



President: Mark Chrysler
1st Vice President: James (Rusty) Anderson
2nd Vice President: Martin Montessoro
Secretary: Tiffany Kirk
Treasurer: Steve Jones
Membership Chair: Dean Mastrovic
Education Chair: Bruce Barnes
Sergeant at Arms: Nancy Martinez
Ex-Officio: Bruce Barnes
Other Members: Billy Duggins and Pat Healy

IAEI Border County Division
San Diego, California
Minutes for November 8, 2011
12:00 p.m. No-Host Lunch
1:00 p.m. - 3:00 p.m. Meeting
Sizzler Restaurant (Meeting Room)
3755 Murphy Canyon Road
San Diego, CA 92123

1. Call to Order and Self Introductions

The meeting was called to order by Mark Chrysler, President of the Border County Division, at 1:03 P.M. 35 in attendance made self introductions including 4 first timers.

2. Review and Approval of Minutes

Minutes from the October 11, 2011 meeting were reviewed and approved as presented.

3. Reports

Treasurer's Report: Steve Jones was not present. Tiffany Kirk presented the treasurer's report which was reviewed and approved as presented.

Membership: Dean Mastrovic reported there were no changes to membership. We still have a total of 78 members for the Division. Mark reiterates the importance of membership and encourages non-members to become members.

Education: Bruce Barnes reported today's education will be presented by Chuck Skinner and December's presentation by Chuck Leisher. Also, the education presentations have been scheduled for the first half of next year. However, the second half is still open so please send in any suggestions for education topics to Bruce Barnes.

4. Old Business – Mark Chrysler encourages participation for the officers from the inspector members and on the board of directors from the associate members. Elections for the 2012 office will be at the December's meeting.

5. New Business – the Chapter meeting will be next Wednesday, November 16, 2012. The education is on “Feeder Taps” and a free lunch for all guests attending the meeting with a member. Mark reported the ad-hoc committee for hosting the Section meeting here in San Diego next summer is doing a great job and making great wave towards a successful meeting. Pat and Mark asked for feedback from the members on education topics for the Section meeting. Mark reiterates the benefits and importance of attending a Section meeting.

6. Education Program

Presenter: Chuck Skinner – Senior Engineer, Field Evaluation Services with TUV America

Subject: Overview of NFPA 70 “Articles 409 Industrial Control Panels and Article 670 Industrial Machinery”

The following were covered in the presentation:

- ❖ Article 409 & Article 670
- ❖ NFPA 70
- ❖ NFPA 79 Industrial Machinery
 - 3.1
 - 7.2 Overcurrent Protection
 - 7.2.1 General
 - 7.2.1.1, 7.2.1.2
 - 5.3.4.1 Operating Handle
 - 4.8 Available Fault Current
 - The available fault current at the point of supply to the machine shall not be greater than the SCCR rating on the industrial control panel nameplate.
 - SB4.1 Short circuit current rating
 - SB4.1.1 The short circuit rating of the overall industrial control panel shall be determined based upon
 - a) First, establishing the short circuit current rating of the individual power circuit components as specified in SB4.2;
 - b) Second, modifying the available short circuit current within a portion of a circuit in the panel due to the presence of current limiting components as specified in SB4.3, when applicable; and
 - c) Third, determining the overall panel SCCR as Specified in SB4.4
- ❖ 2008 National Electrical Code
- ❖ 2011 National Electrical Code
- ❖ 409 Industrial Control Panel
 - 409.1 Scope
 - 409.2 Definitions
 - 409 Other Articles – See Table 409.3

- 409.20 Conductor – Minimum Size and Ampacity
- 409.21 Overcurrent Protection
- 409.22 Short Circuit Current Rating
- 409.30 Disconnecting Means
- 490.60 Grounding
- 490.100 Enclosures
- 409.102 Busbars and Conductors
- 409.104 Wiring Space in Industrial Control Panels
- 409.104(A) General
- 409.104(B) Wire Bending Space
- 409.106 Spacings
- 409.108 Service Equipment
- 409.110 Marking
- ❖ 670 Industrial Control Machinery
 - 670.2 Definitions – Industrial Machinery (Machine)
 - 670.3 Machine Nameplate Data
 - 670.3(B) Overcurrent Protection
 - 670.4 Supply Conductors and Overcurrent Protection
 - 670.4(B) Disconnecting Means
 - 670.4(C) Overcurrent Protection
 - 670.4(C) Overcurrent Protection *Exception*
 - 670.5 Short Circuit Current Rating
- ❖ UL 508A Industrial Control Panels
 - Scope
 - 1.5, 1.6.1, 1.6.6, 1.6.8, 1.6.12
 - Since Article 409 has no requirements for use of components we have to look at UL 508A to determine what components need to be used.
 - Components
 - 4.1
 - 4.2
 - 29.2 Conductor Requirements
 - 31 Branch Circuit Protection
 - 31.1 Component Requirements
 - 31.1.1, 31.1.2, 31.1.3, 31.1.4, 31.1.5, 31.1.5.1, 31.1.6, 31.1.7
 - 30.3 Location
 - 30.3.1, 30.3.2, 30.3.4, 30.3.5
 - 14 Grounding – General
 - 14.1, 14.2, 14.3, 14.4
 - 18 Enclosures
 - 18.1, 18.2, 18.3
 - 25 Wire Bending Space
 - 25.1

7. Code Question(s) of the Month – Bob Nagle had a question for the Testing Group. He asked if Standards 1072 for medium voltage included direct buried cable. Mark Chrysler also had a question about how direct cable gets certified if it's not surface marked and what makes a cable qualify for direct burial. Per Rich Berman with UL, direct buried cable is marked with a tag but surface marking is not permitted. Rich is not sure why that is. Bob also asked if there's a standard for direct buried cable. Rich stated there isn't a standard for direct buried cable. He'll look further into these questions and get back to the group at the December's meeting.

8. Organizational Time

Inspectors – Rusty had a question for UL, Rich Berman. He wanted to know what a split bolt is listed for. Rich said it's listed for grounding and bonding. Can a split bolt be used to splice or add to an equipment grounding conductor solid #8 or stranded conductor to continue the circuit on? Rich said it depends on the size and its actual listing. Rusty also wanted to know if it's considered continuous when a split bolt is used. Rich doesn't consider this to be continuous. Rusty mentioned that his inspectors came back from a seminar and was told that a split bolt can't be used in a splice and that it isn't considered continuous. Rusty stated that he sees this all of the time in Solar installations. Nancy Martinez wondered if the split bolt is a concern due to the micro inverter. There seems to be a consensus. Rusty gave a heads up that there were 2 instances in the past month where a ground wire was not continuous in conduit. This was discovered by the inspectors for the County of San Diego. These were installations that were related to Solar.

Nancy reported the ICC is offering 2 scholarships of \$500 each to students pursuing a degree or employment in the Plan Review or Inspection field. One scholarship will be awarded to a jurisdictional employee and the other to a non-jurisdictional employee. Applications are available on line or you can see Nancy. The deadline is December 2, 2011. A contractor told Nancy there's a shortage of NM 3/0 cable and wanted to know if it's acceptable to use TC cable as a feeder. The TC cable will run through studding and not through a cable tray. Rich Berman said per 336.10(7), it is not permitted.

Consultants – None

Testing Agencies – Rich Berman with UL provided the UL Electrical Connections Newsletter and materials. He also said the new NFPA Standards 790 & 791 are now available hard copy and on line. These Standards cover Competency and Practice for Field Evaluating Companies. In addition, UL is teaming up with Disney Muppet characters to provide safety information for the Holidays. The website is www.safety@home.com "commit a minute to safety".

Contractors – Brian Grems with Stellar Solar recently attended a Solar Power conference in Dallas and reported there is a big push for AC modules. This AC module

is similar to the micro inverters but the micro inverter is already built in and bonded to the panel frame and the installers wouldn't have to do anything to the DC wiring. The manufacture claims an equipment grounding wouldn't need to be installed because it's already in the wiring harness. Brian will forward the information from the manufacture to the group for a closer look.

Tim O'brien with Morrow Meadows asked about a hand dryer being mounted on the outside of a cabinet and the cord is inside of the door along with the outlet. He was told MC cable is required. Is this true? The outlet is in the back of the wall. There's a trash receptacle inside the door. Tim felt the cord was a better way to go than the MC cable. He was told the cord needed to be attached just like a garbage disposal. Nancy asked if the hand dryer was listed to be cord connected. Nancy said the hand dryer should be installed as listed on the appliance, in this case the hand dryer.

Manufacturers – None

Utilities – Bruce reported that Steve Abeyta has been promoted and is no longer in the Service Standards Section. Bruce and Tiffany will continue to manage all of the work in our section until the new replacement is on board. Please continue to send all correspondences to Service Standards instead of Steve Abeyta.

9. Final Business – None

10. Adjournment

There being no further business, meeting was adjourned at 3:07 P.M.

Next meeting: Tuesday, December 13, 2011 at 1:00 P.M.

Respectfully submitted,

Tiffany Kirk
BCIAEI Secretary