FW: comments

Loyer, Joe@Energy

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Attachments: CEC public hearing 10-1-12.docx (120 KB)

Please docket this email in its entirety and the associated attached file.
Docket Number 2012-BSTD-02

From: Brook, Martha@Energy
Sent: Monday, October 01, 2012 11:02 AM
To: Loyer, Joe@Energy
Subject: FW: comments

Can you please docket these?

Thanks, Martha

From: Steve Mesh [mailto:steve@stevemesh.com]
Sent: Monday, October 01, 2012 10:34 AM
To: Brook, Martha@Energy
Subject: comments

Steve

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California Energy Commission

Public Hearing on acceptance testing for lighting controls

October 1, 2012

Statement:

My name is Steve Mesh. For the past 32 years, I've been a lighting designer and educator. I usually introduce myself as an ex-egomaniacal award-winning NYC lighting designer. 4 years ago, I moved from the east coast to San Francisco to become the lighting expert at PG&E's Pacific Energy Center. A year ago, I left to work independently and since then, I've been working with PG&E, SCE, SMUD and other utilities and entities around the country to develop lighting education programs.

Immediately upon joining the PEC, I was asked to join a small group of experts in developing the curriculum for the CALCTP course. I also taught three of the original "train-the-trainers" sessions. These sessions were taught at JATCs in LA and Sacramento. However, the last "train-the-trainers" session that I taught (at the West Sacramento JATC) was targeted at trainers who were also instructors at community colleges.

Due mostly to the foresight of Doug Avery of SCE and Bernie Kotlier (a consultant to NECA/IBEW) – and with the full support of many of the California utilities as well as the CEC – this great program quickly took shape. To date, to my knowledge, approximately 2000 certificated California electricians have taken and successfully passed the CALCTP course. That has given those electricians a very solid foundation in and exposure to the world of complex lighting controls – meaning anything more than just a simple on-off wall switch.

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At this point, the CALCTP content for the actual certificated electricians is a 50-hour course consisting of a series of half-day modules. Each module addresses a different category of control device – for example: occupancy sensors, photosensors, low-voltage relays, etc. During each module, a short lecture is followed by hands-on work where every single student must successfully wire, commission and program every single device. At the end of the 50-hour program, students must also pass a written test with a score or 70 or above.

There is a substantial amount of rigor regarding the administrative and record-keeping aspect of the CALCTP program. To my knowledge, it's the first of its kind in the country, and probably in the world. As such, it certainly makes sense to reference CALCTP in upcoming code language concerning "acceptance testing" – which is the subject of today's hearing. To my knowledge, there is not yet any competitive educational course that comes anywhere close to offering the breadth of detailed information on these control devices and strategies – especially with such a large hands-on component incorporated into the coursework.

Having said that, some experts, including myself as well as Rick Miller, are concerned that proposed upcoming changes to Title 24 with regard to lighting control will require even a much greater level of knowledge than students typically gain by going through the existing CALCTP course. For example, there is very little in the CALCTP course that addresses actual "systems". A half-day module, which as it is incorporates at least 1 hour of academic lecture, is not nearly enough time to educate students about the complexity of today's lighting control systems that are currently available in the market. As Title 24 changes over time, and increasingly reflects the potential energy savings by using lighting control systems available in the market, there will be a much greater need for educational offerings to deal with these systems.

Both Rick Miller and I have been contracted to develop such courses in lighting control "systems" for California utilities. This year, thanks to the foresight of Connie Samla, Dave Bisbee, Paul Gillaspy, Dan Hamilton and Alan Suleiman at SMUD, I was asked to develop a 2-

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day course specifically for lighting control systems. It was an enormously complicated job to develop this as a "hands-on" class. However, attendees were extremely energized by the exposure to these systems. They discovered many interesting features of the systems as a result of actually wiring them up. They were also surprised by certain aspects of the systems that typical "sales collateral" doesn't address. Ultimately, most of the attendees were very excited that – within 2 days time – they went from having no prior knowledge of systems at all, to having wired and successfully commissioned and programmed fairly complex digital lighting control systems. And some of these attendees had never wired anything in their lives!

In this course, we only had time to teach and then wire up and program three systems – one wired and two wireless. There are many more systems on the market today, and some use strategies that we weren't able to cover in this 2-day class. A good example is carrier current technology. This is important because a system using carrier current is possibly a good candidate for use in a retrofit project. Therefore, it would be important to cover this as well as other technologies in an advanced version of the CALCTP course.

The concern that some of us experts have is that the pace of development of these very robust educational programs is not keeping pace with changes in proposed code language and requirements. The CALCTP is a great (!!!) start to addressing this need. However, we essentially need a higher tier of educational offerings to train both installing contractors as well as acceptance testers in this advanced technology. If such advanced programs are not developed, how can acceptance testers who have learned about relatively older lighting control technology even in programs like the CALCTP be expected to fully understand and verify compliance with proposed new code language that is based on more complex control systems?

Personally, I would suggest that the CALCTP program (and/or other competitive programs) ultimately contain at least 3 tiers of coursework:

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- Foundation level course (like the 50-hour course that already exists)
- Advanced level course in “systems”
- Commissioning course

This multi-tiered approach to educating both installing contractors as well as code officials and acceptance testers would address the complex needs of this market – only some of which are being addressed right now by the CALCTP offerings. Lastly, the CALCTP course is currently only offered to certificated California electrical contractors. To meet the needs of the state, as suggested in the proposed language discussed today, these programs need to be offered to other groups such as engineers, code officials, etc.

Thank you.