Appliance Advisor™

2013 • Issue 2

Safety Concerns for Smart-Enabled Appliances

By Travis Hardin */ Primary Designated Engineer*

Smart-enabled appliances incorporate advanced electronic and communications technologies, enabling consumers to more closely monitor and control their operation and energy use. Such appliances can receive and respond to communication signals or data from a remote user interface, such as a smart phone or computer. They can also be programmed or operated to operate less frequently, thereby reducing energy consumption, or to shift operation to off-peak periods when utility energy demands and costs are lower.

The evolution of conventional home appliances into smart appliances introduces potential product safety concerns that need to be addressed in end-product standards. External devices communicating with and controlling an appliance have the potential to adversely affect operating functions and interfere with appliance safety protection features.

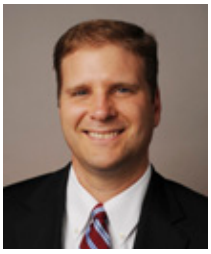
Safety standards historically address functions inherent to an appliance, such as pre-determined, built-in settings adjustable by action of consumer. However, standards for smart enabled appliances need to additionally address:

- Network connection that introduces action by external devices or other parties.
- Remote operation by the consumer that no longer requires proximity to the appliance.

UL has already begun to address this by publishing smart enabled safety requirements for a number of major appliances. These requirements are focused on the functional safety of appliances that are network connected or intended for remote operation.

continued on page 8

A Letter From Doug

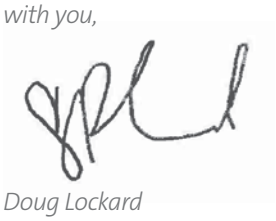


Welcome to our second issue of 2013 and thank you for your engagement with our industry newsletter.

This issue embodies a theme of 'evolution'. Whether it represents enhanced speed to market in North America with our DNA program, improving our position in Brazil with the acquisition of Testtech or responding directly to client requests by extending our CB accreditation to pool pumps.

UL's evolution continues by aligning our services to meet your changing needs. It means listening to you, our clients. And most importantly it means working with you and providing solutions to solve problems and together create safer working and living environments.

As always it is a pleasure to work with you,



Doug Lockard
Director, Global Appliances

As featured in *Appliance Design Magazine*, June issue

IFR Corner

By John Sena */ Senior Customer Service Engineer*

Industry file reviews and effective dates.

STANDARD	EFFECTIVE DATE
UL507	2013-06-01
UL1450	2013-06-01
UL2021	2013-06-14
UL60745-2-15	2013-06-28
UL60745-2-15	2013-06-28
UL1017	2013-08-01
UL1577	2013-08-24
UL1004-02	2013-09-16
NSF 18	2013-09-23
NSF 3	2013-09-23
NSF 51	2013-09-23
NSF 6	2013-09-23
UL60745-2-1	2013-10-07
UL60745-2-1	2013-10-07
UL858	2013-10-18
Z62.1	2013-10-31
Z62.3	2013-10-31
UL60691	2013-11-18
UL499	2013-11-29
B175.2	2031-11-29
UL499	2013-11-30
UL60384-14	2013-12-25

For more information please contact appliance.quote@us.ul.com

DNA ARRIVES FOR ELECTRONIC CONTROLS

By Frank Ladonne */ Primary Designated Engineer*

UL has been evaluating products and writing safety certification reports for over 119 years. Consequently, UL owns one of the largest repositories of product safety certification data in the world. In 2012 UL launched a pilot focused on unlocking the vast potential contained in this database of technical knowledge.

That new process, which we're calling DNA, has been implemented globally in the Electric Motor categories and has been just wildly successful. UL's motor customers who are also members of the Client Test Data Program (CTDP) have seen their turn around times for motor projects drop from weeks to hours. Naturally, this means dramatically faster time to market. In addition, manufacturers are now easily able to provide links to previous constructions and tests to eliminate costly and time consuming redundant testing. These manufacturers are also looking forward to when their customers will soon be able to search and sort and query. For example, a pump manufacturer may simply query the database to:
"Show me every UL Recognized motor that is ¼ horsepower, 120 volts, 3450 RPM and has a Class F insulation system"

We recently surveyed participants in the Motor DNA certification process and the participation rate in the survey was an astounding 82%.

78% of respondents said the DNA process is MUCH better. 100% said it represents a better value and 100% said that they would either be very or extremely likely to recommend Product Safety DNA to a colleague or supplier.

Buoyed by this success, we are now expanding the DNA concept and process into additional product categories and Electronic Controls is at the top of the list of the second round.

Today, virtually every electrical appliance contains an electronic control. Truly, the advances in technology and the economics of microprocessors have brought unimagined features and functionality to otherwise very ordinary household appliances.

Along with these benefits however, have come significant challenges in evaluating the functional safety of the control. For example, is that microprocessor control in your blender smart enough to not start up when someone walks past talking on a cell phone?

So, electronic control evaluations have tended to have a degree of complexity that render them a great candidate for a fresh look at the process. Simply because of the ubiquitous nature of electronic controls, process improvement in the certifications of electronic controls will yield widespread benefits in virtually the entire spectrum of end products. Great news on the proliferation of the data centric DNA process.

For inquires please email DNAinfo@ul.com

Portable Tools — UL 60745

***By John Stimitz** / Primary Designated Engineer*

The Standard for Hand-Held Motor Operated Electric Tools – safety – Part 1: General Requirements, UL 60745-1 is a harmonized bi-national standard published on July 31, 2007. The standard is in its Fourth Edition, and is based on IEC 60745-1. This standard covers hand-held motor operated or magnetically driven electric tools and covers the "general requirements" for portable tools along with twenty corresponding part 2 standards which cover the particular requirements for specific types of hand-held tools. For example, UL 60745-2-1 covers the particular requirements for drills and impact drills, and UL 60745-2-5 covers the particular requirements for circular saws. Each part 2 can amend the general requirements of the part 1 standard by replacing or adding specific requirements for the specific tool since those requirements are unique for the specific tool.

The Part 1 standard also covers battery tools and battery packs, and these are covered by Annex K of the standard. The Annex applies to rechargeable battery-powered motor-operated or magnetically driven tools and the battery packs for such tools. It also applies to tools incorporating detachable, integral and separable battery packs. The maximum rated voltage for these tools and battery is 75 Volts d.c. Each corresponding part 2 also includes the specific requirements for each specific battery-powered tool.

Specific Part 2s – Latest Developments

- In July, 2012, IEC published Edition 2.2, *Part 2-3: Particular requirements for grinders, polishers and disk-type sanders.* This standard applies to grinders, polishers and disk-type sanders, including angle, straight and vertical tools, with a rated capacity not exceeding 230 mm wheel diameter. For grinders, the rated speed does not exceed a peripheral speed of the accessory of 80 m/s at rated capacity. UL is in the process of adopting this new part 2 standard and it is anticipated that it will be published by the 3rd quarter, 2013.
- Hedge trimmers are covered by UL 60745-2-15, *Particular Requirements for Hedge Trimmers* and the first edition was published on June 28, 2010. All hedge trimmers that were previously certified to UL 1448, Electric Hedge Trimmers will be required to comply with UL 60745-2-15 by June 28, 2013 at which time UL 1448 will be withdrawn.

Over the past several years, many new designs of extended reach hedge trimmers (also known as "pole hedge trimmers") have entered the market. In order to specifically address the requirements for these types of products, UL prepared an initial draft outline of requirements. These new draft requirements, being developed as an Annex to IEC 60745-2-15, are presently being reviewed and amended by IEC TC 116, Maintenance Team 3 to which UL is a member and is actively participating to finalize the requirements. It is anticipated that the UL Standard with the new Annex will be published sometime in late 2014. Also note that when these new requirements are finalized, they will be

continued on page 5

Portable Tools (continued from page 4)

used as the basis for the development of requirements for a similar family of products called extended reach pruners (also known as "pole pruners").

- A new part 2 Standard, UL 60745-2-22: *Particular Requirements for Cut-Off Machines* was published on July 20, 2012. The standard applies to cut-off machines fitted with a bonded reinforced wheel or diamond cut-off wheels. These machines are intended to cut materials such as metals, concrete, masonry, glass and tile. All cut-off machines previously certified to either UL 60745-2-3, *Particular Requirements for Grinders, Polishers, and Disk-Type Sanders* or 60745-2-5, *Particular Requirements for Circular Saws* will be required to comply with UL 60745-2-22. Cut-off machines that are currently Certified to UL 60745-2-5 will be required to comply with UL 60745-2-22 by March 31, 2014. Cut-off machines that are currently Listed to UL 60745-2-3 will be required to comply with UL 60745-2-22 by the effective date to be established when the new edition of UL 60745-2-3 is published, which is anticipated to be published by the 3rd quarter, 2013.
- A new part 2 Standard, Part 2-23: *Particular requirements for die grinders and small rotary tools* is anticipated to be published in the 3rd quarter, 2013. The new standard applies to die grinders and small rotary tools for mounted accessories not exceeding 55 mm in diameter and mounted sanding accessories not exceeding 80 mm in diameter. Products that are presently certified to UL 745-2-36, *Particular Requirements for Hand Motor Tools* or tools that fall within the scope will be required to comply with the new standard.

Switches for Tools – UL 6059

The first issue of the *Outline of Investigation for Particular Requirements for Switches for Tools, UL 6059* was published on January 11, 2012. The document is based on the *Standard for Switches for Appliances – Part 1: General Requirements, UL 61058-1*. The Outline was developed and is intended to address the specific minimum requirements for switches incorporated into or integrated with power tools in accordance with the Standard for Hand-Held Motor-Operated Electric Tools – Safety – Part 1: General Requirements, UL 60745-1.

UL 6059 also states that the National Differences, including all clauses, tables, figures, and annexes, in UL 61058-1, do not apply. Since the requirements of UL 6059 were developed to align with UL 61058-1 and the end-product requirements for hand-held electric tools were taken into consideration, the National Differences in UL 61058-1 that generally apply to switches have been addressed by the end-product application-specific requirements. In view of this approach, the publication of UL 6059 will allow an IEC tested switch to be readily converted to a UL Recognized Component switch if it has been previously evaluated to IEC 61058-1 with no need to test to any North American deviations. In addition, it will allow for reduced testing, ensuring that only the tests required for power switches per UL 6059 are conducted. This will reduce the potential for confusion as to the proper requirements to apply to switches for use in tools when obtaining certification of switches for use in tools.

Within the next 1-2 months, UL 6059 will be added to the Standards Cross Reference Table in Clause 2 of UL 60745. When the revisions have been published, switches that have been certified to UL 6059 will be accepted for use in tools certified to UL 60745-1. Concurrently, the IEC subcommittee for switches, IEC SC23J is working towards developing the equivalent Part 2 IEC version of UL 6059. Upon publication of the new part 2, UL will propose to adopt this new standard.

UL 60745 Retooled

The Future

At the present time, UL 60745-1 covers hand-held motor-operated electric tools. In 2005, it was decided that a new part 1

continued on page 6

Portable Tools UL (continued from page 5)

standard should be developed combining requirements for portable tools, lawn and garden machines and transportable tools. Since these types of products have common construction elements, having a consolidated set of requirements in the part 1 for these types of products would benefit manufacturers of this type of equipment. The IEC Technical Committee, "TC 116" responsible for safety of motor-operated electric tools set out to accomplish this major task and the results of this work are now coming close to publishing a new document. This new standard will replace the present IEC 60745-1 standard and will cover electric motor-operated hand-held, transportable tools, and lawn and garden machinery. Hand-held tools will have the part 2s for specific tools, transportable tools will have part 3s, and lawn and garden machinery will have part 4s. It is expected that the new standard will be published towards the end of 2013 and the new part 1 standard number will be IEC 62841-1. All of the associated part 2s for hand-held tools will be revised to align with the new standard. UL will be proposing to adopt the new IEC standard along with the associated part 2s. Any associated new part 3s and 4s will also be aligned with the new standard.

Part 3-1: Particular requirements for transportable table saws will be one of the first published standards for transportable tools to be aligned with the new part 1. UL will propose to adopt the new standard and all table saws covered by UL 987 will be required to comply with the new part 1 and part 3-1 standard when published. Table saw requirements will then be phased out of UL 987 at the end of this transition. This process will be the same for any new part 3s that will be proposed and published. For lawn and garden equipment, the same process will be followed as any new part 4s are proposed and published. The *Standard for Electric Gardening Appliances, UL 82*, which covers some of the gardening products (grass shears, lawn trimmers etc.) that will be proposed as new part 4s will follow the same process. This transition process will be introduced over a period of time as the associated part 2s, 3s and 4s are introduced and published. Ample notification to manufactures and subscribers of this equipment will be provided as the new standards are published.

Some significant changes will be introduced in the new standard, IEC 62841-1. There will be requirements for electronic circuits that provide "safety critical functions." The new requirements will also facilitate the use of electronic switches in tools provided they comply with the relevant required performance levels. In addition, new requirements for Li-Ion battery systems will be added to Annexes K and L covering the battery system, where the system is a combination of a lithium-ion battery, the charging system and the tool along with the interfaces between them. Charger units will be investigated to the additional requirements in Annex K or L and will then be Listed under Battery Charger Units, (BBON). Battery Packs that have been investigated to the requirements in Annex K or L will have the option of being Listed or covered as an Unlisted Component to Lithium-ion Battery Packs, (BBOI).

UL acquires Testtech and becomes full-service appliance testing and certification provider for INMETRO program.

Appliance manufacturers can now rely on UL for complete product testing, certification and follow-up services required to access Brazil marketplace. **Click for details.**

India: UL is Accredited by BIS for Compulsory Registration Testing of Electronic Products

By Nagendra Bangaragiri */ Operations Manager, UL India*

UL India is recognized by the Bureau of Indian Standards (BIS) and can offer you the compulsory registration testing to IS 302-2-25:1994 and BIS registration services.

On September 7, 2012, the Indian Department of Electronics and Information Technology (DEIT) issued the Electronics & Information Technology Goods (Requirement for Compulsory Registration) Order, 2012. Fifteen electronic products will be required to comply with the applicable Indian safety standards and mandatory registration before they are imported to, distributed, or sold in India. Included in these products are microwave ovens and electronic clocks. The effective date of compliance which was April 3, 2013 has been extended to July 3, 2013.

With an increasing demand for electronics products in India, the India government developed this new mandatory registration scheme with the aim to mandate technical standards in the interest of public health and safety. At the same time, the scheme will serve as global quality standards for domestic manufacturers to follow so that they can compete with imports by meeting international safety standards.

The following shows the list of appliance products for compulsory Registration compliant to Indian Safety Standards under the BIS Act.

Indian/IEC Standard:
IS 302-2-25:1994/
IEC-60335-2-25:2010

Title of Standard:
Safety of Household & Similar Microwave Ovens Electrical Appliances: Part-2; Particular Requirements: Section 25

Products: Microwave Ovens

Manufacturers of the concerned products shall conform to the Specified Standard and display a "Self declaration – Conforming to IS <Standard No.>" label on their products after obtaining Registration from the BIS. Necessary documents to be submitted at application include: (1) Self Evaluation and Declaration and (2) Test Report from BIS recognized laboratories. In addition overseas applicants are required to have a local representative as liaison to BIS. The validity of a registration is 2 years and market surveillance will be conducted at least once in the valid period. Testing of surveillance samples should be done at BIS recognized laboratories.

Note: Electronic clocks with main powers (IS 302-2-26:1994/ IEC 60335-2-26:2008) are also included in the BIS compulsory registration program but UL will not apply for the accreditation of this standard at the moment.

How UL can help

Our Global Market Access team can help you achieve compliance by identifying applicable requirements for your specific product or technology feature to comply with current regulations in safety, EMC, wireless and energy efficiency. For more information, visit our Global Market Access website (Approval for India Section) or contact our experts at gma@ul.com.

These updates are for information purposes only and are not intended to convey legal or other professional advice.

Smart-Enabled Appliances (continued from cover)

In the development of the requirements, UL has determined that network or remote operation of an appliance:

- Cannot render inoperative any protective control or protective function
- Cannot result in unexpected hazardous performance
- Cannot permit remote reprogramming of a protective function

Additionally, for specific smart appliances, the following requirements have been developed:

Household Electric Water Heaters – Remote water temperature adjustment of the temperature regulating control is permitted. However, network or remote operation cannot override the water temperature set point above the value selected by the consumer. Reference: Supplement SB of ANSI/UL 174, 11th Edition, published September 2012.

Refrigerators – Delayed Operation such as the delay of the defrost operation and delay of ice maker cycling is permitted. Reference: Certification Requirement Decision of UL 250, 10th Edition, published November 2011.

Room Air Conditioners – Remote temperature set point adjustment and remote shutoff is permitted. Reference: Supplement SB of ANSI/UL 484, 8th Edition, published August 2012.

Dishwashers – Delayed or Remote Start/Stop operation is allowed when the Delayed or Remote operation function is preselected and the loading door is initially closed. Note: if dishwasher door is opened before operation commences the action is cancelled and restart not allowed. Reference: Certification Requirement Decision of ANSI /UL 749, 8th Edition, published March 2012.

Electric Ranges – Remote oven pre-heating or cooking is allowed when the Remote operation function is preselected. Note: if the door is opened before operation commences the action is cancelled and restart not allowed. However, remote operation of normally attended operations such as cooktop or boiler is not permitted. Reference: Certification Requirement Decision of ANSI/UL 858, 15th Edition, published January 2013.

Microwave Ovens – Remote microwave operation is allowed when the Remote operation function is preselected. Note: if the door is opened before operation commences the action is cancelled and restart not allowed. Reference: Certification Requirement Decision of ANSI/UL 923, 6th Edition, published January 2012.

Clothes Washers and Dryers – Delayed or Remote Start/Stop operation is allowed when the Delayed or Remote operation function is preselected and the loading door is initially closed. Note: if washer door is opened before operation commences the action is cancelled and restart not allowed. Reference: Certification Requirement Decision of ANSI /UL 2157, 2nd Edition, published March 2012 and Certification Requirement Decision of ANSI /UL 2158, 2nd Edition, published March 2012, respectively.

Smart enabled appliances are not limited to these major appliances. UL is presently considering the impact of these capabilities on small appliances and expects to develop proposed requirements for these as well.

Click to download the white paper today!

UL Selected as Authorized Standard Developer for Canada

By Tom Blewitt */ Director, Primary Designated Engineers*

In 1973 the Standards Council of Canada (SCC) accredited four standards development organizations (SDO's) to produce Canadian National Standards. They have served the market well for many years but it has become increasingly difficult for standards bodies to keep up with safety hazards, new technology and marketplace expectations of the rapidly evolving modern world. A solution chosen by SCC was to expand the number of SDO's so that more resources could be applied to the challenge.

Hence, UL was recently accredited by SCC to develop National Standards of Canada.

In a news release issued by SCC, Chief Executive Officer John Walter stated: *"With additional SCC-accredited standards development organizations operating in Canada, SCC is able to offer more standardization solutions to better serve the needs of Canadian government, industry and consumers."*

Accreditation from SCC allows UL to create standards solely for Canada along with fully harmonized bi-national standards for the Canadian-US marketplace. Where there is no standard in Canada, UL can utilize a single consensus body to develop a standard accredited for use in both Canada and the US. This innovation, pioneered in a joint effort of ULC (also an SCC accredited SDO) and UL for OLED technology, can be even more seamlessly implemented where UL is the SDO for both Canada and the US. As a result, UL can facilitate the development of a single bi-national standard that will allow new and innovative products to flow more freely between Canada and the US.

The inefficiency of the parallel but independent bi-national standards development processes for the two countries was a frequent point of concern expressed by industry and other stakeholders. However, UL is now in a unique position to address this concern with its ability to convene a single consensus committee consisting of Canadian and US stakeholders whose output will be recognized by both the SCC and ANSI. These key contributors to standards development need no longer duplicate their effort or expend additional time to achieve the desired result. This is because separate national consensus committees or a technical harmonization committee are no longer necessary.

UL's accreditation for Canada represents an opportunity to improve the lives of Canadians by enabling increased standardization and by leveraging the safety resources of UL inside and outside of Canada. However, it is not intended to nor does it affect any of the existing bi- or tri-national appliance standards (e.g. CAN/CSA-C22.2 No. 60335-1-11/UL 60335-1). All such standards will continue to be maintained as they have to date, including those led by CANENA as well as other co-publication efforts.

After 40 years, there is a new addition on the Canadian standards development scene. Today and in the future, UL is pleased to have the opportunity to promote, via standards, safe living and working environments for Canadians as it has for many years in the US.

UL Marks

The UL Mark is the single most accepted Certification Mark in the US, appearing on 22 billion products annually.

The world's most trusted Certification Mark has evolved. See the enhanced UL Certification Mark designs and learn more at ul.com/marks.

UL Named CB for Pool Pumps by EPA

State-of-the-art facility in Newton, IA

***By Craig Thies** / Engineering Manager*

Earlier this year the U.S. Environmental Protection Agency (EPA) finalized its first ENERGY STAR® specification for pool pumps, offering the federal rating system to help consumers identify energy efficient equipment.

More recently, the EPA announced that four certification bodies (CBs) are now recognized to certify pool pumps for the ENERGY STAR program. Manufacturers may begin working with these CBs to enroll in the CB's supervised or witnessed manufacturer's testing laboratory (S/WMTL) program and to certify product data.

- UL
- CSA
- IAPMO R&T
- NSF International

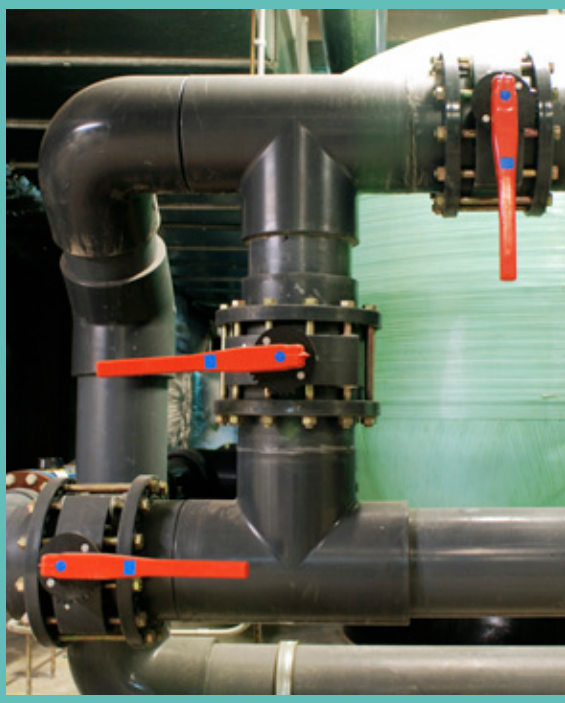
ENERGY STAR certified pool pumps will:

- Save consumers thousands of dollars over their lifetime
- Pay for themselves in under three years
- Run quieter and prolong the life of a pool's filtering system.

UL's lab in Newton, Iowa is fully equipped to meet your energy efficiency needs for pool pumps. For inquiries please contact **halquote@us.ul.com**

Energy Efficiency + Safety

In addition to our Energy Efficiency solutions, **click for information on UL's safety testing for the pool and spa industry.**



Share Your Thoughts:
Appliance.advisor@ul.com

Sign up at:
www.eepurl.com/f68y5

UL | **Follow us on Facebook** | **@ULdialogue** | **ULdialogue**