Date: 06Jun2017.
Location: Santa Ana Elks Lodge, 212 S. Elk Lane, Santa Ana, California.
Called to order by Henry Martinez ~12:05 p.m.

Self introductions by new attendees: Crystal Long with the City of Orange; Ernie Pelayo with Disneyland Resort and Instructor with LATTC; and Chris Perry, Jay Guerrero and Stefan Southas with HMT Electric, inc, Escondido, CA.

Approval of May minutes was postponed.

**Treasurers Report**
The Treasurer's report was given by Henry Martinez.

**Membership Comm. Report**
Postponed.

**Old Business**
None addressed.

**New Business**
None addressed.

**Code Questions**
Scott Davis spoke about the changed definition for "readily accessible". For the specific topic of required readily-accessible disconnect switches being OK behind a locked door: See 100, 240.6(C)(3), 240.21(H), and 225.32 (exceptions). He opined that per this change a key in the
hand of a "qualified" person is not a tool, but a key in the hand of a non-qualified person is considered to be a tool. One example is section 525.21.

Ben Ellingson with Newport Beach spoke about wet niches for forming shells for speakers. He asked if anyone knew why such forming shell is required to be metallic. Rich Berman said that the UL standard calls for such metallic forming shells. He added that a UL engineer mentioned that metallic shells are less susceptible than PVC shells to dimensional changes caused by pressure and temperature changes; and that such dimensional changes may change sonic power output. Ben added that the installation instructions for the product in question calls for a metallic forming shell. Dan Vaughan opined that the requirement may be in the Code because the metallic forming shell provides a means to achieve the required bonding of the metal screen of the speaker.

**Inspector Time**
None taken.

**Contractor Time**
None taken.

**Consultant Time**
None taken.

**Manufacturer Time**
Ben Abrishami with Eaton/Cooper Bussman announced that he had set up a display of a panelboard with branch-circuit fuses. Scott added that for selective coordination needs at small amperage circuits, it might be a good solution.

**Testing Lab Time**
Rich Berman of UL spoke about a Leviton occupancy sensor vis-à-vis Class 1 or Class 2 labeling on the product. Also he mentioned that UL issues public notices for problems with a product if problems cannot be resolved with the manufacturers. He added that UL recently issued a public notice on counterfeit electronic ballasts; and that UL public notices will pop up on LinkedIn. Rich went on to advise that: UL has recently published requirements for PV modules up to 1500 Volts; and May was building safety month, for which UL posted good resources, which will be up for quite some time at ul.com/buildingsafetymonth.

Mel with Intertek reminded the group that, at an ETL mark, one must see a "C" or a "US" with the label; unlike the requirements for a UL mark.
Utility Time
None taken.

Education Program: Analysis of Changes, 2014 NEC.
Presented by Scott Davis, began at 12:48 p.m.

Here is some of what Scott covered for changed sections in Chapter 6 (Special Equipment).

600.4(E) Installation Instructions (Signs): installation instructions are required. Exception for cord-connected signs. (Rich: retrofit kits not being installed per instructions; lots of Cities do not require permits and inspections, but they should, and utilities should require proof of inspection before issuing the rebates.)
600.6(A)(1) At Point of Entry to a Sign Enclosure [Disconnects for Sign(s)].
600.7(A)(1) Equipment Grounding.
Don't need a listing for electrical "artwork".
600.2 Definition of skeleton tubing.

625 was renumbered and reorganized to provide a logical sequence and put into three parts. Part I General, Part II Equipment Construction, and Part III Installation. Conflicts with UL Standards 2594 and 2202 were removed.

630.13 (Welders) Disconnecting Means must IDENTIFY the welder supplied. The term “identified” was often thought to be a manufacturer duty as part of the labeling. It has always meant for the specific equipment that is controlled by the switch to be described. This rewrite will eliminate that confusion.

680.2 Definitions section now include Storable/Portable Spas and Hot Tubs.
680.12 Maintenance Disconnecting Means (for fountains) at least five feet away from water edge.
680.21(C) GFCI Protection (Motors). All single-phase, 120 V to 240 V outlets supplying pump motors require GFCI protection, regardless of ampacity or horsepower.
680.22(A)(1) Required Receptacle Location. At least one 125-V not less than 6 feet or more than 20 ft from water, for ALL occupancies.
680.22(A)(2) Circulation and Sanitation Receptacle Location; Receptacles that supply pool pumps. ...need not be locking type.
680.22(B)(6) Low-V Luminaires (See 680 Definitions.)
680.25 (A)(1) Wiring Methods (Feeders). Exception for an existing feeder has been removed.
680.26(C) Equipotential Bonding (Pool Water) ...nine square inches must be intentionally bonded and in full contact with water.

680.42(B) Outdoor Spas and Hot Tubs (Bonding) subsections (1), (2), (3) and (4) are new.

680.57(B) Signs in Fountains (GFCI). In either branch or feeder circuit. Only one is required.

690.2 Definitions: DC to DC Converter and Direct Current (dc) Combiner.
690.5(A) Ground-Fault Detection and Interruption. Must be listed for PV.
690.7(F) Disconnects and Overcurrent Protection. Max 5 feet of cable to a battery. Bi-directional.

690.9 Overcurrent Protection (PV Systems). ...listed equipment required. Excellent Cheat Sheet in the IAEI 2014 Code Analysis publication.

690.10(E) Back-fed Circuit Breakers (Stand-Alone Systems). "Multimode" output in stand-alone systems was added to the requirement. (Multimode inverters allow one to use the PV system as a stand-by source if utility power is lost.)


690.31(B) Methods Permitted (Wiring Methods) / Identification and Grouping. “Inverter Output Circuits" were added.

690.35(C) Ground-Fault Protection (Ungrounded Photovoltaic Power Systems) GFP must be listed for PV and now pick up a fault anywhere in the array.

690.41 System Grounding (PV Systems). Expect to see an auxiliary electrode. As written this is a mandatory requirement. When the array is close to other electrodes they may suffice.

690.47(D) Additional Auxiliary Electrodes for Array Grounding.

694 Wind Electric Systems (Rather than "Small Wind Electrical Systems"). All size systems are now treated the same.

Adjourned by Henry at 2:23 p.m.

Minutes respectfully submitted by Dan Vaughan.