CHEMICAL ENGINEERING

Professional Bureaucracy

Bob Katin, chairman of the California Government Relations Committee of the American Institute of Chemical Engineers (AIChE) and president of the California Legislative Council of Professional Engineers (CLCPE), is a persistent man. For more than 20 years he has fought to change the California Professional Engineers Act (PE Act) so that chemical engineers would have parity with civil engineers. In the course of that time, he has helped sponsor about a dozen bills, none of which was approved by the state legislature.

Katin, the owner of an engineering firm in Antioch, Calif. (www.katinengineering.com) is now taking a new tack. Frustrated by the legislature's unwillingness to change the law, he has embarked on a new campaign of informing high-level state and federal officials that they may not be able to carry out federally sponsored projects in California without breaking the PE law. This is because the Act gives civil engineers a virtual monopoly over infrastructure projects, he says, even in cases where they don't have the necessary expertise. On the other hand, hiring engineers that do have the expertise would break the law.

The basic issue is that civil engineers who pass the PE examination earn the exclusive right to practice their profession, which is broadly defined under the law. Mechanical and electrical engineers also get a license to practice their professions, but the definitions are much narrower. Chemical engineers and nine other disciplines simply get the right to use a title (for example, "chemical engineer"), but anyone can practice chemical engineering.

In other states, says Katin, licensed engineers are able to provide all engineering services within their area of competence, and 40 states do not indicate the discipline of the engineer on the license. "No other state in the nation has this crazy law that gives civil engineers a monopoly over all engineering and science," he says.

Katin got the idea for his new campaign from a fresh interpretation of the law by California's Legislative Counsel Bureau (Sacramento). The bureau's report concluded that only a licensed civil engineer can do engineering work on fixed sites, such as chemical plants and petroleum refineries. Only civil engineers may be "in responsible charge of designs, plans and specifications and engineering reports" for "fixed works. Professional engineers who sign engineering documents should be "capable of answering questions" on those documents.

The significance of the report, says Katin, is that a civil engineer has to do all the engineering work, not just oversee it. This interpretation also eliminates the "industrial exemption," under which chemical and other engineers employed by engineering and other companies do the work on a project, but the final documents are signed by a licensed civil engineer.

As a first step in his new strategy, Katin has settled on a planned multibillion-dollar high-speed rail (HSR) that will connect Los Angeles with San Francisco. The idea, says Katin, is to use federal pressure to change the law. “If you are taking money from the Federal Government you have to follow state law. For a start he has sent letters to Karen Hedlund, deputy administrator of the Federal Railroad Administration (FRA, Washington, D.C.), California Governor Jerry Brown, and Mark Paxson, general counsel in the State Treasurer’s Office.

In his letters, he says that California law requires that anyone providing professional expertise needed for a railroad project must be a civil engineer, but HSR will require a number of engineering disciplines. Therefore, says Katin, the HSR project “will entail the need to violate the PE Act and require a breach of contract in order to be constructed.” He received an acknowledgement from Paxson, who said he would “keep the letter in my file for consideration by disclosure counsel when the State decides to issue bonds for the High Speed Rail project.”

As for the bills rejected by the California State Legislature, Katin says the bills failed because of strong opposition from Professional Engineers in California Government (PECG; Sacramento), a union of engineers and other professionals employed by the state. PECG has more than 10,000 members, and the majority of them are civil engineers.

Bruce Blanning, executive director of PECG, says, “it is not the case that the bills died because PECG killed them. PECG is not opposed to amending the Act and we want to find a solution”

The difficulty in making chemical engineering a practice act, says Blanning, is in defining specifically what chemical engineers do for the purpose of protecting public health, safety, welfare and property.

So far, most of California’s chemical engineers are not affected by the law because they work for corporations and have “industrial exemption.” Those most vulnerable are generally employed by small companies or work as independent consultants.

For example, E_2 environmental, a small company located in Irvine, Calif., worked for more than 14 years cleaning up the site of a former solvent- and oil-recycling facility before running afoul of the PE law. Under a contract with the California Dept. of Toxic Substances Control (DTSC, Sacramento) the company drilled a number of vapor-extraction wells and laid down an asphalt cap to prevent the vapors from getting into the atmosphere.

Over the years E_2 worked with a DTSC project manager and submitted several reports to him, says Dennis England, the companys CEO. However, the man retired about two years ago and the new project manager refused to accept the next report because it wasn’t signed by a PE civil engineer.

“I told him our previous reports had not been signed by a PE civil engineer,” says England, “but then his supervisor said we needed to have a PE civil engineer overseeing the work. I told the supervisor we have a class A engineering contractor’s license with hazardous certification, but he still said the report was unacceptable.” The company has not worked on the project for about 18 months, although its contract runs until the end of this year, says England. The project has been lying idle for about 18 months, although E_2s contract runs until the end of this year, says England.

To avoid such problems, E_2 and other companies sometimes hire a “token PE civil engineer” or a civil engineering contractor to help with a project. “The civil engineer may not understand the details of what we are doing, but our people do the work and he signs off on it,” says one company manager.

Eric Anderson, a chemical engineer and engineering consultant in Pasadena, Calif., has a PE license in mechanical engineering, but not chemical engineering. I didn't want to spend the time and money on a chemical engineering PE, which is essentially worthless, he says. The mechanical engineers license, on the other hand, authorizes him to do more extensive work in his projects on industrial exhausts and air pollution control. “A mechanical engineer is a second-class citizen,” he says, “but PE chemical engineers are third class and have no protection under the law.”

On the other hand, another consultant, specializing in environmental engineering, health and safety, has been using his PE chemical engineering license for years to stamp the occasional document. “I’ve never been challenged,” he says, “but maybe I’m just plain lucky.”

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