National Society of Professional Engineers®

Significant Legal and Legislative Activities

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The following is a summary of recent legal/legislative activities of interest to the Engineers Joint Contract Documents Committee collected from information provided by EJCDC member organizations and other source material. For background material on each issue, please contact Art Schwartz, NSPE Deputy Executive Director & General Counsel (aschwartz@nspe.org).

STATE LEGISLATIVE/REGULATORY MATTERS

Wisconsin Becomes First State To Require BIM on Public Projects – On July 1, Wisconsin became the first state to require the use of building information modeling (BIM) software on most public projects, a move that could trigger 3D modeling requirements across the country.

The new regulations call for architects and structural engineers to use BIM authoring software and engineers in other disciplines to use authoring software or discipline-specific 3D modeling programs. The software is required on all projects totaling more than $5 million in cost and new construction projects totaling $2.5 million in cost, but is encouraged on all projects.

Wisconsin tested the requirements starting in 2008 on a pilot program of 13 construction projects totaling $300 million. The Wisconsin Division of State Facilities, which authored and issued the requirements, was sufficiently convinced that the regulations could be applied to all large public projects and made the standards official on June 25 of this year.

In 2006, Wisconsin Governor Jim Doyle signed an executive order requiring all state buildings to meet high environmental efficiency standards. The Department of Administration, which includes the Division of State Facilities (DSF), began developing guidelines for meeting the executive order and quickly realized BIM would be the best tool to meet those standards. Officials liked the cost effectiveness and ease of BIM software and decided to try applying it to all state facilities and operations.

Wisconsin officials asked the public to submit comments on the regulations via an online discussion forum, where DSF officials have answered questions on every aspect of the guidelines.

DSF even listed five types of BIM authoring software that are pre-approved for use: Autodesk Revit Architecture, Structure, and MEP; Bentley Architecture; Graphisoft ArchiCAD; Nemetschek AllPlan; and Tekla Structures. DSF also "will consider other software products subject to their capabilities, features and benefits to the state," according to the official BIM Guidelines and Standards document.

"As long as the BIM authoring software can perform to meet the requirements of these standards and guidelines, that is the determining issue for acceptance," Bill Napier, P.E., Wisconsin Department of Administration project manager, says in the discussion forum.

Some commenters on the BIM discussion forum worried that if the architects and engineers on a project use different types of software, some sort of third-party program would be needed to coordinate all the designs. Napier reassures that planners would not need this sort of "collaborator" program.

"DSF recognizes that not all team consultants will have the same BIM authoring software. The requirement to coordinate disciplines is not new," Napier says. "DSF does not expect each consultant to purchase model checking software—what is required in these standards is that the model be checked [by all involved planners]."

On August 12, the Texas Facilities Commission (TFC) announced it will adopt BIM requirements, with hopes to become the first state to require the software on all public projects. For now, Texas will require BIM on projects of a certain cost, similar to Wisconsin.

"We have a chance to improve the traditional process," says Chris Tisdel, director of BIM for TFC, in an informational video on the TFC Web site. "We are standing on the cusp of a technology and process revolution that will change industry forever."

Texas officials have not announced when the BIM requirements will take effect, or to what types of projects they will apply.

Louisiana Removes PE Requirement for DOT Position – Louisiana Governor Bobby Jindal signed legislation on June 19 that removes the PE license requirement for one of the top positions at the Department of Transportation and Development.

The new law cut the PE requirement for the assistant secretary in the Office of Public Works and Intermodal Transportation, a position that is currently vacant. Louisiana's action follows other recent cases of state and local governments dropping the PE requirement for engineering related positions. Several NSPE state societies, including the New York State Society of Professional Engineers and the Nebraska Society of Professional Engineers, have worked to stop efforts to eliminate PE requirements from critical government positions.

Last year, the Nebraska Society lobbied state legislators to maintain the PE requirement for the director of the Department of Natural Resources. And in New York, NYSSPE and NSPE opposed plans by the New York City Council and Mayor Michael Bloomberg to remove a licensed design professional requirement for the Department of Buildings commissioner.

While a PE license is no longer mandatory for the assistant secretary in Louisiana's Office of Public Works and Intermodal Transportation, the new law also cut the specific language stating that the assistant secretary is responsible for approving plans, specifications, and estimates for the construction of all facilities and office projects.

Maryland PEs Join Emergency Response Effort – Following the terrorist attacks of September 11, 2001, many people were inspired to serve their country. David Thaler, P.E., F.NSPE, was no exception. After the twin towers fell, the past president of the Maryland Society of Professional Engineers began looking for a way to mobilize the skills of the Maryland engineering community in times of civil emergency.

It took him years to find the vehicle, but now he and about 19 other members of the Maryland Society of Professional Engineers are serving in the Maryland Defense Force, a component of the Maryland Military Department that supports the state's National Guard. Its mission: to aid in recovery efforts after natural or manmade disasters and help defend the state and country and their security interests.

Thaler discovered the Defense Force a little over a year ago and learned that it had an Engineer Corps. It was headed by former U.S. Navy Captain (now Colonel) Brian Kelm, P.E., "only, other than Col. Kelm they didn't have any professional engineers in the Corps," Thaler says. A partnership with MSPE was formed, and much of the state society's senior leadership enlisted, as well as the chair and vice chair of the Maryland Board of Registration for Professional Engineers.

Within the Engineer Corps, the PEs formed the Maryland Engineering Emergency Response Team. The group trains in disaster preparation and in the event of a natural or manmade disaster, would deploy with the Maryland National Guard to conduct disaster assessments and assist in recovery efforts.

MEERT hasn't needed to deploy yet. Still, Thaler explains that they prepare and train and "hope that we'll never be needed, but I suspect that won't be the case, and sooner or later we will answer the call."

Meanwhile, the PEs' talents aren't put to waste. They serve in other nonemergency functions, such as conducting engineering analyses of the suitability of schools as disaster shelters.

The group also regularly examines the physical state of National Guard facilities and completes engineering reports that help determine repair funding. "We'd go out to the facility and see a wall that was ready to fall down and injure someone," says Thaler. While the structural engineers on the team would recognize that the wall was a danger, he adds, the people running the facility wouldn't.

The Maryland Defense Force's history goes back to colonial state militia, but it was formally established during World War I. Its mission was to protect the home front while the Maryland State Guard (now the Maryland National Guard) deployed to Europe.

Members of the Maryland Defense Force are trained in medical, military, and emergency response topics and are authorized to wear a military uniform. They also advance in rank—either entering at the level held in previous military service or receiving ranks according to their education and experience. Thaler explains that PEs who join are commissioned as captains and EITs as lieutenants. As commander of the emergency response team, he is a lieutenant colonel.

NSPE member Steven Arndt, P.E., vice chair of the Maryland State Board for Professional Engineers, was recruited by Colonel Kelm and serves as the Engineers Corps' deputy commander. Arndt explains that the group provides a very valuable service to the community and the state of Maryland. "It's an opportunity where we can use our skills to show that [engineers are] there to help people," he says.

Thaler says he gets a great sense of satisfaction from "being able to have the engineering profession volunteer our talents to help in times of civil disaster." And there are other benefits: "You get to play with the cannons…. I call these Barbies for boys."

To determine whether your state has a defense force and an engineer corps (or whether one can be started), start here: www.mddefenseforce.org/others.asp or www.mddefenseforce.org.

Washington Engineers Develop Training For Carbon Capture – The Washington Society of Professional Engineers is attacking excess carbon emissions head-on by developing a training program to create a workforce proficient in carbon capture and sequestration technologies. By next year, WSPE, Pacific Northwest National Laboratory, and the Environmental Outreach and Stewardship Alliance hope to begin offering classes around the Seattle area.

A carbon capture and sequestration (CCS) workforce "will be essential to meet the climate-change challenges facing not only the U.S. but other countries as well," says WSPE Executive Director Willis Turner. "This workforce will be able to take advantage of new job opportunities that will also benefit the regional economy."

The program will be funded by the Department of Energy, which granted the coalition nearly $1 million to develop a regional CCS training and certification program in the Northwest by 2012. The curriculum is based on practices that have been used in the oil industry for years, where oil companies inject compressed CO2 into rock formations to force the last remaining bits of oil to surface. The CO2 is then trapped in those deep rock formations.

Engineers believe the rising CO2 emissions in the atmosphere can be stemmed with CCS technology that would trap the emissions in basalt rock and other formations.

"We will be building on these [tested oil] technologies to evaluate [which] geologic areas have the right combination of geologic stability, porous rock to accommodate the CO2 and [have the necessary] extensive rock caps that will keep the CO2 from escaping," Turner says.

The training courses will be offered as topic-specific lectures at conferences at the Environmental Outreach and Stewardship Alliance facility in south Seattle and as long-term, in-depth courses at the Pacific Northwest National Laboratory offices in Richland, Washington. The courses will also be recorded and offered online to reduce the program's carbon footprint, Turner says. Some experts believe CCS technology can help address climate change. In June, Ernie Moniz, director of the Massachusetts Institute of Technology Energy Initiative, published a report calling CCS a viable option to decrease CO2 levels in the atmosphere, especially those caused by coal manufacturing plants.

In recent years, CCS technology has increased rapidly. A West Virginia coal-fired power plant owned by American Electric Power is preparing to capture and pump about 1.5% of its CO2 emissions into the ground, and a plant in Wisconsin successfully carried out a carbon-capture pilot project in early October. Also last month, Energy Secretary Steven Chu announced $1.4 billion in stimulus funding for 12 carbon-capture projects at industrial sites.

While Turner and others have extolled the need for CCS to limit the future effect of carbon emissions, there are obstacles. Not every region of the country has access to the rock formations that support CCS—Washington is an ideal starting point because the generous basalt formations combine with CO2 to form solid minerals that can be stored indefinitely.

FEDERAL LEGISLATIVE/REGULATORY MATTERS

U.S. Companies Boost Offshoring – The domestic shortage of science and engineering talent and the need to quickly bring products to market are two of the main reasons that the number of U.S. companies with an offshoring strategy has more than doubled from 2005 to 2008, according to a new study.

The report, published by Duke University's Offshoring Research Network and the Conference Board, reveals that more than 50 percent of companies had a corporate offshoring strategy last year, up from 22 percent in 2005. Sixty percent of companies currently offshoring say they have aggressive plans to expand existing activities.

"Outsourcing innovation in engineering, research and development, product and software development, and knowledge processes makes companies, whatever their country of origin, more competitive by increasing speed to market and compensating for domestic talent gaps," says Ton Heijmen, senior advisor for outsourcing/offshoring at the Conference Board.

In recent years, offshoring has been a major topic of discussion within the engineering profession. In 2008, the National Academy of Engineering published a report saying that offshoring has had a significant effect on engineering, but those effects are uneven across industries and engineering sectors. NAE added that more data was needed to determine trends.

Another report released in 2008 found that offshoring had become more popular in the A/E industry over the previous two years. The study by Zweig White showed that the percentage of study participants who had used offshoring grew to 42% in 2008 from 19% in 2006.

The 2008 study also showed an increasing openness to offshoring among A/E firm leaders. Survey participants said that capacity constraints and the desire to decrease costs were the main motivations for offshoring.

Scientists, Engineers Call For Improved Visa Processing – While the U.S. was once the clear leader in science and technology research, the country now faces an uphill battle to regain a prominent status among other industrialized nations. Now a group of organizations is saying that the biggest obstacle to regaining that prominence is broken visa processing system.

The National Academy of Engineering, the National Academy of Sciences, and other science, engineering, and higher education organizations are concerned that since September 11, tougher visa restrictions on foreign talent have done more harm than good to national security and the economy. To ensure that the U.S. has the talent it needs, the groups are calling for a streamlined visa processing system.

In a statement released on June 10, the coalition reiterated that significant increases in visa delays are discouraging top international students, scholars, and scientists from studying and conducting research in the U.S. The delays could ultimately compromise the nation's ability to attract talent and maintain scientific and economic leadership.

Earlier this year, a National Academies report, Beyond Fortress America: National Security Controls in Science and Technology in a Global World, described how the current system is affecting the U.S.:

> "Instead of promoting engagement, the U.S. is required by our current system of controls to turn inward. Our visa controls have made it more difficult or less attractive for talented foreign professionals to come and learn what is great about this country, or to stay and help grow the American economy. Our export controls retard both the U.S. and its allies from sharing access to military technology and handicap American business from competing globally."

Engineering in K–12 Increasing, Report Finds – Over the past 15 years, engineering education has been making steady inroads into elementary and secondary school classes, according to a new report. Although the amount of engineering coursework in K–12 is still small, it's growing.

About six million children and teens have taken formal engineering coursework since the early 1990s, says the report from the National Academy of Engineering and the National Research Council. In 2008, there were about 56 million students in K–12.

Adding engineering to K–12 curricula can improve student learning and achievement in science and math, increase awareness of engineering and the work of engineers, and improve technological literacy, the report explains.

"The problem solving, systems thinking, and teamwork aspects of engineering can benefit all students, whether or not they ever pursue an engineering career," says Linda Katehi, chancellor of the University of California, Davis, and chair of the committee that produced the report. "A K–12 education that does not include at least some exposure to engineering is a lost opportunity for students and for the nation."

Despite the benefits of an engineering education, the committee found that engineering is often left out of the classroom as well as policy discussions on science, technology, engineering, and math. In addition, committee members found no consensus about what K–12 engineering education should include or accomplish. Although there are several dozen K–12 engineering programs or curricula, they are often developed independently, have different goals, and vary in how they treat engineering concepts, design, and relationships among engineering and other STEM subjects.

A free executive summary of Engineering in K–12 Education: Understanding the Status and Improving the Prospects can be downloaded at http://www.nap.edu/ .

White House Awards Funding for Electric Car Battery Research – President Barack Obama announced in August that 48 new electric-drive and advanced battery research projects will receive nearly $2.4 billion in funding, part of the American Recovery and Reinvestment Act. Grants were awarded in 20 states and ranged in value from $500,000 to nearly $300 million.

White House officials say this marks the largest investment in hybrid and electric-drive vehicle research in history. Companies receiving the grants are expected to provide an additional $2.4 billion in cost share, and the total investment should create tens of thousands of new manufacturing jobs, according to estimates. The grants were selected through applications to the Department of Energy.

The $2.4 billion in electric-drive battery and hybrid research grants are part of the overall $61.3 billion recovery act.

"If we want to reduce our dependence on oil, put Americans back to work, and reassert our manufacturing sector as one of the greatest in the world, we must produce the advanced, efficient vehicles of the future," Obama says.

More than $1 billion of the grant money will go toward 15 projects based in Michigan, the state with the highest unemployment rate in the country. Johnson Controls Inc. and A123 Systems Inc. received a combined $550 million to develop, manufacture, and produce battery cells and other hybrid and electric vehicle technologies.

About $400 million in grants will go to the Big Three automakers: General Motors, Chrysler, and Ford. Ford alone plans to spend $14 billion over the next seven years in advanced vehicle technology as it strives to meet government-mandated fuel economy and emissions standards beginning in 2016.

"After too many years of economic growth fueled by speculation and short-term thinking, these types of investments will help America recapture the spirit of innovation that has always moved us forward," says Missouri Commerce Secretary Gary Locke, whose state had three companies receive $45 million in grants. "Over the past 100 years, from cars to computers, American industry was at the forefront of just about every major technological innovation in the world. We should be leading the way in clean energy too."

COURT DECISIONS

Witt v. LaGorce – The Florida Engineering Society and other design professional and related groups have filed a friend of the court brief in this matter before the Florida Supreme Court. Earlier following a trial, in *Witt v. LaGorce* (3rd DCA Case No. 3D08-1812), the Florida 3rd District Court of Appeals had ruled that pursuant to *Moransais v. Heathman,* 744 So.2d 793 (Fla. 1999), and the Florida Statute licensing Geologists, even if an individual professional is specifically referenced in a limitation of liability provision, "such a limitation would be unenforceable as a matter of law."

If the appeals court's decision herein becomes the law of Florida, individual professionals (except lawyers, who can limit their liability in accordance with the Rules regulating the Bar) and doctors (who can limit their liability pursuant to Florida Statutes) will face unlimited personal exposure to clients whether they operate those corporations or not. Further, this case may bring into question whether individual professionals can lawfully enforce a contractual indemnification provision.

The Supreme Court brief states that Florida design and construction professionals have negotiated limitation of liability provisions to allocate risk in consulting agreements for nearly 40 years. FES and FICE believe the trial court's decision that limitation of liability provisions are invalid and unenforceable and will call into question the validity of thousands of contracts, bring great harm to the state's construction industry, and lead to a flood of unnecessary litigation.

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