



An Employee-Owned Company

29 February 2012

California Energy Commission
Sacramento, California

DOCKET

10-BSTD-1

DATE FEB 29 2012

RECD. MAR 01 2012

Re: Proposal to require certification of Title 24 acceptance testing field technicians for mechanical systems and lighting controls

Ladies and Gentlemen:

Commissioning Agents, Inc. wishes to comment on the proposal to require certification of Title 24 acceptance testing field technicians for mechanical systems and lighting controls. Commissioning Agents, Inc. is a company that provides acceptance testing of energy-related systems, and production manufacturing equipment and systems. Over the course of our 16 year operating history, we have delivered close to \$250 million in engineering and technical services, the majority of which involve commissioning/acceptance testing.

The proposal in question is similar to an issue raised in North Carolina some years ago, regarding the performance of validation services to the pharmaceutical and biotech industries (validation services also typically involve acceptance testing). In that case, a company that offered professional engineering services alleged that validation constituted the practice of professional engineering, and thus many of its non-engineering competitors were not authorized to deliver such services. After more than a year of hearings, the North Carolina Board of Professional Engineers concluded that commissioning work, which includes both inspections and acceptance testing of mechanical, electrical, hydraulic, pneumatic or thermal systems to verify conformance to design specifications, fell within the definition of professional engineering services, and mandated that such services be performed under the “responsible care” of a registered professional engineer.

While we don’t strongly disagree with the North Carolina action, it was instigated by a company seeking to limit competition. The current action on the part of the International Brotherhood of Electrical Workers and the California Local Unions of Sheet Metal Workers appears similarly motivated – to limit competition and therefore drive up costs.

Commissioning Agents, Inc.

PO Box 34320
Indianapolis, IN 46234

PH 317 271-6082
FAX 317 271-6097

652 N. Girls School Rd, Ste. 240
Indianapolis, IN 46214

From a technical perspective, this proposal is overly simplistic. As an example, HVAC systems, which are key to energy consumption, can have a variety of specialized functions depending on application. We have encountered systems that have special life-safety provisions, such as when compressed nitrogen or hazardous substances are present in a room – the HVAC automation sequence of operations will have special functions if an unsafe condition is detected. In some industries, the HVAC serves to establish manufacturing cleanliness zones through room differential pressure schemes, and provides a specified minimum room air changes per hour, with perhaps automation control sequence of operations response in the event of power failure, or operator actions that invalidate the differential pressure. In these cases, the commissioning team needs to understand this and develop and execute appropriate testing regimes. Lighting systems used in animal research also have specific requirements.

Over the years, our engineers and technicians have encountered a plethora of different situations that go well beyond simple energy conservation when testing various systems. Our clients want to know that our people have the requisite training and experience before they hire us to verify the installation, operation, and performance of their systems. It is not feasible for a certification program focusing on energy considerations to cover these different real-life requirements. The US Food and Drug Administration, which mandates testing (“qualification”) to “verify that equipment and systems are suitable for their intended use” does not recognize specific certifications for such work, but rather mandates that the owner engage persons who “have education, training, and experience, or any combination thereof, to enable that person to perform the assigned functions.”

From a practicality perspective, it is not feasible to engage multiple teams to perform the same commissioning acceptance testing (e.g., one group to assess the energy functions, another to assess the non-energy functions).

Generally speaking, acceptance testing falls into two phases: (i) the generation of test specifications/ checklists/ procedures; (ii) the performance of inspections and testing. The following considerations apply:

- To generate the specifications, checklists, and procedures, one must have a solid understanding of the owner project requirements, and how those requirements have been incorporated into the equipment or system design. Then, the person must be able to develop an appropriate set of challenges to confirm that the installed system actually meets owner requirements, and will function to meet the design. This is an engineering discipline, and one could argue (as North Carolina has concluded) that this should be under the responsible care of a professional engineer.
- The performance phase can involve one of three approaches:

- The entity that provided/ installed the equipment or system self-certifies that it works properly. This is not an advisable approach from the obvious conflict of interest perspective.
- The entity that provided/ installed the equipment or system conducts a demonstration (commissioning) to the satisfaction of a third party commissioning team. This is the most common approach, as the supplier will need to actually operate equipment under test to preserve its warranty, and the independent commissioning team will observe and document the performance, by following the pre-determined test procedures.
- A third party operates the equipment following the pre-determined test procedures. This can be common when the automation is provided by one company and the equipment by another, but neither is responsible for the overall performance. Much of our work over the years has been this method, as there is typically an automation integrator and a different equipment supplier.
- With respect to test adjust balance, the commissioning team typically reviews the test adjust balance report, or else witnesses the final balance after the TAB contractor has completed the adjustment phase, and also witnesses the control sequence.

In short, there is often a clear differentiation of roles during acceptance testing: one group (from the supplier or installing contractor) is doing the operating, and another group is witnessing and documenting that the owner requirements, as effected in the design, have been met. It is not clear to us where the need for a generic certification falls into this scheme of things – there are too many variables to make this approach reasonable and prudent.

A better argument can be made that any such acceptance testing be done under the responsible care of a registered professional engineer, who is governed by regulations and ethics to only practice what he or she is competent to undertake. The California Professional Engineers Act defines the level of education, training and experience required to evaluate buildings, equipment, etc for the purpose of securing compliance with specifications and design. A professional engineer clearly meets the level of expertise required to perform the Title 24 Part 6 ‘acceptance testing’ needed to substantiate compliance with the California building energy efficiency standards. Furthermore, sections 6701, 6703.1, and 6730 of the 2012 Professional Engineers Act could be construed as requiring any acceptance testing that could impact life, health, property or public welfare to be performed under the supervision (responsible care) of a registered professional engineer, which would obviate the need for any separate certification program.

We welcome further discussion on this issue.

Commissioning Agents, Inc.

A handwritten signature in black ink, appearing to read "R. Chew". The signature is fluid and cursive, with the first letter of each word being capitalized and prominent.

Robert E. Chew, PE
President and CEO