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TO: Attendees of Underwriters Laboratories Inc.
Meetings With Electrical Inspectors at the
2001 IAEI Section Meetings

SUBJECT: Report of Meetings

Underwriters Laboratories held meetings with Electrical Inspectors during the 2001 IAEI Section Meetings. Historically, these meetings have provided for an open exchange between electrical inspectors and UL regarding any subject of interest to authorities.

UL acknowledges the importance of this feedback. The electrical inspector is an integral part of the UL information loop. It is the inspector, who during the examination of the final installation, can judge under field conditions the adequacy of the constructions and markings for proper installation. It is the inspector who can pass this installation information to UL for use in modifying product safety requirements.

The questions and answers in this Report present the items discussed during the meetings. This is not a verbatim transcript: only the pertinent points have been recorded. Each question has been identified with the designation of the Section meeting at which the subject was discussed.

UL appreciates all those who took the time to participate in these meetings and provided us with information important for our endeavors and goals toward public safety. We would appreciate hearing from you on any comment or suggestions you have on this Report or the UL/Inspectors meetings.

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QUESTIONS AND ANSWERS
FROM
UL MEETINGS WITH ELECTRICAL INPECTORS
AT THE 2001
ANNUAL IAEI SECTION MEETINGS

This report contains questions and answers from the 2001 meetings. Where necessary, the answers have been expanded to include information that may not have been available during the meetings. Where specific actions have taken place in response to the Inspector input, the status of the actions is indicated. This report may provide insights into UL's intent and efforts that are associated with certification of electrical equipment so that it meets the purposes of the National Electrical Code and is installable in accordance with it. The questions have been arranged by subject matter and are identified in the margin with a Section identifier.

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1.0 UL SERVICES AND INFORMATION

- 1.1 (NW) Q What is the main difference between the UL Listing and the UL Classification of products?
- A The UL Listing Mark on a product means that UL found that samples of this product met safety requirements primarily based on UL's own published Standards for Safety and found to be free from reasonably foreseeable risk of fire, electric shock and related hazards.
- UL Classification is more specific with regard to use, product properties and hazards. Products bearing this mark have been evaluated for one or more of the following: (1) specific risks only (2) performance under specific conditions (3) specific regulatory codes (4) other than UL standards (5) evaluated to other conditions that UL may determine to be desirable. The specifics of the Classification are included as part of the Classification Marking.
- 1.2 (NW) Q Does UL allow an assigned ampacity for wires and cables that is greater than that assigned by the NEC® when the wires are part of a UL Listed product?
- A Internal wiring, cords and cables of UL Listed products may be found suitable for a higher ampacity than that permitted by Table 310.16 of the 2002 NEC®. The suitability of the wiring is determined through temperature and other appropriate testing at the greater ampacity level. These tests require temperature measurements of the conductor, the conductor insulation, its terminations, the equipment, etc, to assure the temperature limits of the materials are not exceeded.
- 1.3 (E) Q Section 110.3(B) requires Listed equipment to be used in accordance with the instructions included in the Listing or labeling. Are instructions on stick on labels part of the Listing or things the manufacturer would like to see in the installation?
- A It is difficult to give a definitive response without more details. In general, however, if the marking is required by the applicable UL Standard, then it's required to be applied to the product at the factory. If there are any questions regarding whether any marking is required, you may call your Regulatory Services Representative.
- 1.4 (S) Q A suggestion was made to require manufacturers of residential-electric clothes dryers to provide a wiring diagram on the back of the dryer, in

addition to the wiring diagram provided in the installation manual. Manuals are not always readily available at the time of installation.

A UL plans to make this recommendation to the Standard Technical Panel (STP) for Electric Clothes Dryers, UL 2158.

1.5 (SW) Q As the AHJ, what are we supposed to do when we see non-labeled equipment installed in the field that then gets magically labeled?

A The application of a UL Mark in the field is only permitted when conducted under one of UL's Field Engineering Services in the presence of a UL representative. The AHJ is always notified prior to the field visit and it's up to AHJ's whether they want to be present when the service is conducted.

Please notify UL immediately if you become aware of a manufacturer that applies a UL label in the field without UL involvement. This is considered an unauthorized use of the UL Listing Mark. UL's position of Field labeling can be viewed on the Regulators page on UL.com at www.ul.com/regulators.

1.6 (SW) Q What happens after a Field Report Information Sheet describing a non-conformance is submitted to UL? What does UL do to rectify this situation?

A When a field report is received by UL, it is immediately assigned to a project handler in our field report group. The project handler first determines the validity of the field report. This is usually accomplished through consultation with the responsible engineer for the particular product category. Once the validity and the nature of the concern is determined, the manufacturer is contacted. The actions taken from this point depend on the nature of the concern. In most cases, the manufacturer has the option to bring the product into compliance and evaluated under one of UL's Field Engineering Services. If this option is not viable or the manufacturer chooses not to cooperate, then the manufacturer is required to remove the UL Listing Mark.

Early in this process, a UL Field Representative will visit the factory to ensure that the noncompliant product is not occurring at the factory. If so, UL works with the manufacturer to bring the product into compliance.

Throughout this process, the AHJ is provided with updates on the progress of our investigation. AHJs can be given special details of our investigation as necessary. Additionally, our Field Report Staff contacts

the AHJ to let them know when a Field Evaluation or Field Inspection is scheduled. The AHJ should be notified at least 48 hours in advance. Once the investigation is completed, the Field Report staff notifies the AHJ in writing.

1.7
(SW)

Q Why isn't the UL Listing Mark always required on an outlet box as opposed to being permitted on the package? Once the package is discarded, it is difficult to verify UL Listing.

A For some products the UL Mark is on the smallest unit container. This is due to the size and/or shape of the product, which physically would not permit the UL Mark on the product itself.

For outlet boxes, the UL Listing Mark is required on the product, or the UL symbol on product and the Listing Mark of Underwriters Laboratories Inc. on the smallest unit container. This practice has been acceptable for many years. This information is detailed in the UL Guide information for "Metallic Outlet Boxes" (QCIT) located on page 74 of the 2001 General Information For Electrical Equipment Directory (White Book).

2.0 POWER DISTRIBUTION EQUIPMENT

- 2.1 (NW) Q Does UL consider the access and working space required by the NEC to be applicable to Listed products?
- A Yes, UL Standards address the issue of access and Working Space required by the Section 110.26 of the 2002 NEC®. Products such as Deadfront Switchboards and other products that contain electrical equipment that may require servicing, adjustment, etc while energized, are required to meet these requirements.
- 2.2 (NW) Q An example was provided where the AHJ expressed concerns with meeting the required working space in front of a panelboard in a UL Listed ATM enclosure.
- A Details have been provided to UL and a field report has been initiated to further investigate this matter.
- 2.3 (NW) Q Are dry type transformers with expanded metal bottoms suitable for installation on combustible floors?
- A These transformers are required to be enclosed. The enclosure shall house all uninsulated live parts. The bottom of the enclosure need not be provided (or may have openings) for transformers intended to be pad mounted. These types of transformers are required to be marked, "Not For Use On Combustible Floors."
- Dry type transformers are Listed under the category, "Power and General Purpose Transformers, Dry Type" (XQNX). The UL Guide information can be found on page 114 of the 2001 General Information for Electrical Equipment Directory (White Book). The standard used to investigate products in this category is UL1561, "Dry-Type General Purpose and Power Transformers".
- 2.4 (E) Q Dry type transformers are required to include the marking "no wiring Above this line". The location of the marking seems to vary quite a bit even for the same construction. Is there a specific requirement for the location of this marking, for instance at the level of the lugs? This appears to affect one specific manufacturer.
- A Enclosures for transformer are intended to provide for connection of supply and load wiring. An enclosure intended to provide for the passage of wiring shall be marked to indicate the locations for field wiring entry. That

exact location of this marking is not specified in the standard but is determined through the investigation. The location may vary depending on the particular transformer.

If there's a concern with a specific transformer, please provide us with more details so we can investigate this matter.

2.5
(SW)

Q Are there engine generators UL Listed to UL 2200?

A Yes, there are several manufacturers that have a variety of their stationary generators Listed under the category "Engine Generators" (FTSR). UL 2200, the Standard for Stationary Engine Generator Assemblies, is used to evaluate these generators. The UL guide information can be found on page 32 of the 2001 White Book. This category also appears in the 2001 Electrical Construction Equipment Directory (Green Book) on page 110.

3.0 CIRCUIT BREAKERS

3.1 Q How can you tell how many tandem breakers are allowed in a lighting
(E) and appliance panelboard?

A Section 408.14 of the 2002 NEC® defines a lighting and appliance panelboard as a panelboard having more than 10 percent of its overcurrent devices rated 30 A or less, for which neutral connections are provided. Once a panelboard is classified as a lighting and appliance branch-circuit panelboard, certain limitations are placed on the number of overcurrent devices that may be installed.

Section 408.15 of the 2002 NEC® requires physical means to be provided to prevent the installation of more overcurrent devices than the number for which the panelboard was designed and rated. In no case shall the number exceed 42.

Using these concepts, UL adopted the term “Class CTL” (a contraction of “Circuit Limiting”) to help AHJs with installations of lighting and appliance panelboards. All CTL lighting and appliance branch-circuit panelboards are required to be marked “Class CTL Panelboard” at the factory.

Class CTL panelboards incorporate physical (rejection) features which in conjunction with the physical size, and configuration of a CTL circuit breaker, prevents the installation of more overcurrent poles than the number for which the panelboard is designed and rated.

Some circuit breakers are not provided with a means to prevent their installation in CTL assemblies. These circuit breakers are for use in old style, non-Class CTL equipment and are marked “For Replacement Use Only, Not CTL Assemblies”.

The UL Guide information for Molded Case Circuit Breakers (DIVQ) can be found on page 12 of the 2001 White Book.

4.0 LIGHTING PRODUCTS AND SIGNS

4.1
(NW)

Q Are the break-away bases for street lighting poles Listed?

A Presently, there are devices Listed as special purpose breakaway connector systems that may be used in street lights. These products are Listed under the category, "Connectors, Special Purpose" (ECIS). The UL Guide information can be found on page 22 of the 2001 White Book.

UL also Classifies Luminaire poles under category, "Luminaire Poles" (IEUR). The UL guide information can be found on page 37 of the 2001 White Book. This category is for poles that exceed 12 feet in length. These poles are evaluated as: a raceway for supply conductors, grounding termination means for equipment grounding purposes, means of access to the wiring system, and for use in wet locations. They are not evaluated for wind loading or mechanical strength.

4.2
(E)

Q There is a controversy regarding HID luminaires. A new style lamp is available that is intended to fit into a special lampholder. Can the new lamp be used in the old fixtures?

A Replacing the existing lampholder of a HID Luminaire with a "special" lampholder should be considered a significant alteration of the UL Listed product in the field. As such, UL does not know what effect this alteration may be on the safety of the product or the continued validity of the UL Listing unless the alteration is specifically evaluated by UL.

Even if the "new" lamp fits into the existing lampholder where the existing lampholder didn't need to be replaced, then UL would still have concerns. Luminaires are marked with the ANSI designation of the lamps that are intended to be used in the luminaire. Presumably, the "new" lamp designation is not marked on the luminaire. The Listing of the HID luminaire only extends to the lamps that are marked on the product.

4.3
(SW)

Q Has the standard been completed for low-voltage lighting? If not, when will it be completed?

A UL is in the process of developing a specific standard for these types of products. It will be titled the Standard for Safety for Low Voltage Lighting Systems, UL 2108. A draft of the standard was proposed on July 9, 1999. In response to comments received, UL proposed revisions to the draft requirements on 6/16/00, 9/11/00, and again on 6/26/01. UL is reviewing comments received from the last bulletin and plans to submit the proposal to the STP for ballot before the end of the year.

Once UL 2108 is adopted, a file review will be initiated to assure that all manufacturers are in compliance with the requirements in UL 2108.

4.4 (SW) Q What are the differences and applications of Type IC, Inherently Protected, and Type Non-IC luminaires?

A The UL Guide information for Incandescent Recessed Luminaires (Fixtures) (IEZX) located on page 41 of the 2001 White Book defines these types of luminaires as follows:

TYPE IC LUMINAIRE — Luminaires marked "TYPE IC" may be installed such that insulation and other combustible materials are in contact with, and over the top of, the luminaire. Type IC luminaires are provided with thermal protection to deactivate the lamp should the luminaire be mislamped.

INHERENTLY PROTECTED LUMINAIRE — A recessed luminaire which does not exceed temperatures greater than 90 C on outside surfaces, even when covered with insulation and mislamped or overlamped, is identified by being marked "INHERENTLY PROTECTED."

TYPE NON-IC LUMINAIRE — A Recessed Luminaire that is intended to be installed in an uninsulated or insulated ceiling (or wall), with all insulation kept a minimum distance of 3 inches from the sides of the luminaire and not placed over the luminaire such that it would entrap the heat produced by the luminaire. Other combustible materials are spaced, except at the points of support, at least 1/2 inch from the luminaire.

Type Non-IC Luminaires are provided with thermal protection to deactivate the lamp(s) should insulation be placed over or in contact with the luminaire. For proper heat dissipation, Type Non-IC luminaires are intended to be installed in a cavity as follows: If not marked with any spacing information, the luminaire is intended to be installed not closer than 1/2 inch from any surface forming the cavity behind the recessed portion of the luminaire and not closer than 1 inch from adjacent luminaires.

4.5 (SW) Q Does each individual part of an electric sign require a "Section ___ of ___" marking?

A A UL Listed sign may be shipped in sections only when the sections form a complete sign and complete instructions for field assembly are provided. Each major subassembly is required to bear an electric sign section marking. Separate channel letters are considered major subassemblies

and require a section marking. Sign faces, trim and mounting hardware are not considered major subassemblies.

The “section” marking criteria is in the process of changing. The UL Guide information has recently been revised to require each section to bear an “Electric Sign Section” Listing Mark in lieu of the “Section ___ of ___” marking. Therefore, the “Section ___ of ___” is no longer required. The “Section ___ of ___” marking is being accepted by UL until the “stock” runs out.

Electric signs are Listed under the category, “Signs” (UXYT). The UL Guide Information can be found on page 96 of the 2001 White Book.

4.6
(SW)

Q In regard to GTO cable installation instructions, what information is required by Listing and what information is being added by the manufacturer?

A Installation instructions are considered part of the UL Listing. All info added by the manufacturer in addition to that required by UL must be in compliance with NEC and UL standard. The UL standards used to investigate and List products, contain specific requirements regarding the content and appearance of the instructions. Installation instructions are not required to be marked with the UL Mark, but they are required to be provided with the product bearing the UL Mark. Some products are not required to have installation instructions because the National Electrical Code contains all the necessary installation requirements, such as outlet boxes and various wiring methods. UL staff review the instructions, both in the initial evaluation of the product, as well as during the continual inspections at the factories. The clarity of the instructions is considered in the review.

If there are questions regarding installation instructions, please contact your Regulatory Services Representative.

4.7
(SW)

Q I had a light installed in a shower. The manufacturers literature indicates that it must have a GFCI installed. Is the GFCI required as a condition of Listing or simply something that the manufacturer wanted to add

A UL Listed Luminaires are evaluated for compliance with the Standard for Luminaires, UL 1598. The UL Standard does not require GFCI protection for luminaires used in the shower area. If the manufacturer chooses to require GFCI protection in their installation instructions, then Section 110.3(B) of the NEC® would be applicable.

The UL Guide information for “Luminaires” (IETX) can be found on page 37 of the 2001 White Book.

It is important to note that combination bathroom ceiling-insert exhaust fan/lights are required by the applicable UL Standard, UL 507, to be marked, “Acceptable for use over a bathtub or shower when installed in a GFCI protected branch circuit.” In this case, the UL Standard does require GFCI protection in the branch circuit supplying the product, and again Section 110.3(B) of the NEC® is applicable.

The UL Guide information for “Electric Fans” (GPVV) can be found on page 189 of the 2001 White Book.

5.0 WIRING SYSTEMS

- 5.1 (NW) Q Are Types USE and USE-2 suitable for exposure to sunlight?
- A All UL Listed Service Entrance cables are required to be sunlight resistant as part of their Listing. Both the cable assembly and the individual inner conductors are sunlight resistant, and neither is required to be marked. This information is noted in the UL Guide Information which can be found on page 95 of the 2001 White Book.
- As a side note, individual insulated conductors (such as THWN) that are not part of a Service Entrance Cable assembly, are not sunlight resistant, unless so marked, (i.e. "Sunlight Resistant.")
- 5.2 (NW) Q What good are expansion fittings in PVC conduit runs when the straps are so tight that the conduit cannot move in a lateral direction?
- A Non-metallic conduit expansion fittings are UL Listed under category, "Conduit Fittings" (DWTT) and are required to be installed in accordance with Article 347 of the 1999 NEC® and Article 352 of the 2002 NEC®. The UL Guide information can be found on page 18 of the 2001 White Book.
- Section 347-8 of the 1999 NEC® and Section 352.30 of the 2002 NEC® indicate that the rigid nonmetallic conduit shall be fastened so that movement from expansion or contraction will be permitted. It is up to the AHJ to determine the suitability of the straps in this type of application. It is our understanding that generally, AHJ's require straps that are one size larger than the conduit in order to allow for movement.
- 5.3 (E) Q How does the AHJ in the field differentiate between a Wiring Assembly and a Manufactured Wiring System? Article 604 of the NEC applies to Manufactured Wiring Systems. What article of the NEC applies to Wiring Assemblies?
- A Manufactured Wiring Systems are Listed under the category "Manufactured Wiring Systems" (QQVX) located on page 86 of the 2001 White Book and covered under Article 604 of the NEC®. These systems are investigated for compliance with the Standard for Manufactured Wiring Systems, UL183. Manufactured Wiring Systems typically employ modular non-standard configuration connectors to interconnect the various parts of the system.
- A Wiring Assembly is a collection of Listed parts, factory assembled in accordance with NEC® requirements applicable to the wiring methods and parts employed. They are Listed as a Wiring Assembly and intended to be installed in accordance with the NEC® articles covering the individual parts intended use. UL requires the packaging of a Listed, Wiring

Assembly to include an itemized identification of the parts that make up the assembly, as well as installation instructions to enable the AHJ to determine the acceptability of the installation.

A typical assembly, for example, might consist of a length of Listed Flexible, Liquid Tight Conduit, with Listed fittings installed at each end, and prewired with 14 AWG, THWN conductors for connecting between an air conditioning unit and its disconnect.

Wiring assemblies are Listed under the category “Wiring Assemblies” (QQYZ) also located on page 86 of the White Book. The “Product Identification” portion of the Listing Mark for each type of product will appropriately identify the product as a Manufactured Wiring System or a Wiring Assembly.

5.4 (E) Q Concerning an assembly of Type RHH wire in EMT with a two-hour fire rating, is it Listed as Circuit Integrity Cable and is it acceptable because it is Listed RHH wire?

A Fire resistive cables are Classified under the category, “Fire Resistive Cables” (FHJR). The UL Guide information can be found on page 233 of the 2001 White Book. Cables under this category are intended for installation in specific Electrical Circuit Protective Systems (FHIT) (located on page 232 of the 2001 White Book) as marked on the product or the smallest unit container. An example of the marking is noted below. This information is required to be provided along with the Classification Mark:

FIRE RESISTIVE CABLES
FOR USE IN ELECTRICAL CIRCUIT PROTECTIVE SYSTEMS
SYSTEM NO. _____
SEE UL FIRE RESISTANCE DIRECTORY

Presently, we are aware of one design (System No. 25) that uses RHH cable and EMT. This electrical circuit protective system can be found on page 1074 of the 2002 Fire Resistance Directory (Vol. 2). As indicated in the design only a specific RHH cable that is additional Classified as “Fire Resistive Cable” can be used, and it must be marked as indicated for design no. 25.

This design can also be viewed on the UL Online Certifications Directory at www.ul.com/database.

Additionally, Circuit Integrity Cable, marked “CI” (max. voltage__) applies to Fire Alarm cable per Article 760 of the NEC®. See pages 34-35 of the 2001 White Book.

There is at least one manufacturer who has Listing.

5.5 (E) Q Are there any listed compounds to protect field cut threads from corrosion? It is now required by the 2002 NEC®?

A Yes, UL has recently developed a product category titled, "Electrically Conductive Corrosion Resistant Compounds" (FOIZ).

This category covers electrically conductive corrosion resistant compounds for use on the threads of rigid metal conduit (RMC) and intermediate metal conduit (IMC). The compounds resist corrosion and provide electrical conductivity in accordance with Section 300.6(A) of the NEC® when used in accordance with the manufacturer's installation instructions.

The basic requirements used to investigate products in this category are contained in Subject 2419, "Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds."

Presently, there is at least one Listing.

5.6 (E) Q Can Listed Conductor Termination Compound be used to satisfy 300.6(A)?

A Compounds Listed as a termination compound are intended for use on splice and termination connections. The application described in Section 300.6(A) is outside the scope of these Listings. The UL Guide information for "Conductor Termination Compound" (DVYW) can be found on page 18 of the 2001 White Book.

5.7 (E) Q Has any tests been performed on Type NM cable installed in walls that have been filled with expanded foam insulation?

A Presently, we are not aware of any special tests that have been performed for this type of installation. The use of foam insulation came after the development of Type NM-B cable. NM-B's higher temperature rating is to address installation within insulated walls of all types. NM-B cable requires that the conductor insulation be rated for 90 degrees C, and that the cable ampacity be determined using the 60 degrees C values.

6.0 WIRING DEVICES

6.1 Q Is it a requirement to use corrosion inhibitor with aluminum wire
(E) terminations?

A No. However, some of the connectors are prefilled with UL Listed antioxidant compounds at the factory. For the non-prefilled connectors, the antioxidant compounds may be used if recommended by the manufacturer, but it is not required. The non-prefilled connectors meet the requirements in UL 486B, the Standard for Wire Connectors for Use with Aluminum Conductors, without the compound.

Wire connectors are covered under the category Wire Connectors and Soldering Lugs (ZMVV). The UL Guide Information can be found on page 122 of the 2001 White Book.

Antioxidant compounds are covered under the category Conductor Termination Compound (DYYW). The UL Guide Information can be found on page 18 of the 2001 White Book. Compounds under this category have been evaluated and shown not to cause adverse effects on the conductor/connector combination.

7.0 OUTLET BOXES

- 7.1 (E) Q Sometimes fire rated wall constructions are modified by the addition of paneling and an extension ring is used in the box to make the device flush again. Are extension rings fire rated?
- A Presently, we are not aware of any Listed metal extension rings that have a fire rating. However, the use of a metal extension ring on a properly constructed fire rated wall assembly should be considered acceptable. The important thing to consider is the clearance between the outlet box and the gypsum wallboard. The maximum allowable clearance is 1/8 inch. As long as this spacing is in compliance, the use of a metal extension ring would not adversely affect the integrity of the membrane and the wall would maintain its fire rating.
- 7.2 (E) Q When using a PVC outlet box with knockouts and integral clamps, are the knockouts required to be fully removed?
- A UL requires the knockouts to be capable of being removed with a specified force and to be removed completely so as to not obstruct the wire entry.
- 7.3 (E) Q When using a molded fiberglass box with integral clamps and Type NM Cable, can the clamp be removed and discarded if the box is installed following the requirements for boxes without clamps?
- A The Exception to Section 314.17(C) of the NEC® permits cable to be used without securing it to the box provided the box is single gang, the cable is fastened within 8 inches of the box and the sheath extends through a cable knockout not less than ¼ inch. If the installation meets this criteria, the clamps would not be necessary to comply with the Code
- 7.4 (E) Q Some boxes are sold with the clamps packaged in bulk, rather than Installed in the box. You don't get them unless you ask for them. The UL White Book and box requirements do not seem to prohibit this practice but do not address it specifically either.
- A Nonmetallic Boxes are Listed under the category, "Nonmetallic Outlet Boxes" (QCMZ). The UL Guide information can be found on page 75 of the White Book.

Boxes may or may not be provided with clamps. When clamp are provided they are required to be already mounted in place or provided in the carton with the outlet box. If the boxes are bulk packed, the clamps may be in a separate bag, but are still required to be provided in the same carton.

An exception to this is, if the box is marked for use with a specific clamp. The marking shall include the manufacturer's name, catalog number, and the type.

8.0 APPLIANCES AND UTILIZATION EQUIPMENT

- 8.1 (S) Q The question was asked whether control panels, for use with motorized spa and swimming pool cover operators, are tested for wet locations, and if so, are they required to utilize sealing or potting compound?
- A Motorized or automatic pool cover operators include a control box. This control box may require a field supplied outdoor enclosure if used outdoors. If an additional enclosure is required, it must be specified in the installation instructions. Whether the use of sealant is required should also be specified in the installation instructions.

Pool cover operators are Listed under the category, "Swimming Pool And Spa Cover Operators, Electric" (WDDJ). The UL Guide information can be found on page 102 of the 2001 White Book. Products covered under this category are intended for installation in accordance with Article 680 of the NEC®.

Some products Listed under this category may incorporate pool covers that are Classified under the category, "Covers For Swimming Pools and Spas" (WBAH) located on page 99 of the White Book. Unless Classified as a power safety cover under the category of "Covers For Swimming Pools and Spas" (WBAH), a cover provided with the operator has not been evaluated as a safety cover. This can be determined through markings on the cover itself. Safety covers are intended to be placed over the water area to impede access to the contained body of water.

- 8.2 (E) Q Does UL have a standard for gate operators or turnstiles?
- A Yes, these type of products are Listed under the category, "Door, Drapery, Gate, Louver, and Window Operators and Systems" (FDDR). The UL Guide information can be found on page 188 of the 2001 White Book. The requirements used to evaluate these products is the Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems, UL325.

The requirements in UL325 cover electric operators for doors, draperies, gates, louvers, windows and other opening and closing appliances rated 600 volts or less to be employed in ordinary locations in accordance with the NEC®. These requirements also cover complete doors, gates, and other such assemblies that include electric opening and closing appliances.

In addition, accessories, such as external entrapment protection devices, for use with these appliances are covered by this standard.

Doors and door operators intended for exit use are additionally subject to

design requirements specific to such use.

8.3 (E) Q For gas- or oil-fired equipment such as a furnace with a “fuel gas appliance” label, has UL looked at the electrical part of the equipment?

A Yes. If UL has evaluated the product, then the electrical portion of the product is included as part of the evaluation.

UL has launched a new Gas-Fired Listing Mark that will replace UL’s prior Classification Mark for gas-fired products. The main reason for the new mark is to remind everyone that a product with the UL Gas-Fired Mark means it has been evaluated not only for electrical safety, but for its gas safety as well. For additional information, see *The Code Authority*, spring 2002 edition. This newsletter can also be viewed on UL’s Web site at www.ul.com/auth/tca. You can also view previous issues of *The Code Authority* on this site.

8.4 (E) Q An engineering firm has said that the ASTM Standard for PVC pipe is compatible with the UL Standard for Schedule 40 PVC Conduit. Are they the same?

A UL Lists PVC pipe under the category “Pipe and Pipe Fittings” (QNMJ). The UL Guide information can be found on page 90 of the 2001 Plumbing and Associated Products directory. Plastic pipe and pipe fittings are evaluated and tested in accordance with the applicable ASTM Standards. UL Lists PVC conduit under the category “Rigid Nonmetallic, Schedule 40 and Schedule 80 PVC Conduit” (DZYR). The UL Guide information can be found on page 21 of the 2001 White Book. These products are evaluated for compliance with UL 651, “Schedule 40 and 80 Rigid PVC Conduit,” and are intended for installation in accordance with Article 352 of the NEC®.

In this case, the applicable ASTM Standard and UL 651, “Schedule 40 and 80 Rigid PVC Conduit,” are not the same, compliance with one of these standards does not ensure compliance with the other.

8.5 (E) Q For refrigerated cases used in gas stations and quick marts, why isn’t the UL label on the doors or some other accessible location?

A UL Standards require labels to be located in a readily visible location after installation. Tools should not be required to disassemble the product to view the UL Mark. Typically, the UL Mark is located at or near the field wiring compartment.

With the refrigerated case, it may be necessary to remove a snap off cover

such as the kick plate in order to see the UL Listing Mark. The exact label location may be selected by the manufacturer and aesthetics is usually a factor.

The description of the UL Mark for each type of product is specifically described at the end of each product category's Guide Information, as detailed in the General Information for Electrical Equipment Directory (White Book), as well as all the UL Product Directories.

8.6
(SW)

Q Does UL List portable Exhibition Displays?

A UL Lists these type of displays under the category "Exhibition Display Units, Portable and Modular" (XNSN). The UL Guide information can be found on page 220 of the UL White Book.

This category covers portable tradeshow displays, hanging components and other exhibit assemblies that may be interconnected to form an exhibition display unit.

Portable exhibition displays are intended to be moved. They are hand carried and set up without tools, and do not require trained personnel to setup.

Products under this category are intended to be installed in accordance with Article 518 of the NEC®.

9.0 OTHER TOPICS

- 9.1 (S) Q An increasing number of jurisdictions are requiring pool alarms to be installed at doors and windows of residences to protect pool areas. Does UL have a product standard for swimming pool alarms specifically for installation in windows and doors of residences.
- A Yes, UL Lists alarms that are intended to be installed on gates, doors or access barriers surrounding residential swimming pools, spas, or hot tubs for the purpose of sounding an audible alarm due to unauthorized entry into these areas. Listed alarms are required to produce a continuous audible alarm signal for 30 seconds or longer whenever entrance through the access barrier occurs. The audible alarm will have a minimum sound level pressure of 85 decibels at 10 feet and will be distinctive from other household sounds such as smoke detectors.
- These alarms are Listed under the product category Residential Water Hazard Entrance Alarms (UDGJ), located in the Electrical Appliance and Utilization Equipment Directory. The products are investigated in accordance with UL 2017, the Standard for General-Purpose Signaling Devices and Systems. The operational requirements in this standard are based on requirements developed by the U.S. Consumer Product Safety Commission (CPSC).
- Many local ordinances require a device such as a swimming pool entrance alarm where a house forms the fourth side of a barrier around a residential pool, so that if a child enters the pool area unauthorized, the alarm will sound.
- 9.2 (NW) Q Does UL provide certification of equipment for compliance with Seismic Zone Testing requirements?
- A Yes, sometimes UL is requested to List products to address specific conditions. Often we can develop requirements to address those conditions such as seismic requirements.
- 9.3 (SW) Q How many manufacturers have Listing for paint spray booths?
- A The category for Paint Spray Booths has been divided into two categories, "Paint Spray Booths with Fire Protection Systems for Use in Hazardous Locations" (QEFY) and "Paint Spray Booths without Fire Protection Systems for Use in Hazardous Locations" (QEFA). Products covered under, Paint Spray Booths without Fire Protection Systems for Use in Hazardous Locations" (QEFA) are not provided with a factory installed automatic fire protection system. A UL Listed fire

protection system is intended to be provided by the installer and approved by the Authority Having Jurisdiction.

Presently, there is one Listing under each of these categories. The UL Guide information for these categories can be found on UL's on-line Certifications Directory at www.ul.com/database.

8.4 (E) Q Who labels manufactured homes? Do they have a UL label?

A These structures are Classified under the category, "Manufactured Homes" (PDOV). The UL Guide information can be found on page 159 of the 2001 Building Materials Directory.

Products under this category have been Classified in accordance with the Federal Department of Housing and Urban Development Manufactured Home Construction and Safety Standards, Title 24CFR, Part 3280, December 18, 1975.

Structures Classified under this category are provided with a UL Classification Mark near the data plate that reads:

MANUFACTURED HOME
CLASSIFIED BY
UNDERWRITERS LABORATORIES INC.
See HUD label

The structure shall also have the HUD label which is administered by UL.