



CSA INTERNATIONAL

WHITE PAPER

Eliminating Redundant Component Testing Reduces Time to Market and Manufacturers' Expense

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October 2004

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Following months of negotiation between CSA International (CSA), Underwriters Laboratories, Inc. (UL) and major members of the electrical industry, a new agreement on acceptance of electrical components for selected end-products was signed on November 10th, 2003. The agreement between CSA and UL promotes competition and provides a major benefit to the electrical industry through expanded product certification choice for electrical manufacturers and provides a major benefit to the electrical industry by the elimination of redundant testing services.

Component acceptance policies vary from one certification and testing organization to the next. As a general practice since 1994, however, CSA International accepts electrical components that are certified by other accredited organizations. UL's policy has been to not accept components tested and certified by other organizations unless those components are specifically covered under an agreement with another organization. To date, UL component acceptance agreement has been narrowly focused on specific components in certain end-product applications. CSA's general practice, since 1994 is to accept electrical components tested and certified by UL. UL's operational policy required retesting and recertification of all non-UL listed/recognized components. For end-product manufacturers, the additional testing by UL of CSA-certified components could lead to delays in product certification. For component manufacturers, the required additional testing may have resulted in higher testing and certification costs. Under the terms of the agreement, UL will no longer require retesting of many CSA-certified electrical components when performing end-product evaluations of specific low voltage distribution and control equipment.

This agreement marks the culmination of cooperative discussion and collaboration by CSA and UL in concert with the National Electrical Manufacturers Association (NEMA) and Electro-Federation Canada (EFC) and their members. We congratulate our colleagues at UL, as well as NEMA and EFC and industry partners, for their contributions to the negotiation of this important agreement and the continued commitment to implement each phase of its scope.

The current Agreement is limited to selected electrical components when used in Low Voltage Distribution and Control Equipment. The Agreement does *not* apply to electrical components used in any other class of products (such as appliances, power tools or lighting, for example).

What is the significance of this Agreement?

Although limited to specific components in selected end-product applications, the Agreement reflects a major change from UL's past practices. Under the Agreement, end-product manufacturers will have access to a broader selection of components without certification delays or costly redesigns resulting from component rejection. This Agreement represents a significant first step in CSA's larger objective to obtain mutual acceptance of certified components across the entire range of electrical components used in end-product applications. Many classes of electrical components and end-product applications are not covered by the agreement. We estimate that only about 35 percent of the entire spectrum of electrical components are now accepted by UL without retesting. For the remaining 65 percent, UL still requires retesting and recertification.

Electrical end-product and component manufacturers, trade associations, and ultimately consumers of electrical products have indicated their support for expanding UL acceptance of all types of electrical components used in all categories of electrical products.

Why component acceptance is necessary — what is the cost?

When a component certified by one accredited organization is rejected by another during end-product evaluation, the rejecting organization typically requires that the component be retested in its laboratory. During retesting the component is evaluated against the exact same standards that it was previously tested against, a costly redundancy.

The duplicate expense doesn't end with the original testing. To retain a component's certification over time, the certification and testing organization implements a yearly schedule of on-site inspections to verify that the component continues to meet the standards. Depending on the organization and the component in question, frequency of inspections can range from twice per year up to 48 times per year. When components are rejected and retested by another organization, that organization's schedule of follow-up inspections is imposed on top of the original certifier's follow-up program. This forces the component manufacturer to absorb the expense burden of redundant additional inspections.

Each year, redundant component testing and follow-up inspections cost electrical component manufacturers millions of dollars. Redundant testing and inspections for four components in a single-end product could result in additional certification and inspection costs of more than \$30,000 in the first year if the components are not accepted by UL. Every subsequent year, redundant follow-up inspections could add an additional \$10,000 to the component manufacturers' total testing and certification expense. Component manufacturers operating in today's highly competitive marketplace are burdened with these unnecessary costs.

When one organization does not accept components that were certified by another, the end-

product manufacturer may be left with fewer supplier and component options to choose from and may find that competitively priced components cannot be used. What's more, if a certified component used by an end-use product manufacturer is rejected during end-product evaluation, the certified component must be retested or replaced—delaying market entry and possibly causing product reengineering to accommodate a replacement component.

Component and end-product manufacturers are not the only ones who are hurt when certification and testing organizations block use of components certified by others. Product distributors, retailers and consumers may be required to pay more for the products they purchase to cover the additional cost of retesting and recertification. In addition, availability of new or redesigned products may be delayed and product shortages may occur due to component-related delays in securing product approval. Redundant testing can also cause work backlogs within organizations who require retesting, resulting in additional unnecessary delays.

[A threat to open competition](#)

Perhaps the most damaging effect of component non-acceptance is the long-term impact this practice has on competition in the testing and certification industry. If a major certification and testing organization can arbitrarily reject components that have been certified by other accredited organizations, they are, in effect, attempting to force manufacturers to use a single source for product testing and certification. The result is a monopolistic concentration of power and influence, which history shows will ultimately mean higher costs and reduced service levels for manufacturers who are forced to purchase testing and certification services from a single source.

Conversely, when certification and testing organizations accept certified components approved by other accredited organizations, a competitive playing field is maintained, enabling product manufacturers to choose a certification and testing organization based on the most relevant criteria to them—capability, efficiency, service, timing, and cost.

[Broad industry support](#)

CSA International has worked collaboratively with UL, industry members, and trade associations for the past two years to resolve the component acceptance issue.

In December 2002, CSA hosted the North American Electrical Component Forum to provide manufacturers and industry stakeholders with a forum where they could express their views and concerns regarding component acceptance. Representatives from more than 50 electrical manufacturers, certification and testing organizations, and industry associations attended the forum.

One Forum attendee, Mike Motz of Liebert Corporation, stated, “Manufacturing is a cornerstone of any economy. It is important that we have an environment that provides the best opportunity for our success, for delivering products that meet the needs of consumers and offer the highest degree of safety. The current environment offers unnecessary and costly obstacles. We are very hopeful that we can remove these barriers by working together.”

Industry associations such as the National Electrical Manufacturers Association (NEMA), the Electro-Federation Canada (EFC), the American Lighting Association (ALA), the Power Tools Institute and others have requested that CSA, UL and other certification and testing organizations negotiate agreements for mutual component acceptance. NEMA and EFC both co-sponsored the most recent Agreement on Acceptance of Components at the request of their members.

On February 11th, 2003, the Electrical Equipment Manufacturers Advisory Council (EEMAC) and EFC published a position paper that states in part:

“We support CSA’s position and its policy to accept components in end-use products that have been certified by accredited certification organizations without additional testing, without application of an additional certification mark and without follow-up inspections.”

Reactions from the trade media have also been in favor of component acceptance. *Design Product News* ran an editorial criticizing the time to market delays and additional costs generated by redundant testing¹.

[A single North American mark?](#)

As one means of resolving the component acceptance issue, CSA has proposed the creation of a single North American component mark. This concept was presented by CSA Group President and CEO Rob Griffin at the Council for Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA) Council meeting in Mexico in 2003.

Under such a system, all accredited testing & certification organizations would test electrical components against a single, harmonized standard for the North American market. Since all organizations would be issuing the same mark, component nonacceptance would no longer be a concern for OEMs or component manufacturers.

Canadian Electronics magazine conducted a survey among readers of their April 2003 e-newsletter. The survey asked what they thought of a single North American component mark, which would resolve the component acceptance issue. More than 90 percent of those surveyed responded that they favored this idea, with the remaining 10 percent indicating that they were in favor of greater global harmonization of standards².

The IT industry: proof that component acceptance can work

Component acceptance is currently the norm in the information technology (IT) industry, but this was not the case until the early 1990s when IT manufacturers balked at the extra cost and lost time associated with component non-acceptance. These manufacturers joined forces and demanded that certification and testing organizations accept previously certified components.

As a result of their efforts, CSA and UL have accepted previously certified components in IT products since 1994. Ironically, many of the same CSA-certified components accepted by UL in IT end-products since 1994 *still* are not accepted by UL when used in other types of electrical end-products, even under the latest agreement!

Safety: no jeopardy, no reduction

Product and consumer safety are not jeopardized by the CSA and UL agreement. Accrediting and regulatory bodies verify that a certification and testing organization has the required testing capabilities & equipment, control programs, and reporting & complaint handling procedures needed to test and certify a particular class of products.

OSHA recognizes laboratories to test and certify electrical, gas, and similar types of products for compliance with applicable U.S. standards. OSHA-recognized laboratories are known as Nationally Recognized Testing Laboratories (NRTLs). For Canada, testing laboratories receive similar accreditation from the Standards Council of Canada (SCC). Both CSA and UL are recognized/accredited by OSHA and SCC.

All recognized/accredited organizations are considered by the accrediting/regulatory bodies to be qualified to test and certify a particular class of products for compliance with the applicable standards—regardless of who published the standards.

Resolving differences in follow-up inspection programs

A more specific area of disagreement on component acceptance involves follow-up inspection practices, which can vary from one organization to the next and from one component to the next.

Certification and testing organizations that require more frequent inspections have claimed the less frequent inspection practices of their competitors do not adequately ensure adherence to standards over time. They further argue that they cannot accept components from other accredited organizations unless those organizations increase inspection frequency to match their follow-up practices.

Many manufacturers say that the *thoroughness* of each inspection is more important than inspection frequency in ensuring ongoing compliance with standards. A more frequent inspection program may not provide a higher degree of oversight than a less frequent program if each of the more frequent inspections is less intensive.

During recent negotiations with UL on the new Agreement on Acceptance of Components, several CSA/UL customers noted that the thoroughness and integrity of CSA follow-up procedures remains unquestioned even though, in many cases, CSA policies call for fewer follow-up inspections than are prescribed by UL for the same component.

Future Collaboration

At CSA, we welcome and applaud the change in UL's policy on component acceptance. Together with UL, we are committed to supporting industry-wide programs that deliver benefits for manufacturers through process efficiencies while ensuring process integrity.

With continued UL collaboration and industry support, CSA looks forward to the full implementation of the current agreement and, with UL's cooperation, expansion of the scope of the agreement on the acceptance of components to ensure a competitive marketplace for all classes of electrical components and products. The acceptance of all electrical components in all end-products can only benefit both component and all end-product manufacturers.

To learn more about the component acceptance issue, please contact:

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1 "Testing Turf War Costs You Time, Money,"
Design Product News, January/February 2003, p. 3

2 "One Big Mark or One Big Mess?"
Canadian Electronics, June 2003, p. 1



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