

A close-up photograph of a hand holding a glowing compact fluorescent light bulb. The hand is positioned at the top, with fingers gently gripping the bulb. The bulb is illuminated, casting a warm glow. The background is a solid, vibrant green. The overall composition is centered and visually striking.

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Codes and Standards for the Campus Environment: Regulations for the Future

By Robert Solomon, P.E. and Michael A. Anthony, P.E.

Of the 39 breakout sessions at the APPA 2010 Conference in Boston last July, 29 of them dealt with campus security, environmental, energy, or sustainability issues. The process that underlies leading practice in all of the foregoing were discussed in a single session in Boston, by the authors of this article.

Much of the infrastructure criteria in the college and university environment originates in consensus documents developed according to rules set by the American National Standards Institute (ANSI). Documents developed according to the ANSI process bring together thought leaders from the safety community, architecture and engineering firms, testing

laboratories, insurance industry, contractor organizations, manufacturing, labor unions, and many other segments of the economy. The National Fire Protection Association (NFPA) is one of the largest and oldest standards developers in the world (its implementation of the ANSI process illustrated in Figure 1.)

Fire protection technology has developed in parallel with electrical power systems, signaling and alarms, behavioral science, hazardous materials handling – all present in great and complex abundance in educational campuses. That is why the footprint of the NFPA is so large in our construction, operation, and maintenance enterprises — as well in the security, environmental, energy, and sustainability issues discussed in Boston.

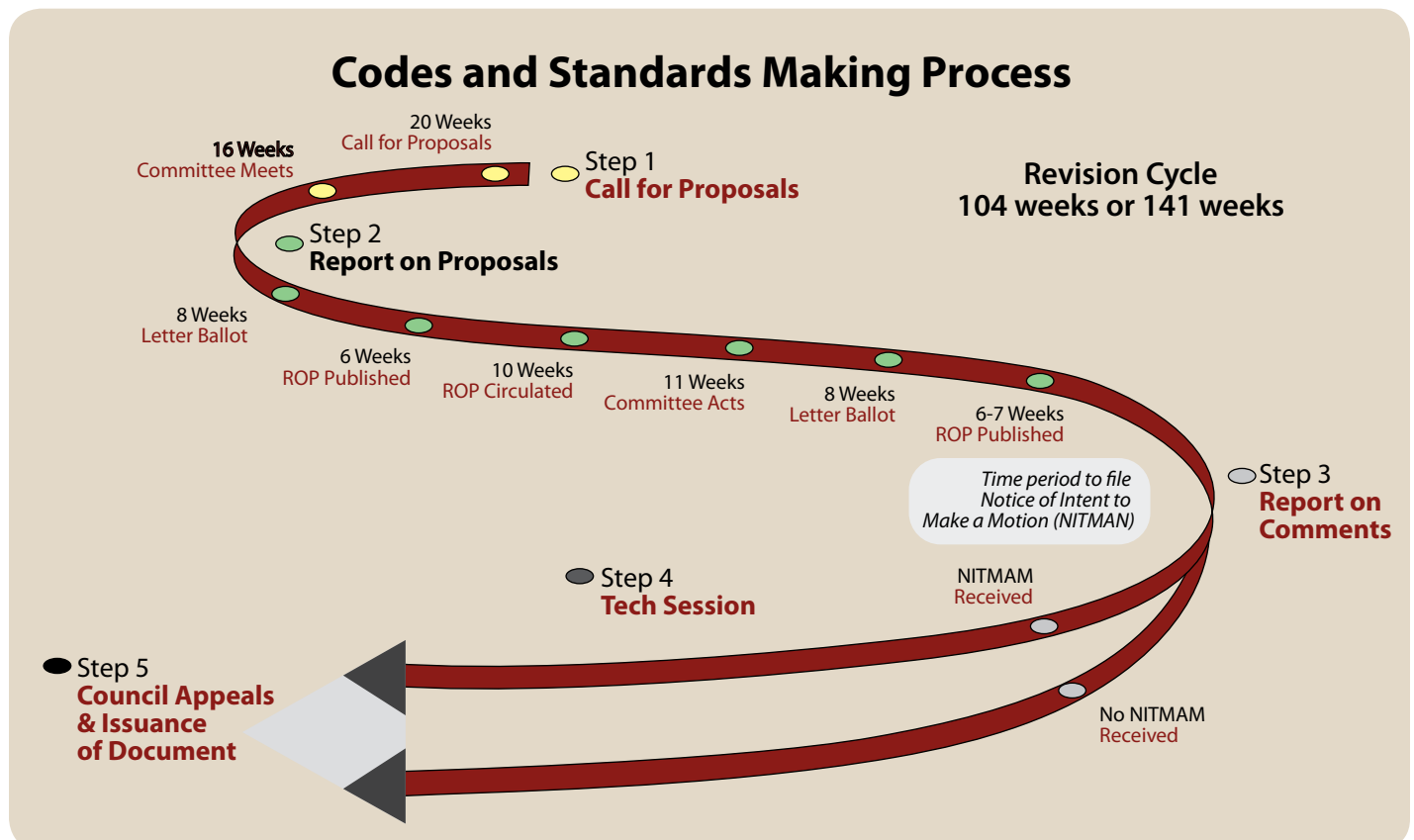


Figure 1. NFPA implementation of the ANSI document development process. This process is used by industry thought leaders to develop leading practice documents that are suitable for adoption as model law.

Most of the documents that govern the cost structures of our industry are the consequence of decades of debate among various interest groups. Although APPA has had a representative with voting rights on the National Electrical Code® since 1997, it was not until the formation of its Code Advisory Task Force (CATF) in 2007 that code intervention as an APPA member benefit was broadened. While every APPA member institution has its cadre of code experts (architects and engineers), authorities-having-jurisdiction (fire marshals and risk managers), and enforcers (inspectors), these workgroups are concerned mainly with a particular project at hand, i.e., tactical activity.

The CATF takes a long-term strategic approach to cost structure management by having a hand in writing the rules to which our industry is bound. The CATF is a shared resource for the industry, guided by a pool of experts who take a proactive posture in the methods of innovation and regulation.¹

Some of the broad concepts on the agenda of the CATF are the following:

- How can exceptions and variances to standards be taken (as equivalencies) without increasing liability risk?
- Do specific material requirements embedded in many prescriptive codes impede innovation?
- Can insurance costs be rationalized with an industry-specific life and property protection document?

The specifics in each of the foregoing appear in documents developed by the ICC, ASME, ASHRAE, the EPA, and other standards-developing organizations. Of the nearly 300 code, standard, and recommended practice documents developed by the NFPA, about 160 directly apply to the structures, systems, processes, and hazards that are common on our campuses. Most of them are informed by a single-building/single-system governing assumption and have proven to work well. Campus-style facilities, however, may be significantly different. [See sidebar.]

In May 2009 the CATF submitted an application to NFPA for a new committee

document that could be used by the educational facilities industry as a living document for leading practice, as well as be used by the many agencies that control the flow of money to APPA member institutions. The effort was intended to take advantage of the National Technology Advancement and Transfer Act²—which directs all federal agencies to adopt industry-developed standards—before attempting to write an industry’s regulations for it.

After a series of conference calls and Web meetings with the CATF and NFPA staff, the NFPA Standards Council rejected a full-scale committee project as proposed and instead referred the concept of an APPA-NFPA partnership to its staff, “to explore the viability of a product compilation to suit the needs of APPA in lieu of a new standard.” In light of the pace of change in information technology and regulations, the NFPA is launching new content delivery platforms. The CATF’s objectives might be met more quickly—and at lower cost—if APPA were among the first to partner with the NFPA on new delivery platforms.

The next level of dialogue between the CATF and the NFPA will consider ways to:

- Consolidate/centralize infrastructure criteria
- Make criteria easier to locate in the NFPA universe of documents
- Define/establish which infrastructure criteria matters most.

As this dialogue continues, CATF will continue intervening codes and standards development, document-by-document; asserting the interests of our industry issue-by-issue. The process is time consuming; it does not yield results overnight but the pipeline of regulatory intervention initiatives is filling. Initiating the regulatory process is the best way to set the agenda. ☞

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REFERENCES

1. Code Talkers, Mar/Apr *Facilities Manager*, 2010, “Innovation and Regulation”.
2. National Technology Transfer and Advancement Act of 1996 http://standards.gov/standards_gov/index.cfm

Multi-Building Infrastructure

When an Owner has one isolated facility there is an (relatively easily) identifiable cost associated with maintaining its 100 percent conformity to prescriptive construction and O&M code requirements. When an Owner has 1-10 buildings in campus-style arrangement, a part-time, off-site staff may be able to manage code conformity at a lower cost per building by asking following questions:

- Can fire pumps and generator be shared between buildings?
- Is a central sprinkler system more economical?
- Can we run feeders between buildings with less than 300 kVA of load?
- Where is the boundary of responsibility along the perimeter of city outdoor lighting and campus security lighting?
- What is the optimal arrangement of city sprinkler water access to campus buildings?
- Can a utility source of emergency power be used in place of a generator?

When an Owner has 100 to 1,000 buildings in a campus-style arrangement, the economy of scale is rather different — with performance-based code conformity frequently allowed by insurers. In actual litigation however, plaintiffs will challenge performance-based exceptions. They will assert that the single-building single/system model works and that 100 percent conformity should apply. But in the world of APPA managers, there is not enough money for 100 percent conformity. The need for an industry-specific leading-practice document that is recognized by funding and enforcement agencies is an urgent reality.