From the Executive Director: Expectations During a Pandemic

By Zana Raybon, FBPE Executive Director, FEMC President

I hope everyone is coping well during these unusual times. I want to take a moment to update you all on how we at the Board office are handling regulatory matters during this pandemic.

First, all Board staff have been working from home since the first of May. Things are going well, and I believe we are providing the assistance and support needed to process licensure applications and legal complaints. We are meeting deadlines and issuing licenses. We are careful to maintain social distancing whenever any staff must go to the office and take the necessary safety precautions such as wearing masks and disinfecting surfaces.

How long will we continue to work remotely? We’re not really sure, but it could be until the first of the year – 2021. That means we will start renewal while working remotely. However, we are making plans now to handle phone calls, as well as the emails we already deal with, while working from home. With the aid of technology, staff will be able to manage phone calls remotely, thereby offering assistance to licensees during the renewal period. Since we already achieve approximately 98 percent of our renewals online, we expect the period to go smoothly.

The Board has already discussed continuing education requirements being met during this time and does not expect to waive or reduce the required 18 hours. Aside from the online offerings that are typically offered, we have also observed that many of the conferences that have been cancelled have shifted to virtual meetings and will still be offering seminars for credit in a virtual format.

At this time, we expect the renewal fee to remain at $98.75, with a $10 discount for those who renew by mid-January.

As you might expect, the Board is holding all meetings — including business, disciplinary, application review, and committee meetings — via Zoom. We plan to avoid face-to-face meetings for the next few
months, possibly until the first of next year. So far, the meetings have gone smoothly with very few problems. Be sure to check the calendar on our website for all future meeting information.

Finally, while we are unable to offer outreach in our customary fashion, we are more than happy to conduct a Zoom presentation, complete with providing promotional items for the students. Please let us know if there is an interest in having staff make a licensure presentation to students in a classroom setting or to a student organization. Drop us a line at publicinfo@fbpe.org.

As always, we welcome your feedback during this time. If we can improve on any of our processes, that is our goal. You can reach us at board@fbpe.org. Stay safe!

Chair’s Corner: Engineering Experience in the Construction Field

By Babu Varghese, PE, SI, CGC, CCC, FBPE Chair (2020)

These are turbulent and uncertain times. The lockdown due to COVID-19 has resulted in many engineers losing their jobs or being furloughed. I certainly hope, since the economy is beginning to show improvement, that these engineers will find better opportunities.

As life goes on, virtual graduations are everywhere, and newly minted engineers are looking for real jobs. It is important for them to understand the pros and cons of career choices they make and how it affects professional growth. Though most engineers are aware of the four years of required experience for licensure, it appears they are generally not aware of what constitutes acceptable qualifying engineering experience for licensure.

Engineers have always been an attractive bunch of potential recruits for employers in other professions, which are quite disconnected from engineering. Job fairs at universities and other career placement events are clear examples of this trend. Large construction companies, accounting and financial firms, software companies, and business consulting companies are the most common ones hiring traditional engineers. A traditional engineering firm designing buildings or bridges never considers hiring someone from a different profession and then training them to be engineers, unlike other professions that do just that. These professions figured out that it is easy and worth it to train engineers because of their logical and methodical approach, which leads to better results.

When the remuneration package is attractive, especially at the entry level stage, engineers very often abandon their field of study and join a different profession. After a couple of years, it becomes difficult to come back and pick up where they left off, and therefore most do not try to resume engineering, except the ones who joined construction companies.

Construction Engineers

A young engineer may find it enticing to join a large construction company due to the tempting prospects, which include a 25-percent to 30-percent increase in salary, moving to a different city after about nine months or so when a project is done, and the attractive reimbursable and benefits package when compared to a traditional engineering design office’s compensation package. There is nothing wrong with any of these wonderful aspects. However, the problem starts when such engineers apply for licensure. The experience most of them claim on their licensure applications are:
• Construction scheduling
• Quantity estimates
• Contract negotiation
• Coordination with subcontractors
• Coordination with design professionals.

There are construction firms that employ engineers to perform engineering work, such as value engineering analysis, design of tunneling systems, design of temporary support systems, formwork system design, etc., which are all acceptable as experience. Other construction firms employ them as construction superintendents, though the job title may be different. Those listing that type of background will face engineering experience issues.

When their application is denied for licensure, a few of the rejected applicants appeal and appear for an informal hearing in front of the Board. At least one or two applicants appear in front of the Board at every board meeting. All the experience they narrate, consists of what a general contractor does, which has nothing to do with engineering decision-making. It is heart wrenching to reject these applicants who have excellent engineering educations but lack the appropriate engineering experience.

There is an engineering rule — Rule 61G15-20.002, Florida Administrative Code — outlining acceptable experience. The following excerpts, in particular No. 12, can help an applicant determine what is acceptable engineering experience:

1. The acquisition of acceptable engineering experience should logically follow and constitute an application of the engineering education previously obtained.

4. Experience must be progressive on engineering projects to indicate that it is of increasing quality and requiring greater responsibility.

7. Experience should be gained under the supervision of a licensed Professional Engineer or, if not, an explanation should be made showing why the experience should be considered acceptable.

12. Experience in construction, to be creditable, must demonstrate the application of engineering principles.

13. Experience should include demonstration of a knowledge of engineering mathematics, physical and applied science, properties of materials, and the fundamental principles of engineering design.

14. Experience should include demonstration of the application of engineering principles in the practical solution of engineering problems.

Documenting Experience

In evaluating your application, the Board’s Experience Committee must determine whether your experience qualifies you for licensure. That means, the committee must be able to verify, understand and evaluate the facts you have presented. Do not assume that the brief summary you provided will be obvious to the committee.

A specific, detailed summary of your engineering experience will greatly increase your chances of approval. You should write a draft of your experience and run it by your supervising Professional
Engineer or someone who is familiar with the licensure process to review it before sending it to the Board. Be honest. In some cases, it is better to wait until you have sufficient experience to qualify you for approval.

**Intent of the Rules**

Ask any experienced engineer the reasons for their success, and you will most likely hear about their first job and the Professional Engineer who trained them. This is where most engineers learn about the engineering decision-making process, ethics, and integrity, and where their work product is critiqued for quality control and accuracy.

After gaining licensure, most engineers work somewhat independently. Over the years, the Board has learned that a well-trained engineer is less likely to make the common errors that lead to disciplinary actions. And that is the goal of the [Board’s Rules](#).

Working under an experienced and reputable engineer must be a paramount goal for graduating engineers, and the rewards will be evident at a later stage in their careers.

**FBPE Posting COVID-19 Updates Online**

FBPE’s [Coronavirus (COVID-19) Updates page](#) provides news regarding the effects of the pandemic on license, board and committee meetings, examinations, and other information pertinent to Professional Engineers in Florida. The page is updated as necessary.

**NCEES Sets Up COVID-19 Updates Page**

With the April administrations of pencil-and-paper Principles & Practice of Engineering exam having been canceled, and Pearson VUE Test Centers closed for Fundamentals of Engineering and PE exams due to the coronavirus pandemic, NCEES has set up a page on its [website](#) to provide updates.

**Renewal Checklist for Florida PEs**

Licensure renewal begins in November for Professional Engineers licensed in Florida. Now is the time to make sure you are prepared for renewal.

We’ve put together a short checklist to help you avoid discovering at the last minute that you have a problem.

**Continuing Education:** All Professional Engineers licensed in Florida must complete [18 hours of continuing education](#) each renewal period. As mentioned in the [From the Executive Director column](#) in the July 2020 issue of the newsletter, the Board does not expect to waive continuing-education requirements due to the COVID-19 pandemic. The window for earning CE credits opened over 16 months ago, and the deadline for completing the credits is Feb. 28, 2021.

**Board emails:** If you didn’t receive the July 2020 newsletter email and are reading this online, you may have unsubscribed to FBPE emails. That means you won’t receive notifications and reminders regarding
renewing your PE license. Please resubscribe to FBPE emails using the [Resubscribe to FBPE Emails form](#) on our website.

**License status:** Check the status of your PE license at [myfloridalicense.com](http://myfloridalicense.com). If it is delinquent, you must pay the renewal fee from the previous renewal period and a delinquent fee before you can renew for the 2021-23 period. If it is null and void, you will need to have your license reinstated. Please see the [Other Forms page](#) on our website.

**Check your password:** Make sure that you can log into your account at [myfloridalicense.com](http://myfloridalicense.com). You will be renewing your license through this portal provided by the Florida Department of Business and Professional Regulation.

**Check your email address and contact information:** If you need to update your contact information, please fill out and submit the online [Change Contact Information form](#).

**Early-bird renewal:** Watch for details on how you can save $10 by renewing early once the renewal period begins in November. We will post information on our website and include it in the October 2020 newsletter.

### How Working Remotely Affects Responsible Charge

*By Scott Drury, PE*

Working remotely used to be considered a company perk or a privilege for a select few. The coronavirus and resulting COVID-19 disease has affected many people’s day-to-day work environments. Even though many engineering services were deemed “essential,” the need to work from home also became “essential.”

Restrictions on travel, the closing of daycares and schools, and quarantining requirements caused a rapid change to the workforce; instead of working at their offices, people were now working from home in their living rooms, bed rooms, dining rooms, and on kitchen counters.

However, working from home has changed the professional work dynamic that we have been accustomed. It was just... different. The person sitting next to you may be doing second-grade math or eighth-grade English while your significant other or roommate is on a conference call in the kitchen, and a virtual ballet class is going on in the living room next to you.

More flexibility in work hours was needed in order for people to finish all their work on time, with reduced interactions between coworkers. Truthfully, I am inspired by the patience and flexibility that everyone has had to learn during this time.

As these temporary lockdowns are lifted and the return to “normalcy” is underway, much of the work dynamic has forever changed. According to various surveys, a majority of workers want to keep working remotely. Many people think their productivity was improved because there were less distractions, while others think they are more efficient because they are more concerned with completing deliverables rather than just putting in hours.
Many employers are trying to figure out the appropriate long-term strategies to retain employees and keep their businesses going with a new expectation that working remotely, at least part of the time, should be a standard benefit.

So, how does this affect professional engineering in Florida? At least a couple of concerns are obvious: maintaining responsible charge, and supervision and training of engineer interns.

Rule 61G15-18.011(1), Florida Administrative Code, defines responsible charge as:

(1) “Responsible Charge” shall mean that degree of control an engineer is required to maintain over engineering decisions made personally or by others over which the engineer exercises supervisory direction and control authority. The engineer in responsible charge is the Engineer of Record as defined in subsection 61G15-30.002(1), F.A.C.

The rule does not prohibit working remotely. It elaborates further in subsection 61G15-18.011(1)(a)1, F.A.C., (emphasis added) to clarify that the degree of control necessary for the Engineer of Record shall be such that the engineer:

personally makes engineering decisions or reviews and approves proposed decisions prior to their implementation, including the consideration of alternatives, whenever engineering decisions which could affect the health, safety, and welfare of the public are made. In making said engineering decisions, the engineer shall be physically present or, if not physically present, be available in a reasonable period of time, through the use of electronic communication devices, such as electronic mail, videoconferencing, teleconferencing, computer networking, or via facsimile transmission.

Until recently, many engineers have been used to working physically alongside the technical personnel under their responsible charge in a typical office environment. Remote working has changed the dynamics of the typical everyday interactions with technical personnel.

This just means the Engineer of Record may need to adapt some of their typical control measures in order to maintain the same degree of control necessary to be in responsible charge. Spending some time thinking about how the interactions have changed, and what procedures/policies may need to be updated is a good first step. A critical evaluation of the strengths and weaknesses of various team members, as well as your supervision style, has the potential to pay dividends in avoided problems, missed deadlines, unmet expectations, and so forth.

However, the second concern related to working remotely (supervision and training of engineer interns) may be a little more challenging. It is one thing for an engineer to adapt supervision, control, and communication measures in order to maintain responsible charge, but it can be something altogether different to adapt how you help someone prepare to be in responsible charge.

One of the requirements to be licensed as a Professional Engineer in Florida is experience. Chapter 471.015(2)(a)1 and 2, Florida Statutes, requires an applicant for licensure to submit proof to the Board that they have a record of the requisite number of years of experience “of active engineering experience of a character indicating competence to be in responsible charge of engineering.” (The requisite number of years is four for those with engineering science degrees and six for those with engineering technology degrees.)
The key point here is that the experience is not simply a number of years, but rather the amount of qualifying engineering experience that demonstrates that the applicant is able to be in responsible charge. This is why the application for licensure includes work verification along with three professional engineering references, each of whom answers questions related to the quality of work, character, and abilities of the applicant.

While there are some good online training courses and there definitely takes a lot of personal motivation in the learning process, engineer training still heavily relies on personal interactions with experienced engineers. These interactions are not required to be face-to-face, but they do need to happen.

Keep in mind, people learn in different ways. While some can learn audibly, many are visual learners, and others learn by doing. Some people ask a lot of questions; others need to be prodded to “open up” when they are unsure or confused about something. Unless you are using certain technologies while working remotely, the training experience of sketching something on a white board or sheet of paper and hashing out “why this does or does not work” or “why this way works better than this other way” is much more difficult.

Again, many people like working remotely because they think they are more productive and efficient due to fewer distractions. A litmus test for this would be to evaluate whether this increase in productivity and efficiency is due to either a decrease in new engineering tasks or in asking questions.

When someone is working remotely, the situation can be “out of sight, out of mind.” How often do you check in with them to see if they have questions or to help them resolve a problem, or are they checking in less and asking fewer questions? Are you sure they will contact you with a question, or will they muddle through because they “don’t want to bother you with a stupid question”? Do you avoid giving certain tasks to remote personnel because it is too difficult to explain it to them while they are working remotely?

Just like the traditional face-to-face training that takes a planned effort on the part of the supervisory engineer, remote training also takes a planned effort (albeit different) to ensure you are challenging your technical personnel and providing them with the tools and resources to help them gain this level of competence, while also maintaining their comfort in what can be a challenging and uncertain work environment.

We are still unsure how the workforce will continue to change given the response to COVID-19 disease or what the new “normal” will look like. And, we do not know how that will affect the profession of engineering. As a mechanical engineer, we could try to analogize this using a simplified view of the second law of thermodynamics: Everything occurring naturally tends to disorder and will remain that way unless we put energy into the system.

In reality, my purpose behind this article is to be both a challenge and an encouragement to everyone. Keep putting the energy in!

If you are not yet a Professional Engineer, make sure you are asking questions, requesting additional engineering tasks, and using seasoned engineers as a resource to gain the competence to be in responsible charge. If you are a Professional Engineer, make sure you keep challenging those under your responsible charge and actively be a resource for them to learn from your knowledge and experience.
Potential Liabilities Facing Threshold Building Inspectors

By John C. Pistorino, PE, SI

This is a follow-up to the article “What Are Threshold Building Inspectors?” written by Robert Sprehe, PE, SI, which appeared in the April 2020 FBPE newsletter. While the article is accurate, I think it falls short in discussing the liability of a Special Inspector of Threshold Buildings.

The law, Chapter 553.79, Florida Statutes, Permits; Applications; Issuance; Inspections, is often used against Special Inspectors when they fail to obtain a contract that allows them to fully inspect all structural aspects of a project.

I was the chairman of the Florida Engineering Society’s State Constructed Environment Committee when we devised the statute as a response to the collapse of the Harbour Cay Condominium in Cocoa Beach on March 27, 1981. Eleven workers were killed, and 23 others were injured.

The structure’s failure was the result of a combination of punching shear design and reinforcing steel placement. Shoring and reshoring was also a consideration. The concept of a Special Inspector (SI) was to ensure that a knowledgeable structural engineer would be involved in the construction phase of a building.

The Special Inspector idea was pulled from provisions that were in the South Florida Building Code at the time. The Special Inspector was to inspect a threshold building. We considered a “threshold" building as being a building with entry or threshold requirements. When defining a threshold building, we considered the dangers that buildings under construction, as well as in the long term, can be exposed to, including their size, complexity, and occupancy. Hence, we recommended that a threshold building be defined as having a height greater than three stories or 50 feet, a footprint exceeding 5,000 square feet, and an occupant content of greater than 500 persons.

We recommended that the Special Inspector had to be a PE or Registered Architect with design expertise in threshold buildings. In fact, we recommended that the SI also be the engineer-of-record (EOR) because the EOR is the most knowledgeable of the details of the design. However, knowing that a PE engaged in design may not be able to spend enough time on a construction site and still be available for design, the committee decided that the SI could designate a representative to do the actual inspections. The SI’s representative must be a full-time employee under the supervision of the SI, and have an engineering degree such that the representative could eventually qualify to become a PE.

Building officials in some jurisdictions thought that it was a conflict of interest for the engineer of record to also serve as the Special Inspector, and refused to grant permits on that basis. This is the polar opposite to the intent of the law. The most preferred person to be the SI is the EOR, since they are the most knowledgeable person on that project. Since the Special Inspector is working for the owner, and representing the building official, a conflict of interest argument does not hold water. In fact, building
officials must approve the retaining of a SI before issuing a building permit. For that reason, a building official can demand the removal or firing of a SI for cause.

The SI inspections were to ensure that the construction complied with the permitted drawings. To accomplish that in the case of concrete construction, every piece of embedded steel, among other things, must be inspected for placement, concrete cover, and size. The designated representative would create a daily inspection record as the statute requires so that the building official, who is also relying on such records, can review them on a weekly basis.

We (the committee) carefully created the concept that the SI would work on behalf of the owner/developer of the project, as well as supplementing mandatory inspections by the building official. The building official still had the authority and mandate to perform the inspections, but could choose to rely on the SI.

In essence, the SI serves two masters. However, there are no Florida cases that address whether a SI enjoys sovereign immunity as a building official’s agent.

**Liability of the Special Inspector**

However, as we engineers know, even though work is approved by a building official and a Certificate of Completion is issued, the building official is not liable for errors or non-compliance of the construction that may be discovered later. We also know that the contractor has the primary responsibility to build according to the permitted plans. The contractor also has the obligation to provide their own quality-control personnel and not to rely upon the SI. For this reason, it is imperative that the SI have the type of contract to provide sufficient time on the project to inspect all of the structural components. It is also important that the Special Inspector’s contract includes statements that the SI is not the quality-control entity for the contractor.

Therefore, if a non-compliance condition that requires correction is discovered after construction is completed, the responsible party should be the contractor. When such non-compliance is discovered by a building’s subsequent owner, an attorney is retained to ensure the problems are corrected. The issues are then addressed by the contractors and their attorneys, and claims are made.

The protocol for attorneys is to name and claim anyone who had anything to do with the non-compliant condition, and the Special Inspector may be charged with the costs of making the correction as much as the contractor is held responsible. The SI will have to submit detailed inspection notes and logs. The SI should have errors and omissions insurance, and the plaintiff (the new owner) will become aware of that. Even if the Special Inspector is not named in the initial lawsuit against the contractor, the contractor may also choose to bring in the SI as a third party.

A statute of limitations extends four years after a deficiency has been discovered, and a statute of repose covers 10 years from the time construction is completed.

Problems can arise if the Special Inspector’s representative is not actually present to inspect all components. The SI’s client may demand low inspection fees and challenge the amount of time necessary to perform the job. If an SI certified that the construction complied with the permitted plans and yet knowingly did not have a contract that gave the field representative enough time to inspect all of the structural components on site, a lawsuit may not only involve damage claims, but could also jeopardize the SI’s license if problems arise later.
The Special Inspector must also be retained and paid by the owner of the building. The SI cannot be retained by the contractor as this is considered a conflict of interest. A provision in a design-build project must specify that the Special Inspector’s portion of the work is strictly with the owner even if the SI is the engineer of record.

**Special Inspection Plan**

The FES committee also recognized that the engineer of record may not be available to perform SI inspections because of limitations or size of the office, monetary disagreements with the client, or physical limitations. Therefore, since the EOR is most knowledgeable of the project it was deemed that a Threshold Inspection Plan written by the EOR be put on the permit drawings themselves. That way any qualified Special Inspector could perform the work according to the plan.

However, the plan may not be as inclusive as it should be, and the SI has the responsibility to confer with the EOR for clarification and revisions to the plans when conflicts occur. The SI may not approve any construction that does not conform with the permitted plans, unless the permitted plans have been revised by the EOR and submitted to and approved by the building official. The SI could be potentially liable if the Special Inspector approves construction that has been modified in the field, but not approved by the EOR and the building official.

**Shoring, Reshoring, and Form Work**

The Special Inspector law was passed by the Legislature at 3 in the morning. At that time, lobbyists for contractors added in an additional requirement that the SI would also inspect shoring. This was not in the bill proposed by FES.

The Special Inspector is able to verify permanent construction, but shoring is part of the means and methods utilized by the contractor. Temporary shoring is a specialty that requires its own design and expertise. It is not possible or reasonable for the SI to approve shoring simply by observing what the contractor has installed. Yet that was included in the legislation. We know, of course, that the collapse of the Harbour Cay was a combination of design defects, steel placement, and possible shoring issues.

Therefore, we at FES thought it would not be fruitful to try to get this shoring provision corrected as the entire legislation might have been altered or eliminated. So, we advised that Special Inspectors insist in their contracts that the contractor would be required to retain an independent shoring engineer (PE) to design and inspect the shoring and form work before loads are placed upon it. The SI would then rely upon the inspection report from the shoring specialty engineer before approving placing of concrete or other types of loading. If the Special Inspector agrees to inspect shoring, the SI must have the expertise and know they are involving themselves in the means and methods of the contractor's construction, which has great implications pertaining to liabilities of personal injuries and construction failures.

At this time, we understand that this requirement is being enforced by most of the building officials, and that shoring design and inspection by a specialty engineer must also be provided to many of the building departments.

**Safeguards and Protocols**

Construction sites are always considered to be a dangerous environment. The Special Inspector is subject to the same hazards and exposure as the contractor’s personnel. However, the SI does not serve
as the contractor’s quality control and does not involve themselves with safeguards and Occupational Safety and Health Administration requirements.

However, the SI should not be required to be on construction sites that do not have the proper safeguards in place, such as guardrails and open hole protection, among other requirements. Of course, the SI must have their own protection equipment including hard hats, gloves, steel toed shoes, goggles, safety harnesses, or whatever equipment is appropriate for a particular site.

But if the SI sees an obvious violation that may endanger themselves and other workers, the Special Inspector should advise the proper authority, which could be the superintendent or job foreman. This is done as a humanitarian, common-sense gesture when working among others on a construction site. However, the Special Inspector’s contract must stipulate that being on the construction site does not require the SI to observe or review safeguards. That is the responsibility of the contractor.

About the Author:
John C. Pistorino, PE, is a practicing structural and civil engineer with PE license no. 11007, obtained in 1970. He received a Bachelor of Science degree in civil engineering from the University of Florida in 1964 and a Master of Science degree in civil engineering from the University of Miami in 1970. He has been president of Pistorino and Alam Consulting Engineers Inc. since 1986, and has served as the Florida Engineering Society Miami Chapter president and was chairman of FES Constructed Environment Committee, which proposed the state statute for Special Inspectors of Threshold Buildings. He holds Special Inspector license no. 202.

Special Recognition: Congratulations, Examinees
FBPE applauds all of the candidates that successfully passed engineering exams in the past quarter. We wish them much success as they move towards the next step in their engineering careers. See the complete list online.

Legal Department: Latest Engineer Discipline
Pursuant to Rule 61G15-37.001(11), Florida Administrative Code, the Florida Engineers Management Corporation is required to post all Final Orders involving active disciplinary cases to the website until the terms of the final order are completed, or until the licensee becomes inactive, retires, relinquishes the license or permits the license to become null and void. Included in this section are the most recent cases in which final action has been taken by the Board, a brief description of the licensee’s violation and discipline as well as a link to the final order. View actions.

Mark Your Calendar
We regularly update our calendar to ensure you stay up to date with the latest FBPE and FEMC events. Check out the calendar on our website.

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