Weekly Whitepaper
Week #22

Understanding the UL - CSA Certification Process

Overview:

All UL/CSA certifications involve the US/CAN Certification Agency verifying that the product complies with the applicable UL/CSA safety standards. Projects that do not involve long-term testing usually are completed within an 8 – 12 week process (perhaps longer with some agencies).

Those companies receiving their 1st certification are also required to have an initial factory inspection before final certification is authorized. This inspection is scheduled after the Certification project is successfully completed. The factory inspection itself lasts only a few hours, but it can take anywhere from days to weeks to schedule and conduct the initial inspection depending on the factory location. Subsequent certifications at the same factory location usually do not require an initial inspection prior to certification being granted.

A UL/CSA Certification project is a 5-step process culminating in either a Findings Report for products that do not comply or a Certification Report for products that do comply. The Certification report is used during factory inspections to verify that the product continues to be manufactured as originally certified.

The 5-Step Certification Project Process:

1) Construction Review
2) Testing
3) Report Prepared
4) Project Reviewed
5) Report Issued

Step 1: The Construction Review:

A “Construction Review” is the physical review of the product construction to determine compliance with the applicable safety standards. This review includes documenting how the product complies with each clause in the standard and why any clause is “not applicable". To accomplish this, a compliance engineer opens and inspects a product sample while verifying and documenting compliance. This process also includes a review of installation instructions, the user manual, and all markings/labeling. This is a time-consuming process that results in an engineering report that can be hundreds of pages in length.

Step 2: Product Testing:

The product safety standards include tests that are used to confirm that a safety hazard does not exist during normal operation and single fault conditions. One of the results of the Construction Review process is a list of tests and test conditions specific for the product being reviewed. A Test Plan is then prepared to perform the required tests. The Test Plan identifies the test conditions and test parameters for each test and each product variation to be tested.
The Test Plan identifies the measurements points, test voltage/frequency, and product loading conditions. Be sure to consider how your product will be tested before starting your Certification project. Will you need to provide the certification lab with any additional equipment or materials in order to operate your product in a fully loaded condition?

Step 3: Project Report: Based on the results of the Construction Review & Testing

A) Findings Report: If your product is found to have non-compliant construction features or test results, the Agency Compliance Engineer will draft a "Findings Report" that will summarize the non-compliant concerns and provide suggestions for resolution. If you receive a Findings Report, you can also expect a project extension and cost increase to re-evaluate the revised product.

B) Certification Report: If the product is found to comply with the applicable product safety standards, the Agency Compliance Engineer will draft a "Certification Report". The Certification Report controls the elements of the product that are critical to bringing the product into compliance with the standards = components, dimensions, materials, important instructions, and mandatory markings. The report includes pictures and illustrations. The report is used by the manufacturer to insure that they continue to produce the product as required by the report. The report is also used by the Agency Factory Inspector to confirm the product continues to be manufactured as originally certified.

Step 4: Project Review:

After the project report is drafted by the Agency Compliance Engineer, it is reviewed by a Reviewing Engineer. There is a lot of work and documentation to be reviewed. If Certification is being granted, the Reviewing Engineer must agree that the product complies and that the engineering documentation indicates how, before signing off on the project. As a result, there is almost always communication between the Compliance Engineer and Reviewing Engineer during the review process, with revisions to the compliance documentation not uncommon. The objective is to insure that the compliance documentation will pass the 3rd party audit test = an educated compliance engineer who does not know the product must be able to easily identify how the product complies with any clause in the standard from the certification project compliance documentation. Each UL/CSA Certification Agency is regularly audited by US-OSHA and the Standards Council of Canada, which includes auditing the contents of certification project files.

Step 5: Report Issued:

A) Findings Report: If you receive a Findings Report, you will need to make revisions in order to resolve the non-compliant issues. When you have identified your resolutions, you will need to provide the Certification Agency with a response to the Findings Report. An updated project plan will be prepared accordingly, with a cost increase and project extension request provided by the Certification Agency.

It is very important to understand that each revision you make has the potential to have a broad impact requiring more than just a simple review of the change. Also note that a review of your revision(s) can lead to new non-compliant issues. Changing the enclosure material, changing a power supply, or re-laying a mains voltage circuit board are examples of revisions that could create the need for an extensive re-evaluation. For example, changing an enclosure material from plastic to metal could resolve a problem with your plastic while leading to a new problem with grounding or electrical spacings.

We have heard of manufacturers who have received multiple findings reports, each report having an increasing number of problems, with the product getting farther and farther from compliance. If you receive a Findings Report, you should consider getting assistance from a compliance expert.

Step 5: Report Issued (continued):

B) Certification Report: If it is your 1st Certification, you will only receive a letter indicating that the product has been verified to comply with the standard. The letter will further indicate that you need to schedule and complete your initial factory inspection before certification will be granted. If it is not your 1st Certification, you will receive a copy of the Certification report and the product will be part of your next regular factory inspection.

The Certification Report is to be used by the manufacturer to insure that they continue to produce a compliant product. Each time the manufacturer applies the UL/CSA certification mark, they are stating that the product fully complies with the Certification Report. Therefore, it is important that when the manufacturer receives the Certification Report, they completely review the contents and inform the Certification Agency if there are any inaccuracies needing correction.

Planning for Success:

Most manufacturers would like to get through the process and receive a Certification Report on the first pass. Having to repeat the certification process because you received a Findings Report causes unanticipated cost increases and time delays. However, in order to avoid a Findings Report, you need to be properly prepared.

In a perfect situation, your product was designed for compliance to the applicable standards - you own the current edition of the applicable product safety standards, and your design engineers know the requirements. However, not many companies have these resources and training. If you have not designed for compliance in this manner, your product is unlikely to comply. The standards consist of hundreds of requirements and knowledge of the requirements is needed in order to achieve success. And the fact is, most companies simply do not have a compliance expert on staff.

Submitting your product directly for Certification can be a very expensive experiment. If you do not have a compliance expert guiding your design team, you should consider having a preliminary review conducted by a product safety expert. Options include a design document review, a basic review, focused only on catching major non-compliance issues or, a full construction review which aims to find all non-compliant issues and create the test plan. Although it may delay the start of the Certification project by a couple of weeks, the likelihood of receiving Certification on the first pass increases dramatically. This saves time & money. In fact, a Preliminary Review usually pays for itself!

Preliminary Review Cost + Certification Cost < Cost of Repeating Certification Twice

YES, it is confusing!

CertifiGroup Can Help
Compliance Assistance Services to help you get it right the 1st time
Preliminary Design Reviews, Design Guidance, Training
US, Canadian, CE, & International Certifications