several methods: issuance of an EH Safety Alert, a notification may be sent to specific points of contact in the field or at Headquarters, the DCS may be posted on the S/CI-DI website, or an article may be published in the OE Summary. Regardless of how the information is disseminated, field and Headquarters organizations review the information for potential applicability to their own facilities and operations. When an organization identifies an S/CI-DI issue, it submits an ORPS report and notifies the Inspector General (IG). The ORPS Report is then reviewed by the OE Group as part of its daily review of ORPS Reports. If the OE Group determines that the issue is crosscutting and/or of significant concern, it will be elevated to EH-1.

**EH Develops Investigation Lines of Inquiry** – S/CI or DI that are determined to be crosscutting or of significant concern are elevated to EH-1. A support group will be convened as necessary with applicable representatives from the line and the Offices of General Counsel (GC) and IG. The GC and the IG representatives will assist in dealing with sensitive information related to ongoing investigations. This support group will assist EH in developing lines of inquiry to investigate and disposition the S/CI-DI issue. Members of the support group will be designated by their management and will have the means and authority to act on behalf of the organization. Support groups will be formed on an ad-hoc basis, and may consist of representatives from organizations such as: EH (lead), IG, GC, Environmental Management (EM), National Nuclear Security Administration (NNSA), Office of Science, Fossil Energy, and Nuclear Energy

**EH-1 Transmits Lines of Inquiry and Requests PSOs to Conduct Investigation** – EH-1 will send a memorandum to the applicable PSOs describing the issue and requesting an investigation in accordance with the lines of inquiry. This memorandum will also include a request to respond to EH-1 with a plan, schedule for completing the investigation, the results of the investigation, and the PSO evaluation of the results.

**PSOs Initiate Investigation** – PSOs will direct their field organizations to conduct an investigation of the S/CI issue as they deem necessary. They will inform EH-1 of their schedule and activities.

**PSOs Document Results of Review and Actions** – PSOs will evaluate and document the results of their investigation whether an S/CI-DI is identified or not. If S/CI-DI is identified, an ORPS Report is submitted, and the IG notified, per the requirements dictated in the Department's directives. The PSOs also initiate the appropriate corrective measures to remedy the S/CI-DI issue and collect the costs associated with this effort. The documented results of the investigation, including any corrective actions, are forwarded to EH-1 for information.

**EH Reviews, Consolidates Results, and Closes Inquiry** – EH will consolidate the results of the PSO reports and review them for completeness. EH may make recommendations to the PSOs regarding the report results. EH will forward consolidated information such as cost data and other information to the IG or other organizations as appropriate to close out the investigation.

## 2.6 Analysis of Temperform USA Investigation

On August 25, 2003, the Secretary of Energy responded to the DNFSB on the results of the Department's investigation into the potential use of improperly heat-treated aluminum parts, components, or materials supplied by Temperform USA or its vendors. This correspondence also committed EH to review the results of the *Office of Independent Oversight and Performance Assurance [(OA)] Special Study of the Department's Management of Suspect/Counterfeit Items*, perform a causal analysis of the Temperform USA investigation and the Department's S/CI process, and implement corrective actions as appropriate. This report documents the results of this analysis and responds to the OA Special Study recommendations for EH.

A team of individuals from EH, EM, and NNSA analyzed events, causal factors, and root causes of the Temperform USA issue and S/CI process to ensure that the Department's S/CI identification, notification, and investigation process is effective.

The QAWG was responsible at that time for collecting and sharing crosscutting quality assurance information such as S/CI Department-wide. However, the team found that the Department's effectiveness in administering the S/CI process was impeded by DOE's lack of a formal process to:

- implement its Charter and Mission requirements,
- institutionalize S/CI identification, notification, and investigation activities to ensure effective and timely closeout,
- incorporate lessons learned from earlier events such as Solid State Devices, Inc. (SSDI), and
- effectively carry out the responsibilities contained in DOE O 414.1A, *Quality Assurance*, and the QAWG Charter.

Specific to the Temperform USA investigation, the team found that the QAWG used an informal/non-standard mechanism (e.g., e-mail) to communicate significant S/CI information requiring DOE-wide action, and that it lacked the authority to ensure a timely investigation.

The team identified several lessons learned. Corporate-level senior management, rather than a committee, must be accountable with clearly defined roles and responsibilities for S/CI identification, notification, and investigation. The Department needs a formal process to direct the identification, screening, and handling of sensitive information, and to effectively disposition potential S/CI information. DOE employees should be actively involved in screening items for potential DOE applicability from GIDEP and other databases to ensure that S/CI data with restricted access are not overlooked. If a Department-wide investigation is warranted, PSOs must issue formal correspondence with detailed lines of inquiry to initiate and guide operating contractor actions. Senior management must also review and consolidate investigation results to ensure thorough, consistent reporting and closure. This includes reporting results to EH as the corporate S/CI process manager.

The team believes that DOE actions taken over the past several months are adequate to eliminate the shortcomings it identified in the Temperform USA investigation. Actions have been taken or are underway to address the OA Special Study recommendations for EH to ensure an effective S/CI process.

### **3.0 TRAINING**

On July 1, 2003, EH held a training session for its Federal and contractor employees on S/CI awareness. Approximately 40 employees attended this one and one-half hour hands-on training session that presented a variety of actual counterfeit items and compared them to items meeting DOE specifications. The *SCI Awareness Training Manual* is available in the Reference Docs area of the S/CI-DI website (<http://www.eh.doe.gov/paa/sci>) to registered users.

On October 15, 2003, EH held a televideoconference to present various perspectives on S/CI-DI activities. The EH Assistant Secretary opened the conference. The Savannah River Site provided a field perspective, IG provided an inspection and enforcement perspective, GC provided a legal perspective, and the EH-3 Deputy Assistant Secretary and staff introduced the new process for dispositioning S/CI-DI. A demonstration of the S/CI-DI website was also provided. This three and one-half hour conference involved 20 DOE sites across the complex and included about 100 Federal and contractor employees.

EH-3 is scheduling a series of S/CI training sessions across the DOE complex in 2004 and 2005 to educate all personnel involved in S/CI-DI activities at DOE sites and to provide updates on new information. Three separate training modules have been developed for craftspeople, management, and procurement and inspection personnel to emphasize each group's specific role in implementing the S/CI-DI process.

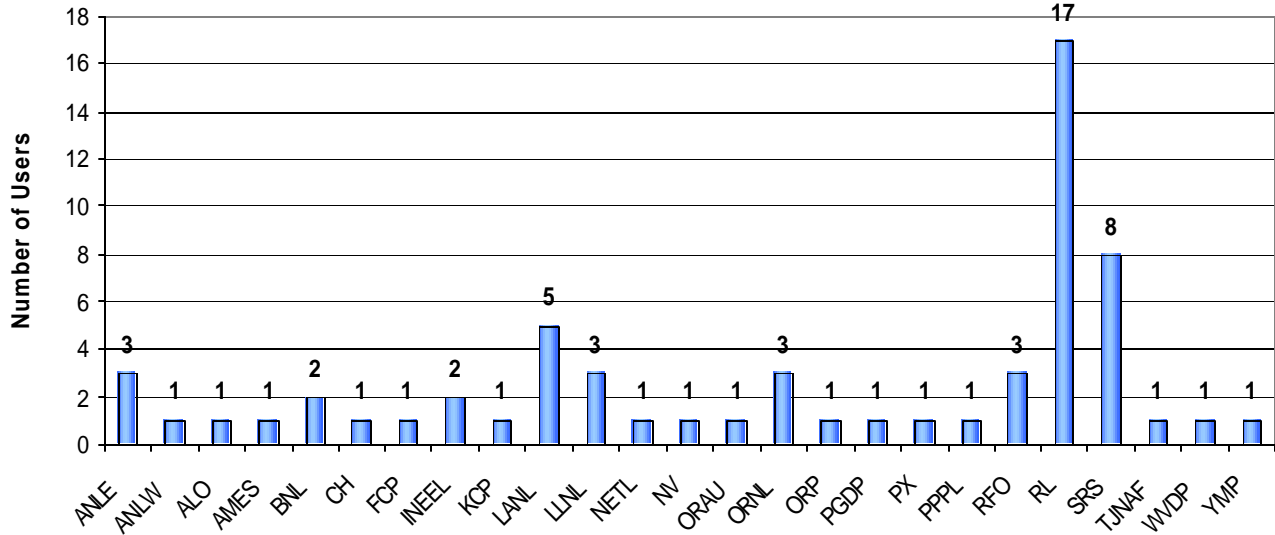
### **4.0 S/CI-DI WEBSITE**

To facilitate communication of S/CI-DI information to DOE and contractor employees, EH-3 maintains the S/CI-DI website (<http://www.eh.doe.gov/paa/sci>). Users must register for a password to gain access to this information. Each DCS generated is posted to the website under S/CI or DI, and is archived (but still retrievable) after six months. New items are highlighted, and the site features topical search capability.

DCSs generated from ORPS reports contain the information taken from the initial report. Because of this, EH-3 checks final ORPS reports and updates information on the website as necessary.

Figures 12 and 13 below represent the number of registered users having access to the password-protected areas of the S/CI-DI website. As of January 2004, there were 100 registered users.

**Figure 12. DOE Sites with Registered Users for the EH S/CI-DI Website by Facility**



**Figure 13. Number of DOE and Non-DOE S/CI-DI Registered Website Users by HQ Program and Field Federal/Contractor Staff**

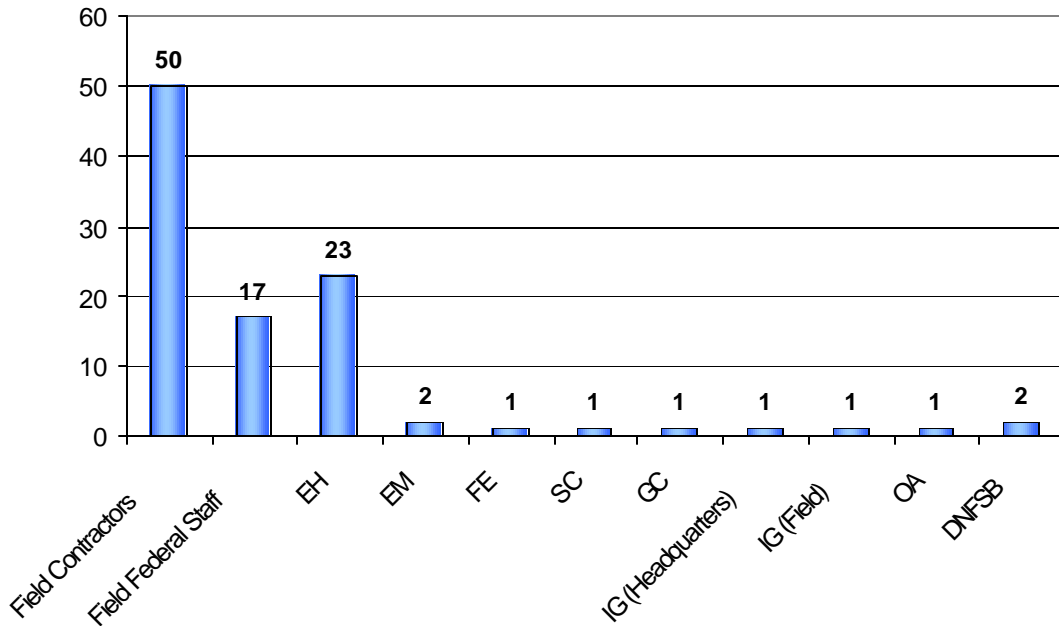
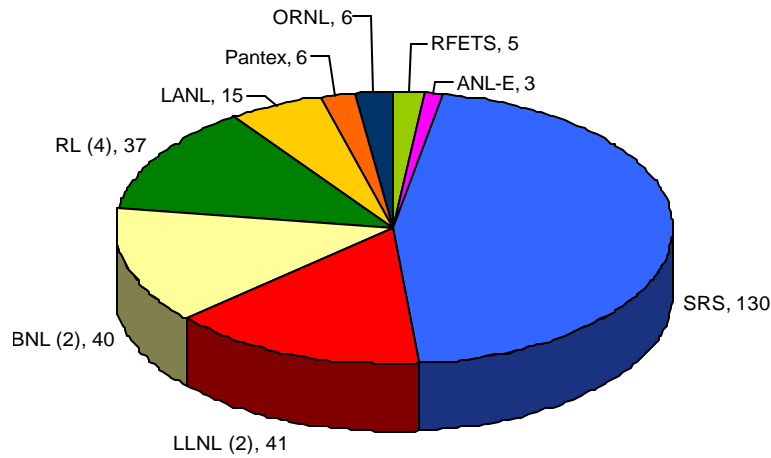


Figure 14 below displays the DOE sites that accessed website and the number of sessions during the five-month period from startup in September 2003 through January 2004. During this period, 9 of the 25 registered field elements have conducted sessions to read or download information.

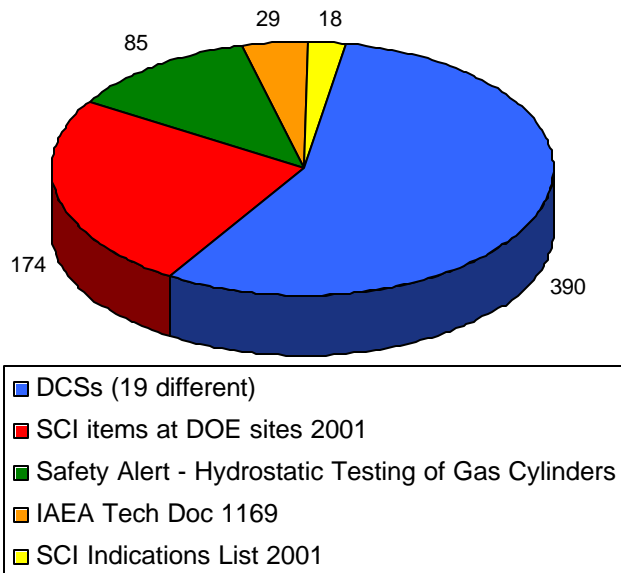
**Figure 14. Sites Conducting at Least 3 User Sessions on the S/CI-DI Website September 2003 and January 2004**



**Note:** Numbers in parentheses in the legend represent more than one person accessing the website during the timeframe

Figure 15 below describes the most downloaded documents from the website between September 2003 and January 2004. Of the 390 downloads of 19 discrete DCSs downloaded during this period, downloads per DCS ranged between 14 and 35, with an average of 21 downloads for all

**Figure 15. Most Downloaded Documents from the S/CI-DI Website September 2003- January 2004**



DCSs.

## APPENDIX A. ACRONYMS

ALO	Albuquerque Operations Office
CFR	Code of Federal Regulations
DCS	Data Collection Sheet
DI	Defective Item
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
EH	Office of Environment, Safety and Health
EH-3	Office of Corporate Performance Assessment
EM	Office of Environmental Management
GC	Office of General Counsel
GIDEP	Government-Industry Data Exchange Program
HMR	Hazardous Materials Regulations
IG	Office of the Inspector General
ID	Idaho Operations Office
INPO	Institute of Nuclear Power Operations
LANL	Los Alamos National Laboratory
NNSA	National Nuclear Security Administration
OA	Office of Independent Oversight and Performance Assurance
OE	Operating Experience
OH	Ohio Field Office
ORO	Oak Ridge Operations Office
ORPS	Occurrence Reporting and Processing System
PSO	Program Secretarial Officer
QA	Quality Assurance
QAWG	Quality Assurance Working Group
RL	Richland Operations Office
RP	Hanford Office of River Protection
S/CI	Suspect/Counterfeit Item
WVDP	West Valley Demonstration Project



## APPENDIX B. DEFINITIONS

- Counterfeit (Part or Item):** A counterfeit item is a suspect item that is a copy or substitute without legal right or authority to do so or one whose material, performance, or characteristics are knowingly misrepresented by the vendor, supplier, distributor, or manufacturer. An item that does not conform to established requirements is not normally considered an S/CI if the nonconformity results from one or more of the following conditions, which should be controlled by site procedures as nonconforming items: defects resulting from inadequate design or production quality control; damage during shipping, handling, or storage; improper installation; deterioration during service; degradation during removal; failure resulting from aging or misapplication; or other controllable causes. (Reference: DOE G 440.1-6, *Implementation Guide for use with Suspect/Counterfeit Items Requirements of DOE O 440.1*, Worker Protection Management; 10 CFR 830.120; and DOE O 414.1A, *Quality Assurance*, July 2001).
- Defective:** A defective item or material is any item or material that does not meet the commercial standard or procurement requirements as defined by catalogues, proposals, procurement specifications, design specifications, testing requirements, contracts, or the like. It does not include parts or services that fail or are otherwise found to be inadequate because of random failures or errors within the accepted reliability level (Reference: DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, August 2003).
- Event:** Something significant and real-time that happens (e.g., pipe break, valve failure, loss of power, environmental spill, earthquake, tornado, flood) (Reference: DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, August 2003).
- Occurrence:** One or more (i.e., recurring) events or conditions that adversely affect, or may adversely affect, DOE (including NNSA) or contractor personnel, the public, property, the environment, or the DOE mission (Reference: DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, August 2003).

**Safety System:**

A safety system is a nuclear facility structure, system, or component, including a primary environmental monitor or portion of a process system, whose failure could adversely affect the environment or safety and health of the public as identified by safety analyses (Reference: DOE Order 5480.30, *Nuclear Reactor Safety Design Criteria*, Change 1, March 2001).

**Suspect (Part or Item):**

A suspect item is one in which there is an indication by visual inspection, testing, or other information that it may not conform to established Government- or industry-accepted specifications or national consensus standards (Reference: DOE G 440.1-6, *Implementation Guide for use with Suspect/Counterfeit Items Requirements of DOE O 440.1*, Worker Protection Management; 10 CFR 830.120; and DOE 414.1A.6C, *Quality Assurance*, July 2001).

## APPENDIX C. SUSPECT INDICATIONS LIST

Lockheed Martin Idaho Technologies Company published LMITCO Internal Report INEL-95/227, *Guidelines for Identifying Suspect/Counterfeit Material*, September 1995. INEL-95-227 includes a comprehensive tabulation of suspect indications. The table is reproduced here and has been updated with information through December 2001.

Components with the following indications are considered suspect.

### I. PIPING AND PIPING COMPONENTS (INCLUDING MECHANICAL AND METAL PRODUCTS)

#### A. General Indications:

- 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 manufacturers 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
- Markings not legible
- Evidence of restamping
- Deficient welds on chemical/nuclear shipping casks
- Thinner than expected
- Parts identified as “China” only

**B. General Valve Indications:**

- 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 sandblasted appearance of valve bodies, eye bolts 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 the rest of the valve
- Improper material (e.g., bronze nut on a stainless stem)
- Post-manufacturing alteration to identification/rating markings
- Indication of previous joint welding

**C. Specific Valve Indications:**

Valves produced by the following manufacturers generally have the following features and are considered suspect if they are missing these features.

**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
  - 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 (SO#)
    - Body cast or forged markings including the name “Crane”
    - Valve class
    - Valve size
    - Grade of steel
    - Melt number

**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.:**

- Body cast or forged markings:
  - The name “Vogt”
  - Pressure rating
  - Pattern number
  - Size
  - Material specification
  - Two code ID - 3-letter code and a 4-digit code
- Nameplate Information:
  - Made from aluminum with electro-chemical 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
  - Pressure rating

**Walworth Valves:**

- Body cast or forged markings:
  - The name “Walworth”
  - Pressure class
  - Size
  - Heat code
  - 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 or H.F.
  - Stem trim material and heat treat conditions
  - Figure number
  - Serial number
  - Location of manufacture
  - Item code number

**Masoneilian - Dresser Valves:**

- Masoneilian or Worthington Controls stamped on nameplate
- MN or Masoneilian on valve body

**Watts Valves:**

- Marked as FBV-1
- Made in Taiwan
- Certification Marks are: UL, CGA, 2G, AGA, FM

**II. 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 UL 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 restamped 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)

**B. Specific Indications:**

**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

**Fuses:**

- Label missing or weathered
- Wear marks on bases

**Power (Draw Out) Circuit Breakers:**

- Different color or shape of over current devices
- Suspicious-looking auxiliary trip devices

**Motor Starters:**

- Poor fitting or wrong voltage rated operating coil

**Motor Control Centers:**

- Breakers that are not easily opened or closed with compartment door closed
- Exposed buss work with compartment doors open

**Electromechanical Relays:**

- Poor or loose fitting relays

**Potter-Brumfield Relay:**

- Sloppy coil lead solder joints
- Painted relay base grommets (normally clear)
- 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
- Incorrect coil (i.e., 125 VDC relay with 200 VDC coil)

**Capacitors:**

- Polished surfaces scratched or dented
- Termination lugs scarred
- Buildup of debris and dirt in termination guards
- Plain packaging (no manufacturer bar codes)

**III. FASTENERS**

**A. General Indications:**

- No manufacturer's or grade mark (unless certified to a specification not requiring marking)
- Evidence of machining marks
- Poor thread form, evidence of wear, or dressing
- Head marks shown on the Suspect Fastener Head Mark List
- Foreign manufacturer not meeting Public Law 101-592
- No markings for nuts or washers packaged with labels indicating that they were manufactured to a code or MILSPEC, which requires marking
- Head markings are marred, missing, or appear to have been altered
- Head markings are inconsistent with a heat/lot
- Double stamping
- Metric and SAE stamping

**V. DOCUMENTATION AND CERTIFICATION:**

**A. General Indications:**

- 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 is 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

#### **IV. STAINLESS STEEL WIRE ROPE:**

##### **A. General Indications:**

- None, or incomplete documentation.

#### **V. PRESSURE TRANSMITTERS:**

##### **A. General Indications:**

- The bellows body had dimple marks on it as if it had been clamped tightly in a vise.
- An internal relay normally factory set at 9 psi was set at 17 psi.
- An internal nozzle was clogged with dirt and rust.
- An internal bellows had scratch marks on it as if someone had attempted to pry it out with a screwdriver or other tool.

## **APPENDIX D. EXAMPLES OF SUSPECT/COUNTERFEIT (S/CI) ITEMS FOUND AT DOE SITES**

The following photographic inventory of suspect items replaces the 1997 *S/CI List from Internal Report INEL-95/227* from the previous edition of this report. It highlights the recent discoveries at DOE and many of the S/CI found at DOE sites. This document can be viewed or downloaded from the Reference Docs area on the S/CI-DI website (<http://www.eh.doe.gov/paa/sci>). The document *Suspect/Counterfeit Items Identified at DOE Facilities* provides additional photographs of S/CI not shown below, and is also found at this website.

**Comparison of 1/2" Lever Handle with  
check low pressure gas valve- Plug style**

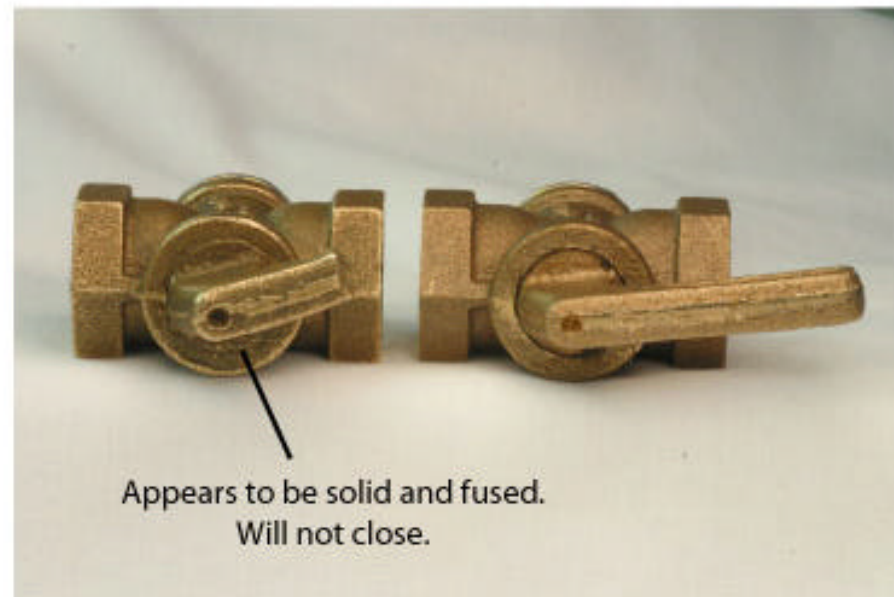
Left- Counterfeit  
Markup similar to  
McDonald

Right- Good  
A.Y. McDonald



Left- Counterfeit

Right- Good



1/2" Forged CSA Ball Gas Valve- Good

UL logo  
(Underwriter's  
Laboratory)



CSA logo  
(Canadian  
Standards  
Association)





**1/2" Forged CSA Ball Gas Valve  
Good**

Top View

McDonald Logo

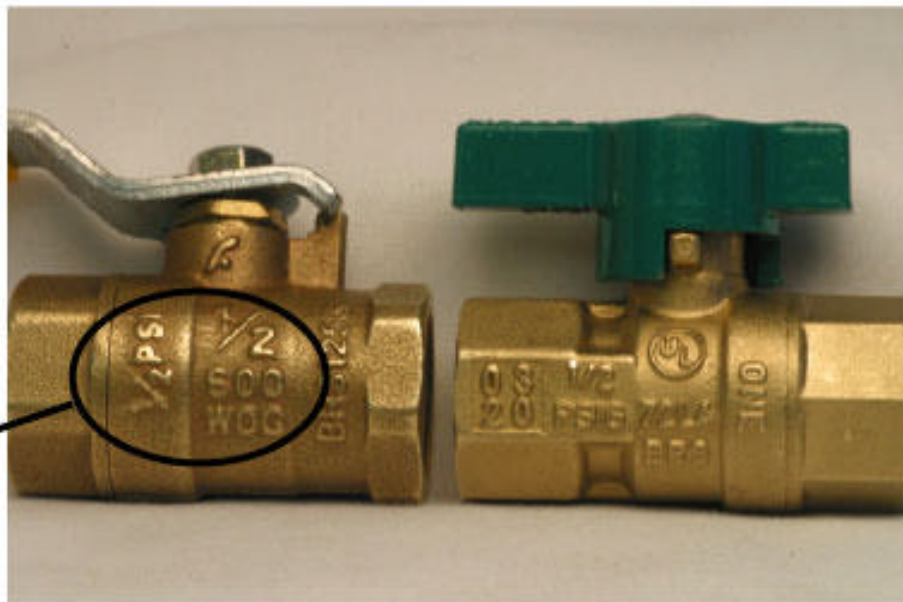


**Comparison between two 1/2" Forged CSA  
Ball Gas Valves**

Left- Counterfeit

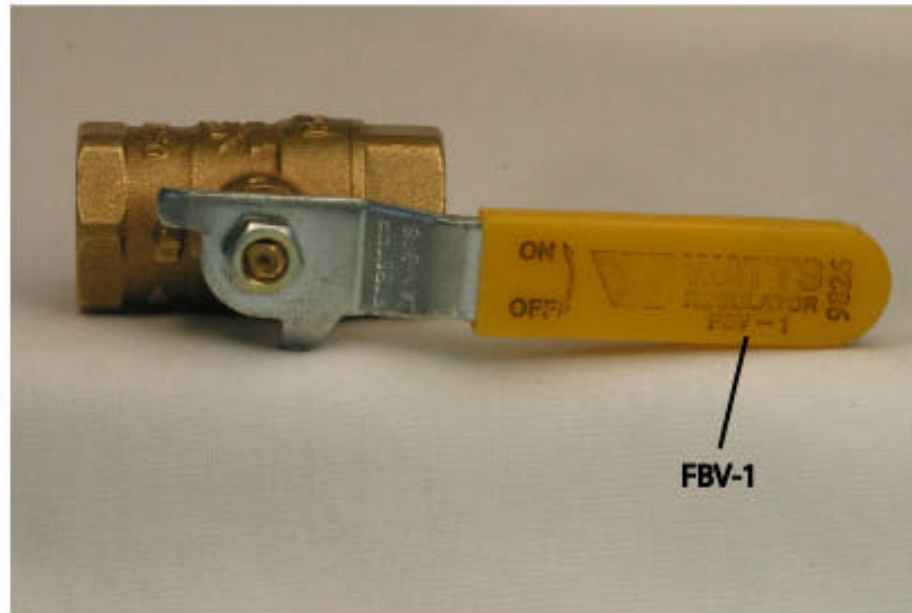
Right- Good

Conflicting information  
1/2 PSI - 600 WOG



**1/2" Forged Ball Gas Valves  
Counterfeit**

Handle marked Watts Regulator, FBV-1.  
Watts doesn't manufacture a FBV-1 series valve.



Taiwan stamped on the back of handle.  
Watts doesn't have a facility in Taiwan.

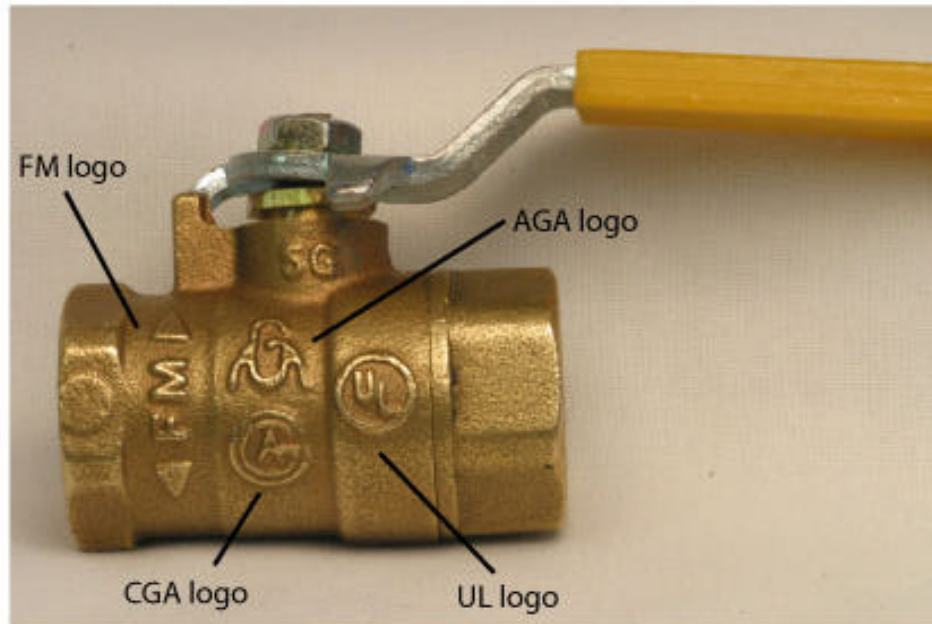


## 1/2" Forged Ball Gas Valves Counterfeits

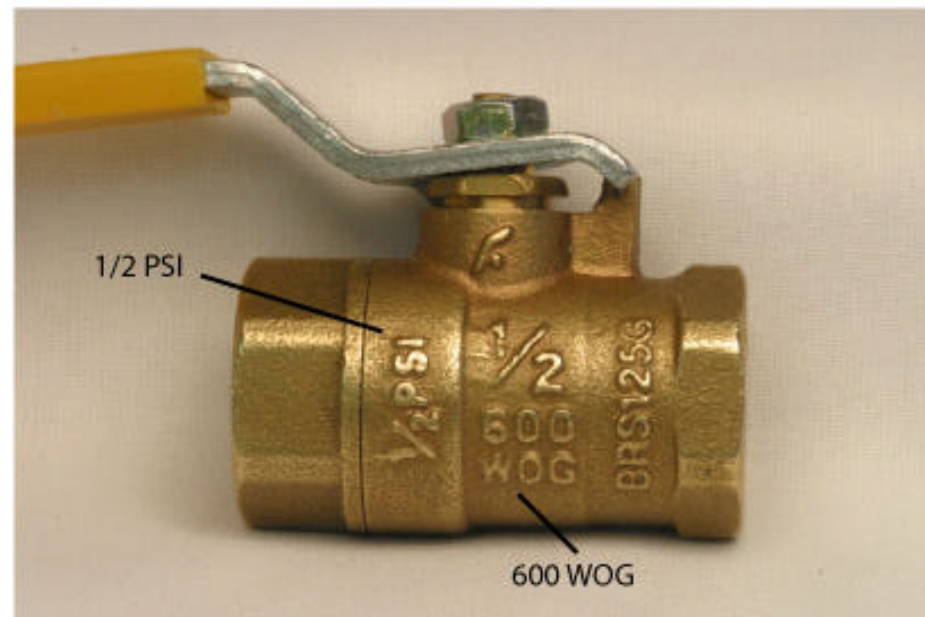
Four logos:

- FM (Factory Mutual)
- AGA (American Gas Association)
- CGA (Canadian Gas Association)
- UL (Underwriters Laboratory)

Watts distributes only to UL and CGA



1/2 PSI and 600 WOG markings



**Comparison of two 1" Lever Handle with check low pressure gas valves- Plug style**

Left- Counterfeit  
Will not close; appears fused.

Right- Good



**Comparison of markings**

Left- Counterfeit  
CII (Coalition of Indian Industries) marking

Right- Good  
McDonald marking





**Comparison of three valves**  
**All foreign by indicators on valves**  
Top- Good  
Middle- Counterfeit  
Bottom- Good

McDonald manufacturer  
Clear manufacturer per standards



Unknown manufacturer

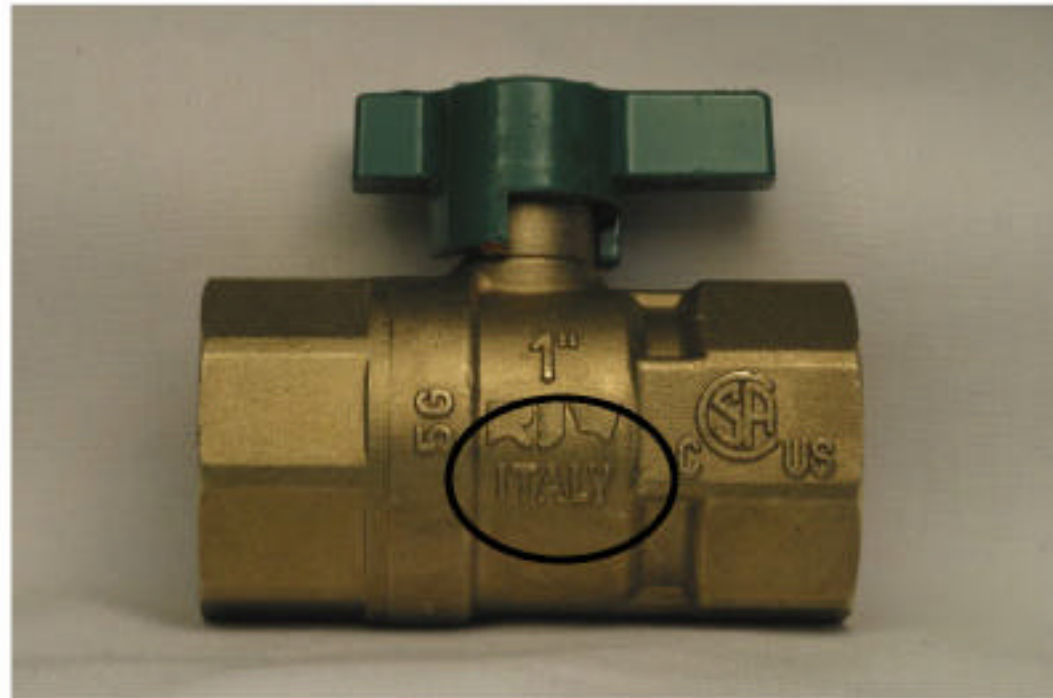


McDonald manufacturer  
Clear manufacturer per standards



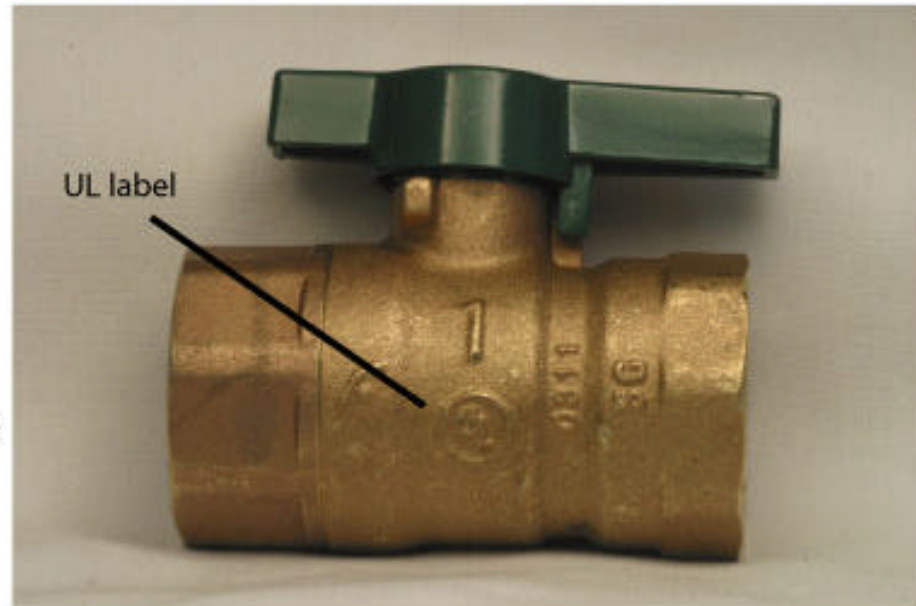
**1" Forged Ball Gas Valve  
Good**

McDonald valve manufactured in Italy.  
Refer to page 7 for comparison



**1" Forged Ball Gas Valve  
Good**

McDonald valve manufactured in Taiwan.  
UL (Underwriter's Laboratory) label marking  
Refer to page 7 for comparison



McDonald valve manufactured in Taiwan.  
opposite side view  
Refer to page 7 for comparison



**1" Forged Ball Gas Valve  
Counterfeit**

Unknown manufacturer  
1/2 PSI marking  
Represented as new  
No manufacturer marking  
Refer to page 7 for comparison



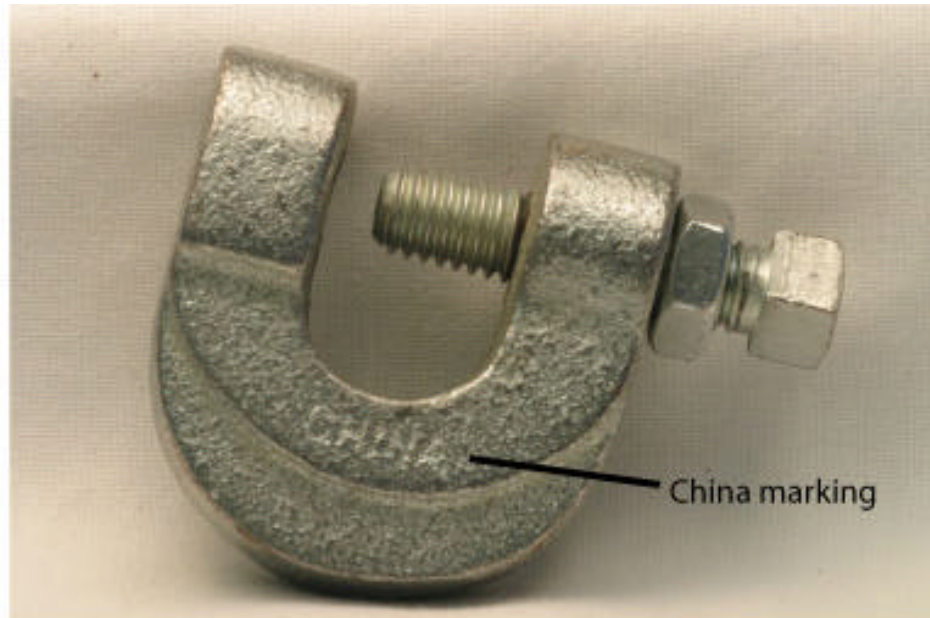
Unknown manufacturer  
Opposite side view  
Refer to page 7 for comparison





**Zinc Coated Beam Clamp  
Counterfelt**

Product ordered domestic.  
Label on box indicated domestic.  
All products inside marked with "China."  
No manufacturing name or logo on part.  
Supplied by a B-Line distributor.



**Beam Clamp  
Counterfelt**

No manufacturing name or logo on part.  
No part number or size.



**GE Molded Case Circuit Breaker  
Counterfeit**

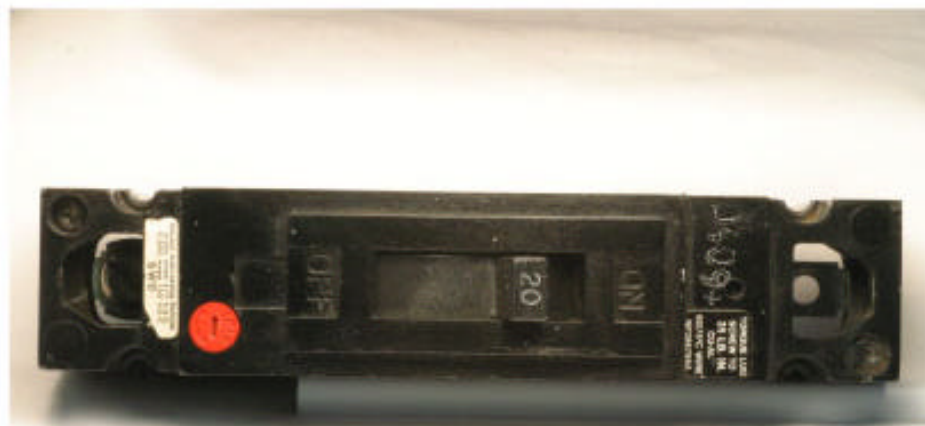
**End view**

Label marked General Electric and "GE".  
Manufacturer stopped marking with  
both indicators over 20 years ago.  
Label very worn.

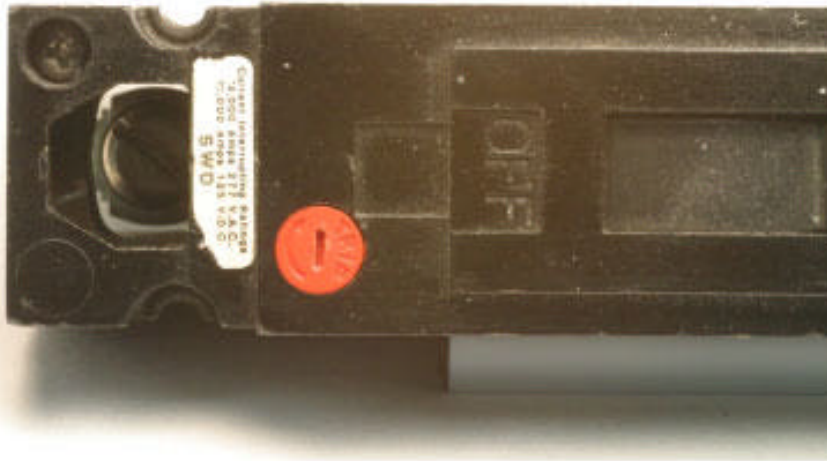


**Top view**

Represented as being  
new in condition shown.



### GE Molded Case Circuit Breaker Counterfeit



Sold as new by supplier.  
Indications of being used or refurbished.  
Label worn and torn.



Screw hole  
tampered with

Potting material in bottom screw hole tampered with,  
should be smooth and even with surface of case.  
Appears dirty and worn.  
Represented as being new in the condition above.





**Comparison of two Latching Eye Hooks  
Both Counterfeit**



**Represented as being new in condition shown  
Appearance very worn.  
Is correct manufacturer markings for orange hook.**



**Red color is Crosby Group Inc. trademark - patented color.  
Represented as being new in condition shown above.  
Appearance very worn.**

**Swivel Hook - Red  
Counterfeit**

Color of hook is RED. Crosby Group Inc. has the patent, trademark registration for the color RED in the United States.



Hook received from Crosby distributor and represented as being Crosby. Marking on hook "ELD" not "CG" or "Crosby" - Crosby markings.





1198  
**the Crosby Group, Inc.**

GENERAL OFFICES  
2801 DAWSON ROAD (74110-6040)  
P.O. BOX 3128  
TULSA, OKLAHOMA 74101-3128  
TELEPHONE 918-834-4611  
CROSBY FAX NO. 918-834-9447

**JAMES A. CHRISTOPHER**  
DIRECTOR TECHNICAL SERVICE

November 2, 2000

Ken Brandt  
Los Alamos National Laboratory  
P.O. Box 1663  
P949  
Los Alamos, New Mexico 87545

**RE:** Red Swivel Hook with forged ELD letters

Dear Ken:

From your description the referenced hook is not a Crosby product.

This hook should not be expected to perform the same in use as the Crosby S-322 Red Carbon Steel Swivel Hook.

We have enclosed a copy of The Crosby Red Carbon Steel Hook U.S.A. Trademark, Registration # 2,108,103.

Anyone importing red carbon steel hooks into the U.S.A. for sale, or offer to sell is violating Crosby's Intellectual Property Rights.

Sincerely,

**THE CROSBY GROUP, INC.**

*James A. Christopher*  
James A. Christopher

ja/c

Enclosures

products of uncompromising quality . . .  
CROSBY Clips & Fittings, LEBUS Load Binders, McKISSICK Blocks & Sheaves, CROSBY-WESTERN Blocks, NATIONAL Swaging Systems  
Plants and facilities in: Jacksonville, Arkansas - Los Angeles, California - Atlanta, Georgia - Chicago, Illinois - Tulsa, Oklahoma - Harrisburg, Pennsylvania  
Dallas, Texas - Longview, Texas - Seattle, Washington - Toronto (Brampton), Ontario - Batsley, England - Mechelen (Fulda), Belgium - Cergy St. Christophe, France

PART OF THE  KRI GROUP OF COMPANIES

Int. Cl.: 6

Prior U.S. Cls.: 2, 12, 13, 14, 23, 25 and 50

Reg. No. 2,108,103

**United States Patent and Trademark Office** Registered Oct. 28, 1997

**TRADEMARK  
PRINCIPAL REGISTER**



CROSBY GROUP, INC., THE (DELAWARE CORPORATION)  
2801 DAWSON ROAD  
TULSA, OK 74103128

FOR: EYE HOOKS, SWIVEL HOOKS, GRAB HOOKS AND SLIP HOOKS. ALL MADE OF CARBON STEEL, IN CLASS 6 (U.S. CLS. 2, 12, 13, 14, 23, 25 AND 50).

FIRST USE 4-0-1969; IN COMMERCE 4-0-1960.

OWNER OF U.S. REG. NOS. 156,609 AND 1,822,312.

THE DRAWING IS LINED FOR THE COLOR RED.

THE MARK CONSISTS OF THE COLOR RED USED TO COVER THE GOODS. THE PORTION OF THE DRAWING SHOWN IN BROKEN LINES IS TO SHOW THE POSITIONING OF THE MARK AND NO CLAIM IS MADE TO THE DESIGN OF THE GOODS. SEC. 2(F).

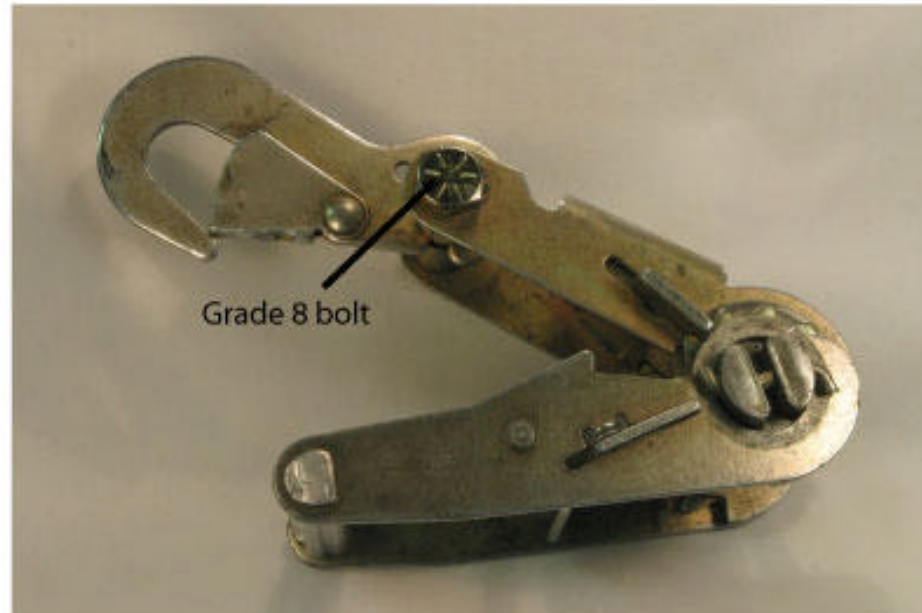
SER. NO. 74-628,866, FILED 2-2-1995.

TERESA M. RUFF, EXAMINING ATTORNEY



**Ratchet tie-down without strap  
Counterfeit**

**Bolt in ratchet is a Grade 8 with  
manufacturer marking, which is on the  
DOE Suspect/Counterfeit Head mark list.**



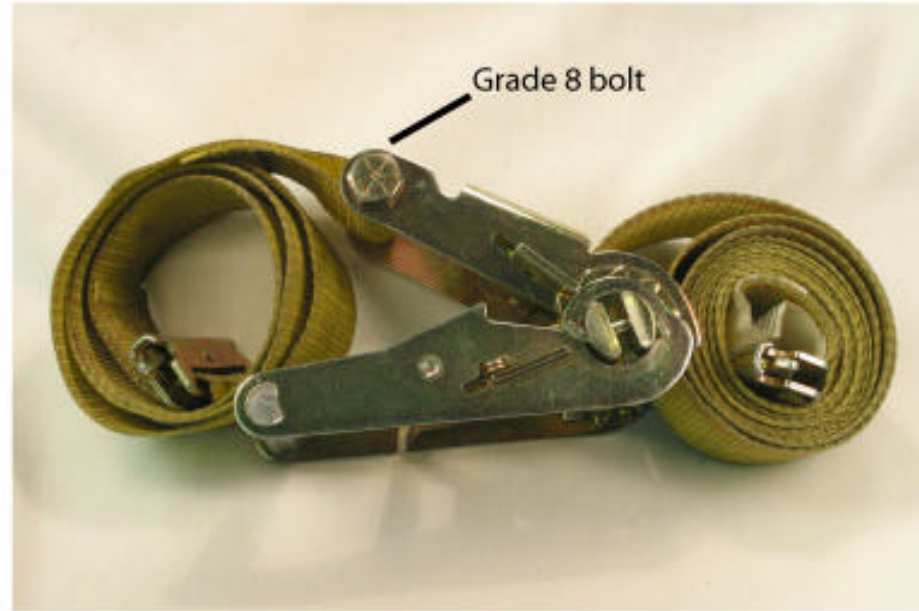
Close-up of Grade 8 bolt.





**Ratchet Strap Tie-Down  
Counterfeit**

**Bolt in ratchet is a Grade 8 with a marking of "H," which is on the DOE Suspect/Counterfeit Head Mark List.**



Close-up of Grade 8 bolt.



**Shackle  
Counterfeit**

No manufacturer markings.  
"China" is marked, however this is  
unacceptable as standard requires the  
**manufacturer's name or**



**Spring Clip  
Counterfeit**

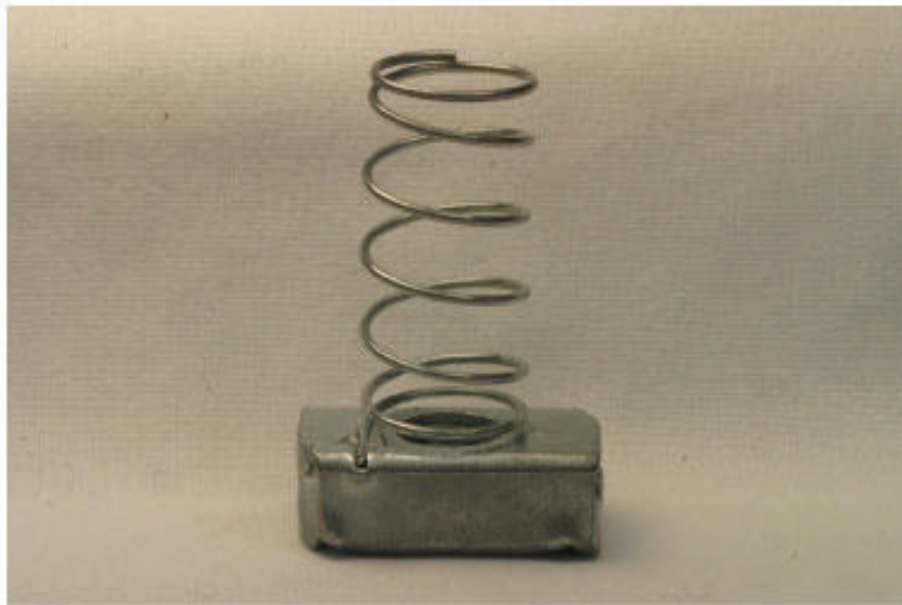
Bottom view

No manufacturer's name or logo on part.  
No part numbers or size.



Side view

No manufacturer's name or logo on part.  
No part numbers or size.



### Square Washers/Spacers

Received in the same box together.

Left- Has proper markings. Good.

Right - Has no markings. Unknown



### Stainless Steel "T" Weldolet Counterfeit

Grind marks where information was removed.  
New information stamped on.





## Comparisons of Square D Breakers

Left- Counterfeit

No amperage rating on end of switch.  
Original number filed off.

Middle & Right- Good

20 amp rating clearly displayed.



## Square D Breakers Both Good

Clearly marked amperage rating on end of switch.  
-Rating on top switch is silk screened.  
(Square D started silk screen process in 2000.)  
-Rating on bottom switch is molded.



## Square D Circuit Breakers

### Counterfeit

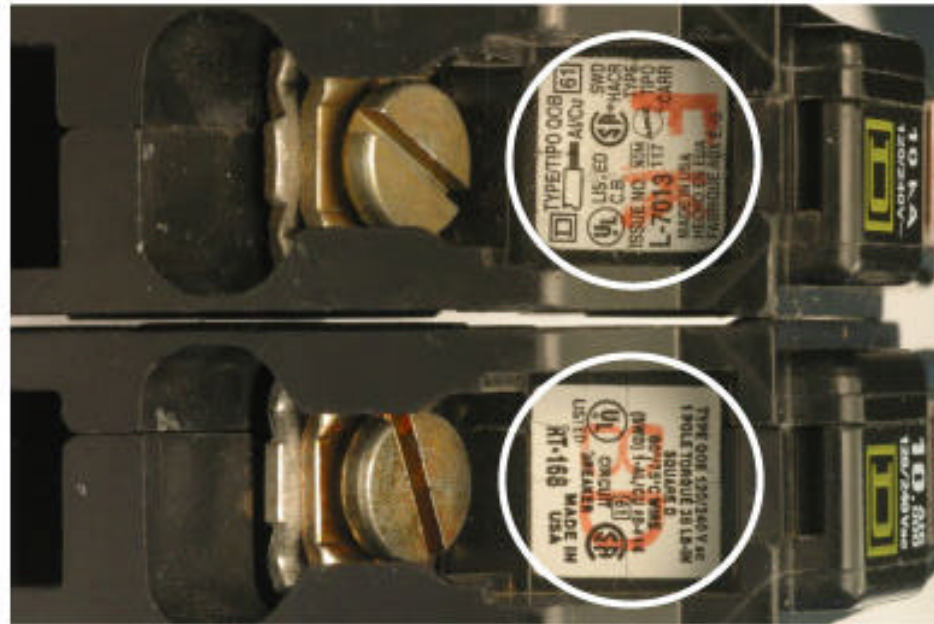
Copied UL label taped on side of breaker.



### Good Breakers

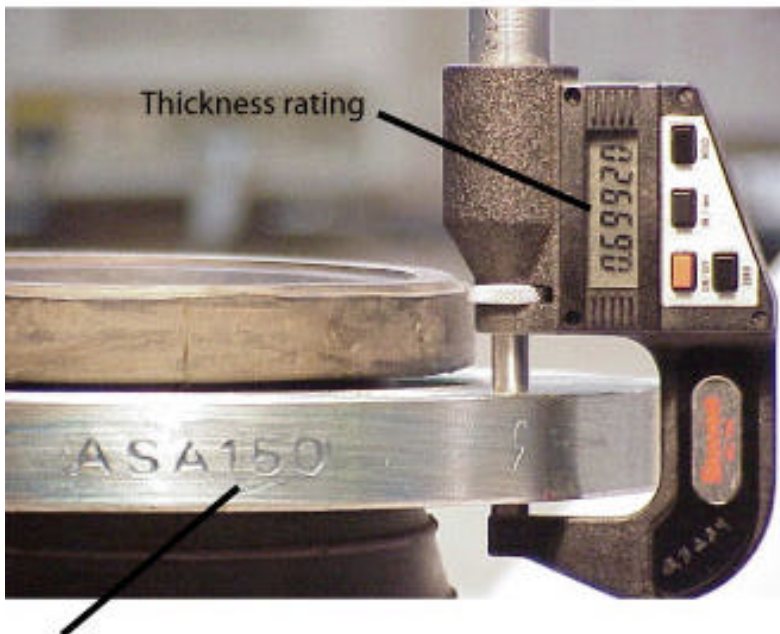
- "UL" label on end of switch (black lettering on white background- two larger pinkish red letters stamped on label).

- Manufacturer can identify date period manufactured from two larger letters.

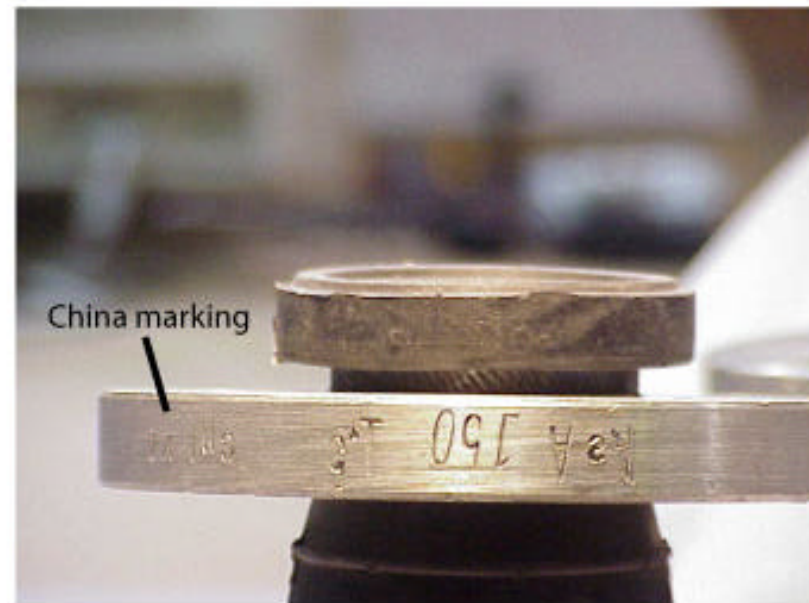




## Expansion Connectors Counterfeit



150 lb. rated flange  
Should be 0.940" thick - 0.000+0.125  
This one is 0.69920" thick.



Apparent hand stamped.  
No manufacturer marking. "China" unacceptable as  
manufacturer. No STANDARD MARKING (i.e. B 16.5).  
No material type identified.



**Counterfeit Certificate**

**AMERICAN FILLER METALS CO.**  
 P. O. BOX 12748 • HOUSTON, TEXAS 77217-2748  
 PHONE: (713) 649-0785 • FAX: (713) 644-9628 • 1-800-394-4550

(GAS ROOSE)  
 GHSV

XXX ACTUAL  
 TYPICAL


**CERTIFIED MATERIAL TEST REPORT**

Customer GAS ROOSE Alloy E7018  
 Address \_\_\_\_\_ Specification AWS A5.1  
 City, State, Zip \_\_\_\_\_ Size 5/32 Qty 300#  
 Cust. Order No. 89257 Heat No. 0298  
 Date Shipped 7-29-98

Aluminum	Iron	Silicon	.02	
Beryllium	Lanthanum	Silver		
Boron	Lead	Sulphur		
Cadmium	Magnesium	Tantalum		
Carbon	Manganese	Tin	.93	
Chromium	.01	Molybdenum	.006	
Cobalt	Nickel	.07	Tungsten	
Columbium	Nitrogen	.01	Vanadium	.01
Copper	Phosphorus	Zinc		
Ferrite		Zirconium		
		Others		

This certification is provided by American Filler Metals Inc. with the understanding that if the product covered does not conform to the stated specifications, there shall be no personal liability of any kind by the undersigned. Furthermore, the obligation and liability (of such non-conformance) by American Filler Metals Inc. will be limited to: a) furnishing the purchaser with a product conforming to the correct specifications, at no additional charge, or b) to refund the full purchase price paid for such non-conforming product. American Filler Metals Inc. will not be liable for consequential damage.

Physical Prop \_\_\_\_\_  
 Tensile \_\_\_\_\_  
 Yield \_\_\_\_\_  
 Elongation \_\_\_\_\_

  
 Authorized Representative

- Compare to other counterfeit certificate for E6010.
1. Specification numbers are the same on both certificates.
  2. Heat numbers are the same on both certificates.
  3. Total of chemical alloys should be between 99% and 100%.  
 (Report totals 164.4% - Max capable is 100%.)





**Counterfeit Certificate**

P. O. BOX 12748 • HOUSTON, TEXAS 77117-2748  
PHONE: (713) 649-8785 • FAX: (713) 644-9628 • 1-800-394-4150

CERTIFIED MATERIAL TEST REPORT

EXACTUAL  
TYPICAL

1

2

Customer GAS HOUSE Alloy E6010  
 Address \_\_\_\_\_ Specification AMS A5.1  
 City, State, Zip \_\_\_\_\_ Size 5/32 Qty 200#  
 Cust. Order No. 89257 Heat No. 0298  
 Date Shipped 7-29-98

3

Aluminum	Iron	Silicon	.12
Beryllium	Lanthanum	Silver	
Boron	Lead	Sulphur	.009
Cadmium	Magnesium	Tantalum	
Carbon	.14	Manganese	.42
Chromium		Molybdenum	
Cobalt		Nickel	
Columbium		Nitrogen	
Copper		Phosphorus	
Ferrite		Zinc	
		Zirconium	
		Others	

This certification is provided by American Filler Metals Inc. with the understanding that if the product covered does not conform to the stated specifications, there shall be no personal liability of any kind by the undersigned. Furthermore, the obligation and liability (of such non-conformance) by American Filler Metals Inc. will be limited to: a) furnishing the purchaser with a product conforming to the correct specifications, at no additional charge, or b) to refund the full purchase price paid for such non-conforming product. American Filler Metals Inc. will not be liable for consequential damage.

Physical Prop \_\_\_\_\_  
Tensile \_\_\_\_\_  
Yield \_\_\_\_\_  
Elongation \_\_\_\_\_

  
Authorized Representative

- Compare to other counterfeit certificate for E7018.
1. Specification numbers are the same on both certificates.
  2. Heat numbers are the same on both certificates.
  3. Total of chemical alloys should be between 99% and 100%.  
(Report totals 76.9%. What alloys are in the remaining 23.1%?)

01/17/01 WED 09:12 FAX 9028493 7308 0007

Freddie Hartzog, 705-N  
Page 10 of 11  
SRT-MTS-07-4101  
October 23, 1997

**Counterfeit Certificate**

ATTACHMENT 1 Page 1 of 1

**Carolina Steel & Wire**  
CORPORATION  
3650 Two Notch Road ■ Ladson, S.C. ■ 29773-0828  
Telephone (803) 359-5001  
Fax (803) 359-1201

TEST CERTIFICATE

U.S.S.C. P02: KR 41505A Test Report No: 776

4

Customer: CONSOLIDATED RIG & MARINE  
2039 EAST 11TH STREET  
P.O. BOX 3235  
JACKSONVILLE FL 32206

Order No: NAE399 Bill Order No: 20873

Material: 1/8" x 7/16" Performed Stainless Steel Cable Type 302

1 Quantity: 5000 Feet Date Shipped: 3/06/97

2

BREAKING STRENGTH TEST

Acquired: 1740 lbs.  
Actual: 1920 lbs.

3

This is to certify that the material described above has been tested with the results indicated and has been found to comply with the requirements of Specification (MS-9-4)140-1 Type I and the specifications for the materials therein.

CAROLINA STEEL AND WIRE CORPORATION

Subscribed and sworn to before me this 4th day of March 1997

*John T. Hester*  
John T. Hester, O.-C. Notary

*Matthew Roddy*  
My Commission Expires June 12, 2006

17

Compare with manufacturer's certificate.

1. Material size altered
2. Quantity altered
3. Breaking strength altered
4. Same test report number

01-17-01 WED 09:12 FAX 9528490 7308 W008

Freddie Hartzog, 705-N  
Page 11 of 11  
SRT-MTS-97-4101  
October 26, 1997

ATTACHMENT 2

**Manufacturer Certificate**

*Supplied by  
Carolina Steel  
Wire*

**Carolina Steel & Wire**  
CORPORATION  
1450 Tom Notch Road • Landgrove, G.C. • 29772-012  
Telephone (803) 359-0301  
Fax (803) 359-1201

TEST CERTIFICATE

Test Report No. 776

Test Report No. - 776  
Mill Order No. - 10873  
Order No. - RA8399

For 5/16 19x7 Preformed  
Stainless Steel Cable Type 302  
Non Rotating

4

Customer: CONSOLIDATED CIG & BASINE  
2039 EAST 11TH STREET  
P.O. BOX 3135  
JACKSONVILLE FL  
32206

Order No: RA8399 Mill Order No: 10873

1 Material: 5/16 19x7 Preformed Stainless Steel Cable Type 302  
Non Rotating

2 Quantity: 300 Feet Date Shipped: 5/06/97

3 BREAKING STRENGTH TEST  
Required: 4,100 lbs.  
Actual: 3,150 lbs.

This is to certify that the material described above has been tested with the results indicated and has been found to comply with the requirements of Specification MIL-S-2104-D, Type I and the specifications for the materials therein.

CAROLINA STEEL AND WIRE CORPORATION

Subscribed and sworn to before me this 4th day of March 1997

John Tuschy, Q. C. Notary

16

Compare with information on counterfeit certificate.

Original- same font throughout.

1. Material size altered
2. Quantity altered
3. Breaking strength altered
4. Same test report number



**Counterfeit Certificate**

*copy supplied  
 1/27/01 CSJY*

CERTIFICATE OF ANALYSIS

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREON  
 HAS THE FOLLOWING CHARACTERISTICS

CUSTOMER	BOUILON LUBRICANTS	
PRODUCT NAME	MULTIFAX EP #2	
PRODUCT CODE	50876-2	
ATCH #	H-34-99	
DATE OF MANUFACTURE	8/16/99	
EXACO ITEM	00995	
METHOD	TEST DESCRIPTION	RESULTS
D 217-A	PENETRATION WORKED REFER TO	
D 217-A2	4.10.2.13 FOR ADJUSTMENTS	270.0000
	FIRST PENETRATION AT 60S	210.0000
	FOR ADJUSTMENTS REFER TO	
	4.10.2.13	
C 2265	DROPPING POINT, DEG. F	380.0000
T 2509	TIMBER 10	40.0000
4.10.2.10	% ALKALINITY REFER TO	.0400
	4.10.2.12 FOR ADJUSTMENT	
4.10.2.04	% ZINC BY ATOMIC ABSORPTION	2017.0000

1

2

3

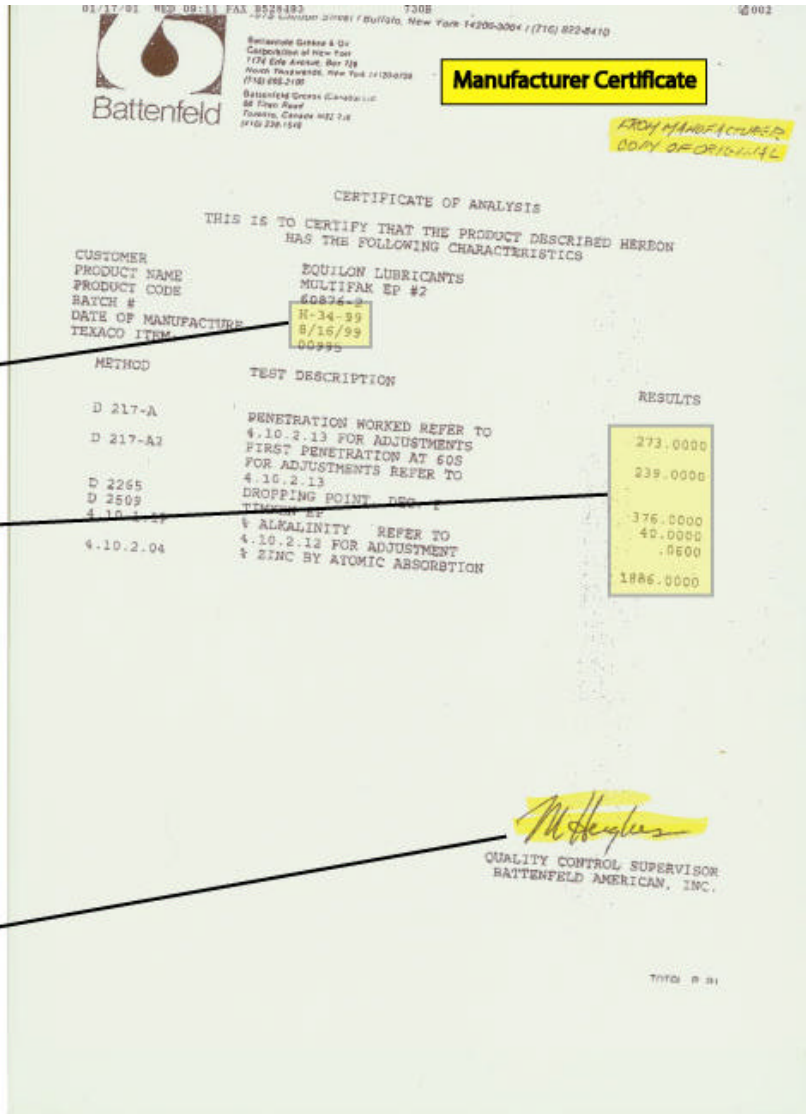
4

THE CONSUMABLE COMPLIES WITH ALL NLGI (NATIONAL LUBRICATION  
 GREASE INSTITUTE) AND APPLICABLE ASTM REQUIREMENTS USED TO  
 MANUFACTURE THE CONSUMABLE.

*M. Kelly*  
 QUALITY CONTROL SUPERVISOR  
 BATTENFELD AMERICAN, INC.

Compare to manufacturer's certificate.

1. Info- different font
2. Results altered
3. Added information not on original.
4. Signature forged.



Original-  
 Same font throughout.  
 Original signature.

Compare to counterfeit certificate.  
 1. Info- different font  
 2. Results altered  
 3. Signature forged.