AACE International Announces 2020* Virtual Conference & Expo

Estimate Validation and Estimating Guidelines
Defending Against Loss of Productivity Claims

+ Conference Brochure Attached
2020* VIRTUAL CONFERENCE & EXPO

DIFFERENT FORMAT
SAME EXTENSIVE CONTENT

With the current restrictions due to the COVID-19 pandemic, AACE’s 2020 Conference & Expo will be different, but still awesome! It will be virtual, but we’re bringing you all of the presentations. No travel costs or hassles like lost luggage. You’ll be able to participate in technical and networking sessions earning CEUs - and spend time in your office with clients or with your family each day. Some of AACE’s top leaders will be presenting at the virtual conference. There will be optional networking events and continuing education seminars. Register and get the best seat in the house!

18 LIVE PRESENTATIONS WITH Q&A
JUNE 28 - JULY 3
3 SESSIONS/DAY, 11AM - 3PM EDT
MEMBER: $400 | NONMEMBER: $500

+ 80 RECORDED SESSIONS
+ OPTIONAL SOCIAL TIME
+ NETWORKING WITH VENDORS
+ OPTIONAL SEMINARS
How do virus tests actually work?

A new virus emerges and spreads like wildfire. In order to contain it, researchers must first collect data about who's been infected. Two main viral testing techniques are critical: one tells you if you have the virus and the other shows if you've already had it. So, how exactly do these tests work? Cella Wright explores the science of Polymerase Chain Reaction testing and immunoassays, or serological testing.

Source: www.ted.com. Ted-Ed Original lessons feature the words and ideas of educators brought to life by professional animators.
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AACE International Online Store

For additional industry news and updates, you can always visit us at web.aacei.org.
The Top 10 Reasons To Join AACE International

Ready to advance your career and begin enjoying the advantages that our members enjoy? Whether you are an experienced cost engineer or a student, we have a membership ready for you.

1 Time
Gain access to a wealth of resources that will save you time and money! You’ll stay informed about the complexities of the cost and management profession - plus you’ll have access to discounts on educational programs, publications, and more!

2 Information
Locate thousands of technical papers and publications in the Virtual Library. AACE’s database is keyword searchable for quickly locating appropriate reference articles.

3 Career
Members can post resumes at no additional cost in our Career Center and keep your career on track through information sources such as our annual Salary and Demographic Survey of Project and Cost Professionals.

4 Learning
We offer numerous online learning courses on estimating and project management. The Approved Educational Provider program helps maintain high quality development courses and providers. AACE also holds many seminars throughout the year.

5 Resources
Starting with the TCM Framework and Recommended Practices that are available for free only to members to our bi-monthly publication Cost Engineering featuring articles for cost professionals around the world. Through the AACE International website, the Cost Engineering journal is a great current resource for members and as a member, you gain access to an archive of past issues.

6 Technical Development
Increase your knowledge and expertise by joining one of AACE International’s many technical subcommittees, subcommittees, and Special Interest Groups (SIG’s) at no additional cost to members. Discuss industry problems with your peers or help experts develop new and improved techniques and practices for the profession.

7 Networking
By attending a local section or our Annual Conference & Expo for interesting speakers, informational tours, social dinners and much more. The online Membership Directory is an excellent source for a list of contact information on thousands of members. Join one of our many technical subcommittees and participate in the AACE Forums - a great way to tap into the collective wisdom and experience of our world-wide membership.

8 Excellence
Our certification programs are independently accredited by the Council of Engineering & Scientific Specialty Boards. AACE certifications are a recognized credible standard in the cost management field. A recent study shows that individuals with an AACE Certification earn 17.4% more than their counterpart without a certificate.

9 Discounts
On products and services ranging from AACE International Conference & Expo registration fees, archived webinars and presentations, certification examination registrations, and more!

10 You!
We are your professional partner bringing you information and support you can trust. Join and become part of a unique network of individuals who are dedicated to improving the cost and management profession.

JOIN TODAY! web.aacei.org
Since my last message, AACE International has adapted, modified, and changed due to the risks presented by the COVID-19 pandemic. In multiple ways, we have gone virtual with our offerings and how our headquarters is presently operating. Our traditional Annual Conference and Expo this year will consist of 18 livestreaming sessions conducted over a six-day period from June 28-July 3rd. Approximately 80 pre-recorded technical sessions from presenters and panelists will be available to our online attendees.

We have also begun offering Tech Talks every Tuesday and Thursday, which are presented as free limited-time technical offerings for our members. As our members are working from home, these technical talks, given by top industry professionals, are an excellent way to obtain personal continuing education and CEU's toward AACE recertification. Headquarters has done a remarkable job pivoting quickly from preparing for a face-to-face conference to making a virtual conference a reality. All of this has been accomplished while our headquarters staff have been working remotely due to COVID-19.

Collaboration between staff members, which is necessary to coordinate all the moving pieces to prepare our virtual presentations, has been seamlessly accomplished remotely … no easy task. Additionally, our worldwide sections have risen to the task and are offering many virtual meetings to members. I would like to congratulate the versatility, creativity, and hard work exhibited by our Headquarters staff and our local section boards during these difficult times. AACE International members are being well served. Well done to them all.

AACE International has proven resilient while we weather the COVID-19 pandemic. 2019 was a strong year for the Association. Financially, we ended the year substantially higher due to both revenue and investments. Tracking our membership, the Association over the last four years has consistently maintained approximately 7500 members with a +/- 1% variability. In the midst of the current worldwide shutdown, renewals are tracking slightly higher over last year, as of this writing.

Interest in our certifications has been strong. As of May 01, we are seeing increased registrations to sit for exams, increases in actual exams completed, and increases in certifications granted. Our Body of Knowledge continues to grow and be updated. New Recommended Practices are being added every quarter and educational offerings to support our certifications have become a focus. All of this is only possible through the hard work, collaboration, and dedication of our volunteer members and our headquarters staff. As we are transitioning to the AACE International 2020-2021 year, accept my thanks and admiration for your achievements on behalf of the Association.

We have seen greater cooperation this last year between AACE International and the Royal Institution of Chartered Surveyors (RICS). Much thanks to Pete Bredehoeft of the Technical Associate Board, who is championing the International Construction Measurement Standards (ICMS) effort, as our AACE International representative. AACE International is also planning to participate next month in a Leadership Forum with RICS that is striving to work toward educational and training cooperation between the Associations.

As I am ending my term as Association President, I would like to express my thanks for the cooperation and patience that I have been afforded by our membership. The professionalism of our membership, as a whole, is unsurpassed in the projects profession and this makes me a grateful 25+ year member of the Association. A special shout out to Past Association President John Ciccarelli, who stepped in this year as acting Past President on the Board of Directors. John’s participation, steady hand, and knowledge were of immeasurable assistance to the current Board and the Association as a whole.

I would like to thank our Associate Board Chairs whose dedication and hard work are vital to the success of the Association. They drive the quality, quantity, and awareness of our Body of Knowledge, our certifications, and our educational offerings. The current Board of Directors has shown an amazing work ethic, knowledge, dedication and commitment to the success of AACE International. My appreciation to them for a job well done. Throughout the year, I have received council, advice, and a listening ear from many AACE Past Presidents. Much thanks and appreciation to Past Presidents Charlie Bolyard, John Ciccarelli, Martin Darley, Steve Warhoe, Mark Grotefend, Mike Nosbisich, and Ozzie Belcher. Our incoming President Chris Caddell has proven to be very hard working and capable this year. I wish him well during his year as President and offer my assistance wherever needed.

And lastly, I would be remiss as I end my term without thanking the three members who started my AACE International journey, Larry Dysert, Bruce Elliott, and John Hollmann. All three have been long-term coworkers, mentors and friends who first acquainted me with AACE International. Bruce’s words that introduced me to AACE often come to mind and have been career changing for me. “If you are interested in cost, schedule and estimating, you have to be a member of AACE.” And thus it began.

If you would like to contact our current president with questions or comments about The President’s Message please address your e-mail to president@aacei.org. To engage in other discussions, check out AACE International’s online Communities at communities.aacei.org.
Estimate Validation and Estimating Guidelines

BY KUL B. UPPAL, PE CEP DRMP FAACE HON. LIFE

A careful review of the estimate should be done to verify that the cost estimate follows established standard estimating guidelines for the department or the company. This would include a review to verify that standard estimating procedures were followed regarding estimate format, cost coding, presentation, and documentation. This would include items such as the following:

- Verify that the proper estimating methods, techniques, and procedures were used that match the class of project completeness. In other words, different estimating techniques will be used depending on the type and completeness of the engineering documents and deliverables available to create the estimate.

- Confirm that the estimate summary and details are organized and presented in the proper established format. The estimate should follow the standard work breakdown structure and code of accounts. Also, the estimate format needs to be consistent with the intended purpose of the estimate and provide sufficient detail to meet this purpose.

- Ensure that all estimate backup information is organized properly. All values on the summary page of the estimate should be traced to the estimate detail pages, and all information on the estimate detail pages should be traced to the estimate backup or source documents.

- Verify that all allowances and factors being prepared are consistent with comparable projects and estimates. This level of estimate review helps to ensure that all estimates prepared by the department are using established guidelines and are presented in a consistent manner from project to project.

ENGINEERING/DESIGN REVIEW

The next level of estimate review should be held with the engineering team and should evaluate the estimate in terms of accurately representing the project scope. The core members of the engineering team are key participants in this review, along with the lead estimator and estimating team.

COMPLETENESS OF ENGINEERING DELIVERABLES

One of the first items to review is complete list of all drawings, sketches, specifications, and other engineering deliverables used in preparing the estimate to ensure that it is complete. The lead engineers need to cross-reference this listing against their own engineering drawing and deliverables lists to make sure that all relevant information was passed on to the estimating team. The
revision numbers of drawings should be checked to ensure that they match the intended revision for the estimate. If late changes to the engineering drawings have occurred, and are intended to be incorporated into the estimate, this needs to be checked to ensure that all late changes have been included.

**DESIGN BASIS OF ESTIMATE**

The engineers should review the basis of estimate and summary of project scope carefully to verify and correlate their understanding of the project scope with that expressed in the estimate. All exclusions expressed in the BOE should be agreed to; and all allowances and assumptions verified. If there have been any questions about interpretation of the drawings or engineering deliverables now is the time to discuss the estimator's interpretation with the engineers, and to make sure that the project scope is accurately reflected in the estimate. All drawings used for the estimate should be available during this review. Sometimes it can help to have the estimator explain how each drawing was used in the preparation of the estimate. For example, the estimator may describe whether particular quantities were obtained from a detailed takeoff using isometric drawings, or if the quantities were derived from a P&ID and plot plan.

**ENGINEERING/DESIGN COSTS**

The engineering team should also review the assumptions and costs associated with the engineering and design portion of the estimate. The engineering team needs to feel comfortable that the amount of money included in the estimate for engineering, design, and support is adequate for the level of effort expected to be expended on the project.

**RISK BASIS OF ESTIMATE**

Last, the engineering team should review the risk basis of the estimate and be in position to agree with the analysis of cost risk associated with the estimate. The level of risk associated with scope definition, and with engineering/design costs should be of interest to the engineering team, and concurrence sought. As mentioned, the goal of this portion of the estimate review is to make sure that the scope of the project as understood by engineering is reflected in the estimate. At the end of the engineering review, the estimate should have the full support of the engineering team during subsequent reviews.

**PROJECT MANAGER/PROJECT TEAM REVIEW**

Once the estimating and engineering teams have reviewed the estimate closely, it is ready for review by the project manager and the rest of the project team. The objective now is to gain the entire project team's support of the estimate, and especially that of the project manager. This is also the first point where the estimate should be able to pass overall validation tests, in addition to a quality review.

**ESTIMATE DOCUMENTATION**

The first part of this review should be the examination of the estimate documentation by the project team and project manager. This includes the basis of estimate, as well as the estimate summary and estimate detail pages. The purpose is to ensure that the estimate is presented in an understandable manner. If standard estimating guidelines have been followed (as discussed above), all estimates should be presented in a consistent and understandable style. It is very important that the project manager fully understand how the estimate is prepared because he/she often becomes the person responsible for presenting, and sometimes defending, the estimate to upper management, and later to the eventual customer. The entire project team should also understand the entire estimate package, format, and contents.

**COST REVIEW**

Engineering should have already reviewed the engineering, design, and associated support costs. Now is the time for the other key members of the project team (project manager, project controls, procurement, construction manager, commissioning manager, etc.), to examine their respective costs that are included in the estimate, and to obtain agreement that they are correct. Although primarily the responsibility of the estimating team, the scope related costs should also be reviewed by the rest of the project team to gain consensus. In particular, the following areas should be discussed:

- Verify that the latest project schedule agrees with the estimate, particularly as it relates to escalation.
- Examine the project administration, and other home office related costs for reasonableness.
- Conduct a final constructability review to ensure that the methods of installation and construction assumed in the estimate are reasonable and cost effective.
- Review the construction indirect costs (field staff, temporary facilities, temporary services, construction equipment and services, construction tools and consumables, etc.) to make sure they are reasonable.
- Ensure that all required start-up and commissioning materials are included, if required. This is often an area of cost that is overlooked.
- For international projects, there may be many more items of cost that should be carefully reviewed. These may include such items as international labor adjustments for productivities and wage rates, adjustments for workweek variations, material cost adjustments for both local and globally sourced materials, international freight costs, international duties and taxes, labor camp costs, premiums for expatriate costs, etc.

**ESTIMATE VALIDATION**

In most organizations, the project manager is ultimately held responsible for the execution of the project. Therefore, the project manager has a vested interest in performing “sanity checks” or otherwise validating the estimate as reasonable. Most experienced project managers will have various “rules-of-thumb” that they will want to use to verify against the estimate. Regardless, the estimate should include an estimate review metrics report that summarizes and compares several key benchmark ratios and factors versus historical values from similar projects. If sufficient historical data from completed projects is not available, information from other trusted estimates may need to be substituted. The goal is to ensure that key metrics from the estimate are in line with same metrics from similar projects.
So, You Want To Be An Expert Witness?

**BY JAMES G. ZACK, JR., CFCC FAACE**

**AACE may be able to help. Many of AACE’s certifications may also help.** The Certified Cost Professional (CCP), Certified Estimating Professional (CEP), and Planning and Scheduling Professional (PSP) certifications demonstrate that an individual has mastered these fields. These certifications will certainly help someone become qualified as an expert witness in a trial or arbitration hearing. But is this all you need? Take a look at AACE’s Certified Forensic Claims Consultant (CFCC) certification.

What is an expert witness? This is an individual who possesses knowledge or experience of a particular field or discipline beyond the knowledge or experience possessed by most laypersons. An expert witness, unlike a percipient or fact witness, is allowed to provide an impartial opinion on particular disputed issues within the area of their expertise. Experts are qualified and allowed to provide testimony in arbitration or litigation to explain complex subjects to the “triers of fact” (arbitrators, judges, or juries) that they generally would not understand based on their own background or experience. For example, how many members of a jury can be expected to understand a forensic schedule delay analysis based on their own background? An expert witness is often employed to aid the triers of fact in understanding a complex schedule delay analysis.

An expert witness is someone qualified by knowledge, skill, experience, training, and education. An expert witness, once qualified to provide testimony, may testify in the form of an opinion if the expert’s specialized knowledge will aid the trier of fact in understanding evidence or determining a fact in issue; the expert’s testimony is based on sufficient facts or data; the testimony is the product of reliable principles or methods; and they have reliably applied these principles and methods to the facts of the case.

With this as a background, how does AACE’s CFCC certification help you to be proffered and qualified as an expert witness? AACE’s professional level certifications are focused on one’s skills, knowledge and competency, the CFCC certification certifies the individual’s expertise that comes with long-term immersion in applying the skills, knowledge and competencies in industry. The CFCC certification is intended to assist competent, experienced claims professionals in establishing themselves as experts with the requisite skills, knowledge, competency and expertise to be evaluated and qualified to provide expert testimony in construction industry disputes that have moved to arbitration or litigation as the forum for final resolution. Individuals applying to sit for CFCC certification examination must have substantially more expertise and demonstrated competency specific to claims preparation, analysis and dispute resolution.

It is difficult to qualify for the first time as an expert witness. The biggest challenge for an individual who has not testified previously is to convince legal counsel to retain them for the very first time in
an expert capacity. Attorneys representing clients in arbitration or litigation are typically very conservative in choosing experts. They tend to select known experts, people who have been qualified and testified numerous times on specific topics. Quite often, attorneys do not consider, or are hesitant to consider, individuals with no, or limited, testifying experience simply because these individuals are not well-established experts.

The conundrum of “You cannot get a job without experience, but you cannot get experience without a job” holds true for individuals attempting to get their first assignment as a testifying expert. This is what gave rise to AACE’s CFCC certification. The purpose of the CFCC certification is to demonstrate to attorneys and triers of fact that the individuals holding this CFCC certification have the educational background, demonstrated competency, experience, underlying professional certifications, and expertise in industry to qualify as testifying experts. Of course, once over this hurdle, the individual must still demonstrate to legal counsel, and ultimately the trier of fact, that their education, training, experience, and expertise are directly relevant to the elements in dispute in the case in question.

Individuals holding AACE’s CFCC certification represent themselves as an expert, or one who is capable of being qualified as an expert, in one or more aspects of cost management, project controls, scheduling, and project or program management. As such, the requirements to sit for this certification examination are considerably more stringent than the professional level AACE certifications. The minimum requirements are those set forth below –

**Education:** A four (4) year college/university degree from an accredited institution of higher learning in engineering, building construction technology, business, economics, construction management, architecture, building sciences, computer science, mathematics, or a related field.

**Experience:** A minimum of twelve (12) years of verifiable experience in the construction claims arena. Project assignments will not suffice for this experience requirement. The applicant’s experience on jobsites must have been centered on the drafting and submittal of change orders, time extensions, and claims or requests for equitable adjustment. Additionally, applicants must be able to demonstrate that they have actively and consistently participated in the entire range of dispute resolution activities from change order or claims preparation and submittal through resolution in mediation or litigation. The experience cited must deal directly with the prosecution, defense and/or resolution of changes, claims, and disputes.

**Post Education Professional Certifications:** All candidates must have at least one of the following professional certifications –

- Certified Cost Professional™ (CCP™)
- Planning and Scheduling Professional™ (PSP™)
- Certified Construction Manager (CCM)
- Certified Professional Constructor (CPC)
- Professional Engineer (PE)
- Registered Architect (RA)
- Chartered Quantity Surveyor (CQS), or
- Admitted to Practice Law

If an individual does not have one of these certifications, they may substitute an additional twelve years of claims analysis experience in lieu of professional certification after education.

**References:** All candidates must submit four letters of recommendation from industry professionals (external or in-house legal counsel and/or clients, past or present) who can attest to the candidate's years of claims related experience.

**Written Report or Professional Paper:** Candidates must submit one of the following: (a) an expert report prepared by them and submitted to and accepted by an adjudicator as evidence in a matter of litigation; (b) a formal claim submittal prepared by them; or (c) a claims related professional/technical paper concerning an issue in which they have personal experience and that has been published or accepted for publication by a professional journal. The report or paper submitted must have been prepared by the candidate no more than 24 months before applying to sit for the certification exam and must be submitted electronically along with the application.

**AACE Cannon of Ethics and ASFE’s Recommended Practices for Design Professionals Engaged as Experts in the Resolution of Construction Industry Disputes:** All candidates for the CFCC certification must review, accept and agree to abide by both AACE’s Cannon of Ethics and the ASFE’s Recommended Practices for Design Professionals Engaged as Experts in the Resolution of Construction Industry Disputes. (This latter set of recommended practices is included as a provision of the certification examination application because AACE International has endorsed these recommended practices.

What do attorneys look for in a potential expert witness? In selecting an expert, attorneys look for academic credentials; professional experience beyond expert consulting with a progression of responsibility over the years; and balanced work – that is not always working exclusively for owners or contractors. Beyond this, experience shows that attorneys consider the credibility of a potential expert witness – professional licenses or certifications; past employment and positions; and papers written or presented. Additionally, attorneys must consider a potential expert’s suitability. Can the expert write a persuasive report? Can the expert “teach”? That is, can the expert communicate well and educate the trier of fact? Is the expert persuasive about themselves and their expertise? Can the expert handle tough questions? Does the expert utilize industry accepted methodologies?

AACE’s CFCC certification will help potential experts meet some of these tests and satisfy some of these concerns. The CFCC Certification does not certify basic competency but, rather, actual expertise in the role of an expert in a construction dispute going to arbitration or litigation. It requires significant indepth experience in and knowledge of legal issues; damages calculation and analysis; scheduling and delay analysis; project management and documentation; and professional practice and ethical considerations that testifying experts deal with. If you want to become an expert witness, the CFCC certification is an excellent starting point to help achieve the goal of becoming an expert witness.
Jennifer Khairallah, M.Eng, is a project management professional with 5 years of experience in mega capex P3 projects in the healthcare and transportation sectors. Working with major general contractors, she was involved in all project phases from initial planning to design, procurement, site execution, performance monitoring and project close-out.

Jennifer had a third culture upbringing. Born in Beirut, she never had the opportunity to live in Lebanon, her home country. Her childhood was spent between England, Scotland, and Qatar, before settling in the United Arab Emirates. Being exposed to different cultures at a young age broadened her view of the world and allowed her to learn four different languages. For the most part, Jennifer grew up in Abu Dhabi where she witnessed the construction boom of one of the most rapidly expanding cities at the time.

She naturally became interested in the built environment and was fascinated by the thought that humans can build such massive buildings and infrastructures. This curiosity pushed her to pursue a Bachelor of Architecture at McGill University in Montréal, Canada, thus satisfying her creative and rational persona. Her studies forged her strong work ethics and instilled in her the drive to succeed in high pressure environments. After completing a couple architecture internships, the interest of understanding the “how” of the built environment led her to complement her architectural studies with a minor in construction engineering and project management. From there on, a passion for working on mega capex construction projects became clear.

Upon graduation, Jennifer joined Construction Santé Montréal, a joint venture between Laing O’Rourke and OHL Canada during the execution phase. The consortium was responsible for building Phase 2 of the Centre Hospitalier de l’Université de Montréal (CHUM), one of the largest P3 healthcare projects in North America, a new landmark in downtown Montréal. The mandate consisted of the construction of the 325,000 m² world-class hospital complex, holding 772 private rooms, 26 inpatient units, and 39 operating rooms, relying on cutting edge technologies and state-of-the-art patient care equipment.

Enjoying the overall view, as well as the granular details, Jennifer joined as a field planner acquiring skills in scheduling and progress monitoring using Primavera P6. She quickly realized the importance of projects controls tools to evaluate performance and drive progress.

Oftentimes, the construction team becomes too focused in execution, which is when an external perspective becomes highly valuable to keep the project on scope, within budget, and respecting the schedule. With this mindset, Jennifer decided to put her planning skills to practice and joined the construction team as an assistant site manager. She was responsible for coordinating site activities of the public spaces and artwork package, liaising daily with subcontractors and consultants. In parallel, she completed a Master of Building Engineering degree from Concordia University on a part-time basis, combining professional and educational growth.

She believes achievement is all about the right mindset. Anything is possible if you put in the hard work and persevere. By studying and working simultaneously, it became extremely satisfying to apply the lessons learned in the classrooms, directly on the worksite. After the hospital handover, Jennifer joined SNC-Lavalin as a project controls engineer working on the Réseau express métropolitain (REM), a 6B$ public transit project consisting of 67-km and 26 stations, one of the largest automated light transportation system in the world.

Jennifer joined the project controls team where she participated in setting up the budget proposal during initiation and planning phase. After project award, she took on a cost control role leading the budget management of multi-million subcontracts for the Tracks & Systems package in the execution phase. Responsible for maintaining monthly forecasts, tracking, and analyzing costs and conducting earned value analysis using JD Edwards, she quickly became a key member of the team providing technical training and support to the organization. During her time on the REM, she was able to equip herself with best practices and developed tracking tools to better monitor, control, and report on the job performance.

Jennifer is currently working as a Senior Associate at Deloitte in their Capital Projects & Infrastructure practice, providing services in project management, cost/schedule assessments, construction audits and advising clients on their project controls and governance programs. Working with highly skilled and driven individuals is a key motivator that becomes an everyday learning experience. Everyone is a mentor and a mentee if you are willing to learn and share.

Jennifer joined the AACE International while working at SNC-Lavalin. She started attending various seminars on project controls and really enjoyed networking and connecting with like-minded professionals. Her functional manager at the time was the President of the Montréal Section and was very supportive of her learning ambitions. She was even given the opportunity to contribute and produce visuals for a publication titled, “Schedule and Cost Management of Subcontracts,” presented at the 2018 AACE International Conference & Expo. Jennifer believes that the AACE conferences offered tremendous insights into leading practices and are invaluable in keeping up to date with the current challenges faced in the industry. As a woman in construction, Jennifer quickly realized the importance of taking your place, sitting at the table, and having your voice heard in any context. She always seeks to empower her female colleagues in project controls and promote personal growth and self-development.

One of her favorite quotes is: “Fortune does favor the bold and you’ll never know what you’re capable of if you don’t try.” – Sheryl Sandberg
Natasha Sleigh PSP is a construction litigation consultant with more than seven years of experience involved in construction claims and litigation. She holds an AACE International certification as a Planning and Scheduling Professional (PSP), and is a Project Management Professional (PMP) and a Certified Construction Auditor (CCA).

Born in Honolulu, HI, and growing up in a small town outside of Seattle, WA, Natasha excelled in school and fell in love with books and soccer. Thrilled to continue learning, Natasha enrolled at Western Washington University in Bellingham, WA to pursue her passion of history and politics, settling on a B.A. of Political Science and Government with a minor in Sociology – just because it was fascinating! After obtaining her undergrad degree, Natasha got a summer job as a technician with Talgo America, working in the Capital Projects department renovating the Amtrak Cascades interior railcars. Feeling unfulfilled and craving change, Natasha left the Puget Sound region in pursuit of making the world a better place for everyone.

Natasha’s journey into the disputes industry took a bit of a zig zag: with a stop in Denver, CO, working on a political campaign to Washington, DC, where she knocked on doors for environmental fundraising. Ultimately, her move to DC led to a temporary position with J.S. Held, LLC. Shortly thereafter, and hired full-time, Natasha hit the ground running, learning everything about construction in general, and builder’s risk and property damage claims, in particular. Eventually, she knew that to pursue this career, she would need a more formal education, and ended up earning her M.S. in Construction Management from Louisiana State University.

Wanting to focus solely on construction schedule and delay disputes with her goal set on becoming an expert witness, Natasha made yet another move. This time to Philadelphia, PA, to work for Secretariat, an independent expert services firm concentrating her career on construction litigation and delay analysis.

Natasha is currently a manager with Secretariat in the Washington, DC, area. There, Natasha specializes in consulting on construction projects in the areas of delay and disruption analysis. Additionally, she evaluates damages as they relate to any delays or disruptions to a project.

Natasha has analyzed and reviewed construction claims for a wide variety of construction projects throughout the U.S. and internationally, including work on the multi-billion-dollar Panama Canal Expansion Project, multi-boiler coal-fired power plants, a suspended multi-billion-euro underwater natural gas pipeline, luxury mixed-use campuses, and public school buildings.

Previously, with JSH, Natasha notably worked on physical damage cost claims for the One World Trade Center campus following Superstorm Sandy and managed the development of preliminary damage estimates for multiple independent school districts in the Texas Gulf region following Hurricane Harvey. Additionally, Natasha stepped up to become the youngest founding member of JSH’s internal Quality Control and Corporate Training Committee (a senior consultant on a committee of VPs and EVPs), assisting in the development of quality control procedures and templates, while also developing and maintaining the extensive internal learning and development programming.

Natasha has been an AACE member since 2017, and is currently closing out her term as the 2019-2020 Delaware Valley Section Secretary where she has enjoyed being involved with the inner workings of the Section Board and promoting participation with women and younger professionals. Earlier this year, Natasha joined AACE’s Rising Professionals Committee (RPC) and is looking forward to working with the team’s outreach initiatives. During her recent time in the Philadelphia region, Natasha had been involved with the local Professional Women in Construction chapter as a co-chair of the Student Outreach committee and is continuing to do so remotely until a DC chapter can be created.

Right now, Natasha is getting reacquainted to the DC region with her two dogs and partner while also preparing to tackle higher goals professionally.

Natasha’s advice to the next generation of young professionals: “Go for it. No matter who you are, your background, your age, your skin color, your politics, religion, sexual orientation, veteran status, etc. There is a place for you at the table. You may have to bring your own chair, but never allow the status quo to silence your ideas and opinions. You bring a unique perspective—that is valuable. Make space for yourself and more importantly, bring others up the ladder after you.”

SOURCE JUNE 2020
AACE Announces Virtual 2020 Conference & Expo

BY JENNIE AMOS

AACE appreciates everyone’s patience during these uncertain times while we endure the global pandemic. For the health and safety of our attendees and staff we have made the difficult decision to not hold an in-person Conference & Expo in Chicago this year. Instead the event will be held virtually over a six-day period from June 28-July 3rd from 11 a.m. – 3 p.m. EDT each day.

The 2020* Virtual Conference & Expo will consist of 18 livestreaming sessions (3 live sessions/day over that time frame) from some of AACE’s top-rated speakers, as well as an estimated 80 pre-recorded sessions from speakers and panelists. The pre-recorded sessions will be available to access immediately on June 28th. We are also planning a number of virtual networking events, plus the technical subcommittee meetings, SIG meetings, a Rising Professionals Committee meet and greet – and will be working with our exhibitors and sponsors so you can engage with them virtually as well.

We recognize that the in-person event provides you with access to leaders and professionals in the field, networking opportunities and social functions and in recognition of that we have deeply discounted the fee of the Virtual Conference & Expo to $400 for members and $500 for non-members. This fee includes all of the technical content you could have experienced at the in-person event, all the technical papers, plus all of the conference recordings that normally would not have been made available until several months post event and were an additional fee. (The recorded sessions have been offered with the purchase of the Conference & Expo registration at the deeply discounted additional rate of $195 – or afterwards at $750 member/$850 non-member rate.)

AACE is committed to providing timely and relevant technical guidance to our members and we hope that you will make the decision to join the virtual event. Our staff has been working on the virtual event since March, although due to contractual obligations we were not able to announce this change until recently. The registration platform for the 2020* Virtual Conference & Expo is currently being developed. Registration is now open. We hope you will join us for the 2020* Virtual Conference & Expo.

Individuals who were pre-registered for the 2020 Conference & Expo have been given the option for a full refund, or to have a partial refund with the remaining balance being applied to the 2020* Virtual Conference & Expo. Individuals who were booked at the Hilton Chicago will have their reservation canceled and receive a full refund from the hotel.

Thank you for your continuing support of AACE. Be well!

JUNE 28 - JULY 3
3 live sessions / day
+ all of the recorded sessions
+ virtual exhibit hall
+ networking
+ CEUs / PDhs

$400 member | $500 nonmember
We would love for you to join with AACE and some of our top thought leaders at the 2020* Virtual Conference & Expo. You can learn from some of the contributors to Recommended Practices, the TCM Framework, and more! Attend the live sessions, offered from 11 a.m. – 3 p.m. EDT over 6 days (June 28-July 3) and be able to participate in the Q&A of these sessions. Plus, you will get the recordings from all of the other technical presentations.

There will be exhibitors with whom you can learn about the latest tips, tools, and services. We are planning a variety of networking opportunities for you, too.

There is an optional continuing education seminar, CCP Certification Exam Prep, that will be held July 7-10 from 10 a.m. - 2:30 p.m. EDT each day (with a 30-minute break for lunch at noon EDT). Separate registration is required for this continuing education seminar.

Go to our website to learn more about the 2020* Virtual Conference & Expo.

Click here to register to join us at the event!

REGISTER NOW

(Login required to get the member discounted rate.)
How COVID-19 Spreads

By Centers for Disease Control and Prevention

COVID-19 is thought to spread mainly through close contact from person-to-person. Some people without symptoms may be able to spread the virus. We are still learning about how the virus spreads and the severity of illness it causes.

Person-to-Person Spread
The virus is thought to spread mainly from person-to-person.

• Between people who are in close contact with one another (within about 6 feet).
• Through respiratory droplets produced when an infected person coughs, sneezes, or talks.
• These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.
• COVID-19 may be spread by people who are not showing symptoms.

The Virus Spreads Easily Between People
How easily a virus spreads from person-to-person can vary. Some viruses are highly contagious, like measles, while other viruses do not spread as easily. Another factor is whether the spread is sustained, which means it goes from person-to-person without stopping.

The virus that causes COVID-19 is spreading very easily and sustainably between people. Information from the ongoing COVID-19 pandemic suggest that this virus is spreading more efficiently than influenza, but not as efficiently as measles, which is highly contagious.

The Virus May Be Spread in Other Ways
It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads, but we are still learning more about how this virus spreads.

Spread Between Animals and People
• At this time, the risk of COVID-19 spreading from animals to people is considered to be low. Learn about COVID-19 and pets and other animals.
• It appears that the virus that causes COVID-19 can spread from people to animals in some situations. CDC is aware of a small number of pets worldwide, including cats and dogs, reported to be infected with the virus that causes COVID-19, mostly after close contact with people with COVID-19. Learn what you should do if you have pets.

Protect Yourself and Others
The best way to prevent illness is to avoid being exposed to this virus. You can take steps to slow the spread.

• Maintain good social distance (about 6 feet). This is very important in preventing the spread of COVID-19.
• Wash your hands often with soap and water. If soap and water are not available, use a hand sanitizer that contains at least 60% alcohol.
• Routinely clean and disinfect frequently touched surfaces.

Learn more about what you can do to protect yourself and others.
Defending Against Loss of Productivity Claims

BY DR. TONG ZHAO, PE PSP, J. MARK DUNGAN, AND XUYANG LIU

ABSTRACT
Construction labor productivity represents how efficient a contractor is in applying labor resource to produce output. Labor productivity is susceptible to many factors during construction. Some of them may be attributable to the owner, such as those caused by owner changes and directed acceleration; while others are within the contractor’s control. When it cannot meet its planned productivity, the contractor’s profit margin shrinks, or it could even suffer a loss. It is not uncommon that owners become targets for loss of productivity claims. While loss of productivity is one of the most contentious subjects in construction disputes, it is a challenging task to defend against such a claim, especially for inexperienced owners. In this article, the basic information related to loss of productivity claims is first set forth. And then the defense against loss of productivity claims from the aspects of entitlement, causation, and quantum is discussed. This article also provides suggestions on how to prevent, mitigate, and manage loss of productivity claims, especially for inexperienced owners.

INTRODUCTION
In construction, productivity is a measurement of rate of work completed per unit of effort, usually measured in labor hours. When the contractor expends more effort per unit of production for a significant portion of the work, that is usually referred to as Loss of Productivity (LOP). [1, p.1] When the contractor’s means and method of performance or work sequence is impacted by factors attributable to another party, a loss of productivity (or disruption) claim can be filed against the parties that caused the damage. LOP claims (or disruption claims) can be asserted by contractors against owners, subcontractors against contractors, contractors against subcontractors, and even contractors against design professionals when permitted by law. This article concentrates on claims by contractors against owners, although the principles discussed herein generally apply in other LOP claims.

For a LOP claim, there can be multiple outcomes: it will be accepted in full; it will be accepted but with a reduced amount;
FACTORS AFFECTING LABOR PRODUCTIVITY

Labor productivity is susceptible to many factors. Some of them are non-human related, such as project characteristics, location, weather, and other external conditions; others can be human related, including management characteristics; changes; labor skills, morale, and availability; and there are factors combining both human and non-human aspects. For example, both human and non-human reasons could cause construction delays, which may necessitate construction acceleration/schedule compression. This sometimes makes it very difficult and challenging to track labor productivity in sufficient detail to determine the root causes for reduced productivity. In the AACE International Recommended Practice 25R-03 [1, p.4], events and circumstances that may cause productivity loss are summarized and include:

- Absenteeism and the missing worker syndrome
- Acceleration (directed or constructive)
- Adverse or unusually severe weather
- Availability of skilled labor
- Changes, ripple impact, cumulative impact of multiple changes and rework
- Competition for craft labor
- Craft turnover
- Crowding of labor or stacking of trades
- Defective engineering, engineering recycle and/or rework
- Dilution of supervision
- Excessive overtime
- Failure to coordinate trade contractors, subcontractors and/or vendors
- Fatigue
- Labor relations and labor management factors
- Learning curve
- Material, tools, and equipment shortages
- Overstaffing
- Poor morale of craft labor
- Project management factors
- Out of sequence work
- Rework and errors
- Schedule compression impacts on productivity
- Site or work area access restrictions
- Site conditions
- Untimely approvals or responses

These listed circumstances and events can be the root causes for the LOP, or the downstream effects of certain root causes. Either the owner, the contractor, the subcontractors/suppliers, a third party, or even force majeure events can be the causes or contributors for those circumstances and events listed. Observations of any of these circumstances or event would not automatically justify the entitlement of a LOP claim against the owner. Instead, it is the claimant’s burden of proof that the causes that resulted in LOP were something for which the owner is liable.

REVIEW OF THE ENTITLEMENT OF A LOP CLAIM

Loss of productivity can be reflected as slow pace of work, rework, longer travel time, idle time, come-back work, or a combination of them. As previously discussed, many factors affect labor productivity. A contractor’s entitlement to a LOP claim can be derived from either the contract conditions or as a result of the owner’s breach of its implied or expressed duties. In its claim, a contractor must establish its legal basis by stating the specific clauses within the contract upon which it relies, or what duties it alleges the owner has breached. When legal principles other than what are expressly specified in the contract are involved, advice and guidance from legal professionals are usually necessary. A legitimate cause that gives rise to a LOP claim is the occurrence of an event, act or omission or a series of events for which the owner is contractually responsible, which would prevent the contractor from reaching the productivity level absent that event(s) or act. LOP may result from the direct impact of an owner responsible event, such as owner’s denying access to the site; or the cumulative impacts of a substantial number of contract changes, modifications or other hindrances.

Entitlement is the first requirement to prove a LOP claim, as stated by AACE International [1, p.7]:

While the general cause(s) of lost productivity may be easy to speculate upon (at least in hindsight), the contractor seeking to be compensated for a cost increase must first demonstrate entitlement, that is, a contractual right to recover damages, to the level of certainty required by decision makers or the trier of fact.

Lack of entitlement is a common defense against a LOP claim. Productivity lower than the contractor’s plan does not necessarily mean that the LOP is attributable to the owner. It is straightforward that if the LOP resulted from the contractor’s self-inflicted events or impacts, it would have no entitlement for a LOP claim. Typical self-inflicted events or impacts include:

- Lack of experiences or proper training
- Poor workmanship, construction errors, and resulted rework
- Lack of proper management
- Lack of coordination between trades
- Deficient construction engineering for which the contractor was responsible

Further, if the impacts were caused by another party unrelated to the owner, such as the contractor’s subcontractors or vendors, the LOP claim against the owner has no merit, either.

If the impact event was foreseeable under the construction contract, or part of the contract, the LOP claim would not have merit either. For example, a typical construction specification was used on a particular project, and this same specification had been successfully applied many times on similar projects. The contractor asserted that it suffered loss of productivity caused by the temporary structure that it designed per the specification. In this situation, the contractor would have difficulty proving the entitlement for its LOP claim based on an alleged defective specification, and the owner would have a good chance to prevail before the triers of fact on this LOP claim entitlement issue. In this case, lack of entitlement can be a very reasonable defense against the claim for the alleged LOP, which resulted from the defective construction specification that was asserted.
A contractor may lose its entitlement for a University (OSU) while M&S was the subcontractor to P.J. Dick, who was the general contractor for OSU. According to the subcontract, for delay and disruption events, “Subcontractor agrees to provide written notice within two (2) business days of the event or occurrence giving rise to the impact to Subcontractor’s Work, or such claims shall be barred.” The building was not enclosed as scheduled to provide a weather proofed condition for M&S to perform its work. P.J. Dick, however, demanded that M&S perform its work in the building protected using Visqueen (a brand of plastic sheeting). Despite protest, M&S complied with P.J. Dick’s demand. Upon completion of its work, M&S filed a claim against P.J. Dick for increased labor costs caused by being forced to work without the anticipated interior climate control. The Franklin County Court of Appeals held that, because M&S did not specifically refer to labor inefficiencies or loss of productivity in its written notice to P.J. Dick, the subcontractor was barred from making a claim for the LOP damages.

In Centex Bateson Constr. Co. [3], Veterans Affairs Board of Contract Appeals (VABCA) states:

Cumulative impact is the unforeseeable disruption of productivity resulting from the “synergistic” effect of an undifferentiated group of changes. Cumulative impact is referred to as the “ripple effect” of changes on unchanged work that causes a decrease in productivity and is not analyzed in terms of spatial or temporal relationships. This phenomenon arises at the point the ripples caused by an indivisible body on two or more changes on the pond of a construction project sufficiently overlap and disturb the surface such that the entitlement to recover additional costs resulting from the turbulence spontaneously erupts ... This result is unforeseeable and indirect.

In the context of asserting a LOP claim for cumulative impacts of multiple changes, express reservations of right in change orders, supplemental agreements, or contract modifications are usually required to preserve the contractor’s right to make such a claim. If certain language in a change order and particular contract provisions release the owner from liability for disruption stemming from that change, the owner can use the waiver or release as defenses [5].

**REVIEW OF THE CAUSATION OF A LOP CLAIM**

AACE International Recommended Practice No. 25R-03 [1, p.7] states that:

… the contractor must be able to show a cause and effect relationship between the event and the impact to labor productivity in order to recover damages (i.e., costs and/or time). However, the recovery damages are not limited to direct costs. They may also include ripple damages or indirect costs to the extent that a cause and effect relationship can be established between the downstream effects and the originating event.

The exercise to establish the cause and effect relationship for a LOP claim usually involves a careful and thorough review of project documents and records. To obtain and clarify the details of project events, interviews with project personnel are usually necessary. The demonstration of the events or circumstances and their effects are essential and adequate supporting documents such as excerpts from the contract, change directives, meeting minutes, relevant correspondence, and filed reports can play an important role in the LOP claim substantiation.

Professionals suggest performing the following steps to help establish the causation for a LOP claim [6]:

- **A Schedule Analysis**—Delay and disruption are different, and one is not necessarily the cause or effect of the other. Sometimes delay and disruptions are related. Delay could be a reflection of the effect of LOP, and changes in response to delay events, such as re-sequence, use of overtime and/or shift work, and increase of craft labor staffing, could further make the productivity decline. Therefore, proof of construction delays may also help explain the impacts beyond the contractor’s control, and the resulted LOP.

- **Impact tracking on an activity or crew, and its downstream effects**—Contemporaneously tracking impacts on an activity or crew would help explain the LOP experienced on that activity or crew. Sometimes, a time and motion study can be used to document the LOP for various reasons, including added steps, additional travel time, rework, and additional material delivery time, etc. Even though such a study may only be performed on a small percentage of the total scope of work, it could provide examples to demonstrate the causation.

- **Demonstration of changes on work conditions/environments**—Changes on work conditions/environment can result in differences in the way work was actually performed compared to the anticipated conditions. When the conditions that could not be reasonably anticipated, including stop-and-go operations, out-of-sequence work, loss in learning
curve, excessive staffing fluctuations, and acceleration, are frequently observed on the project and documented contemporaneously, the causation for a LOP claim can be more plausible.

- A graphical illustration of the factual story—*A picture is worth a thousand words.* A properly prepared graphics would help the owner, or the triers of the fact understand the causation, if it existed. Sometimes, the causation between the declined productivity and the impact events can be demonstrated graphically using a time scaled chart plotting the productivity and the occurrence of impact events; and sometimes, a chart showing the relationship between impacts by location and corresponding productivity can also be used in causation analysis.

- A cause-and-effect matrix or diagram, which can help demonstrate the linkage from the root causes, immediate effects, downstream effects, to the resulted LOP.

In addition, In *Centex Bateson Construction Co.* [3], the VACBA suggests that causation could be established by demonstrating that “there were no other reasons for a loss of productivity for which the Government is not responsible.” If the contractor successfully eliminated all other causes as possible contributors to the LOP on the project, the causation for a LOP claim can then be indirectly demonstrated.

Though performing the above exercises would not guarantee the success of a LOP claim, inadequate causation analysis can cause its failure. In *Dawson Construction CO.* [4], the contractor used personal observations from employees of the contractors and subcontractors to prove the government’s changes had caused a labor inefficiency. However, the VACBA held that the contractor’s testimony was not sufficient to establish the causation. In *Advanced Engineering & Planning Corporation, Inc.* [2], the Armed Services Board of Contract Appeals (ASBCA) denied the contractor’s LOP claim because of not sufficiently demonstrating causation by pointing out the contractor’s failure to use a resource-loaded CPM schedule as required by the contract, which stated:

*In this connection, we have found, had it [contractor] submitted and updated a “resource loaded” CPM as required by Standard Item No. 009-60, AEP Co. could have tracked disruptive impact through the schedule …*

Another takeaway from *Dawson Construction CO.* is that good record keeping is essential to a LOP claim. On the other hand, smart owners would not completely leave contemporaneous record keeping to the contractor. Owners usually have a project management and inspection team whose contemporaneous records can play a very important role in possible construction disputes.

Therefore, to defend against a LOP claim, the owner should review the contractor’s causation analysis and supporting documentation to determine whether such a cause and effect relationship exists between the asserted causes and the LOP. If an affirmative analysis establishes the cause and effect relationship between the LOP and factors unattributable to the owner, it can be a good defense for the owner.

**REVIEW OF THE QUANTIFICATION OF A LOP CLAIM**

AACE International Recommended Practice No. 25R-03 ranks the LOP quantification methods from most to least reliable based on “professional acceptance, case law, and construction claims literature.” [1, p.3] AACE groups the LOP quantification methods in five different categories. The following list is based on AACE’s order of preference. [1, p.8]

- Project specific studies
- Project comparison studies
- Specialty industry studies
- General industry studies
- Cost based methods

Concerning project specific studies, contemporaneous project records are relied upon to quantify the LOP. The Measured Mile method has been considered the most widely accepted method by AACE and the Society of Construction Law (SCL) [8]. The Measured Mile method compares project specific productivity between the impacted and unimpacted (or lightly impacted) areas/periods. Despite its popularity, reliability, and validity of the Measured Mile method relies on the data, similarity of the work in comparison, the establishment of causal nexus. For an improperly prepared measured mile analysis, the following can be used by the owner to defend against the contractor’s LOP claim in addition to the critiques on the entitlement and causation:

- deficient data and calculation
- inappropriate productivity measurement
- dissimilar work
- failure to exclude the LOP for self-inflicted impacts

Project specific studies also include work sampling methods, and their reliability depends on the representativeness of the samples and the implementation of the sampling process, where should be closely examined. Another project specific study is the earned value analysis, which relies on the budgeted information. The budget used to generate the earned value metrics should be carefully reviewed and verified for reasonableness.

For project comparison studies, the productivity comparison is relaxed to less similar work on the same project or similar work from a different project. The weaknesses and difficulties in proving acceptable similarity and causation can be used by the owner for its claim defense. Industry studies relies on the statistics of historical project information or survey, and the owner needs to understand that the source data for industry studies is not always known, and the industry studies bear no cause and effect relationship with the project in question.

AACE ranks the cost-based methods, including “Total Unit Cost,” “Modified Total Cost” and “Total Cost,” to be among the least preferred methods. The following aspects are where the owner should examine upon receiving a LOP claim based on a cost-based method:

- whether a more preferred method is practical
- whether the contractor’s bid estimate is reasonable
- whether the contractor’s actual cost is reasonable
- whether the contractor has properly removed self-inflicted impacts from the LOP claim

**CONCLUSION**

LOP is one of the most contentious areas in construction claims. Defending against a LOP claim can be a very challenging task, especially for inexperienced owners. For a LOP claim that is questionable, the owner can defend itself against it from the perspectives of entitlement, causation, and quantification.
REFERENCES


ABOUT THE AUTHORS

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Xuyang Liu is with the PetroChina International Company Limited. He can be contacted by sending email to: bond81@aliyun.com
On February 28th, 19 Hawaii Section members and friends assembled at the office of Rider Levett Bucknall to listen to a webinar presentation on AACE Technical Guidance and Certifications. Presentations were made by Christian Heller, Director of Technical Guidance at AACE International Headquarters, and Penny Whooley, Manager of Certification & Membership at AACE International Headquarters. Mr. Heller provided an overview of AACE technical resources through AACE’s official website and Ms. Whooley went through the AACE’s eight certifications and outlined eligibility requirements and examination objectives.

Hawaii Section members attended a webinar meeting in February. Shown above from left to right are Richard Koong, Amarjit Singh, Steven Hu, PSP, Justin Kirschner, CEP PSP, Jeanette Roberts, Landon Loitz, Chris Kanae, Joe Uno, Alan Davison, Yashaira Fletcher, Will Sparks, PSP.
**INDIA SECTION**

The India Section started a webinar series during this COVID-19 clampdown to engage the students. This is a major outreach by India Section to take AACE to the students and young professionals.

**TORONTO SECTION**

In collaboration with Ryerson University, the Toronto Section conducted a series of technical guest presentations for the civil engineering undergraduate class attending the winter semester project management course. The guest speakers from the section’s board provided additional insight and showcased practical examples from their real life experiences on some of the topics that were included in the project management course curriculum, including: estimating, construction contracts and project delivery systems.

On January 30, the Toronto Section conducted its first technical event of the year 2020. Guest Speaker Andy Kervell, from Arup, discussed how BIM process and technology, when used properly, can optimize project outcomes for all stakeholders. The presentation featured a case study from a large scale international infrastructure project, where BIM was implemented. The event took place at the Casa Loma campus of George Brown College in Toronto.

Toronto Section board member Ghaith Al-Hiyari, CCP, is shown above at the podium presenting a brief introduction about AACE International and the Toronto Section activities at the beginning of one of the guest presentations at Ryerson University.

At the Toronto Section’s January meeting, guest speaker Andy Kervell, from Arup, is shown presenting the topic: “Using BIM to Optimize Project Outcomes.”
SUBMITTING SECTION NEWS: We invite all sections to submit news and updates to be included in the International Bulletin section of each Source issue. Please submit any and all text as a part of the e-mail or as a Microsoft Word file attachment. Please submit any photos as individual attachments in JPG formats. Do not embed photos in Microsoft Word files. For photos to be used, we require either large original files or print size photos at 300 dpi (dots per inch). For photos to be published, they must be in focus, of print quality, and of sufficient resolution.

Please include the names and titles of each person shown in any photos. Please list names from left to right or refer to those shown as being above left or right. For group photos please list names from left to right, beginning with the front row and working to the back. All submissions should be e-mailed to editor@aacei.org. Please use the official name of the Section as approved by the AACE Board when the Section’s charter was approved. Within 2 to 3 business days of submitting a “Section News” item, you should receive a return confirmation e-mail that your submission was received at AACE headquarters.

MISSING SUBMISSIONS: Generally, all submissions received in the above scheduled times will be published in the listed issue. Items are not held because of space restrictions. There is no waiting list and no preference is given to one Section over another. Questions about incomplete submissions or failure to follow these submission guidelines could delay publication. Text will be published without submitted photos if the photo does not meet the listed quality requirements. AACE reserves the right to edit all submissions and/or to refuse to publish any submissions determined by the Managing Editor or the Art Director to not meet the standards of the journal. Any appeals of these decisions will have a final decision determined by the Executive Director.

If a submission is not included in the designated issue, please e-mail or call the Managing Editor to ensure that it has not been lost or misplaced. Call or e-mail if you do not receive a confirmation e-mail within 3 business days of submission.

Source has a submission deadline of two months in advance of the issue date.

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Any Section representative with questions is advised to e-mail editor@aacei.org or call the Managing Editor during regular business hours, 9 a.m. to 5 p.m. Eastern Standard Time, Monday-Friday, except holidays and special closings.

Above: Members and guests of the Toronto Section are shown attending the technical event on January 30.

At right: Toronto Section President, Behrad Kiafar CEP, is shown presenting the Cost Engineering Journal 2019 combined print issue to the guest speaker, Andy Kervell, as a token of appreciation. Mr. Kervell, from Arup, discussed how BIM process and technology, when used properly, can optimize project outcomes for all stakeholders.
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What to Submit and How to Submit Upcoming Events

The Upcoming Events calendar is primarily for AACE International events and for activities of AACE Sections that are being marketed to the AACE membership.

Regular monthly dinner meetings of sections generally do not meet the requirement of being for all our membership. These meetings should be promoted and posted on the individual section websites.

Regional conferences and special section events, to which registration has been opened to the public and AACE members at large, can be submitted for publication in Source magazine. Listing must be received 60 days prior to the issue date of the magazine you want the listing to be published. Issues of Source magazine post the first of the month in February, April, June, August, October, and December.

All submissions must list the date and time of the scheduled event, a brief description of who the speaker will be or what activities are planned. Always include the name of the section board member submitting the listing, as well as a contact email and phone number if the publications staff has questions, needs more information, or needs to clarify anything in the submission.

When no AACE events and/or AACE Section Events are submitted, the space will be opened for other associations and entities that are sponsoring activities that may be of interest to the AACE membership.

AACE publications staff will not troll section websites looking for potential listings, a section board member needs to be assigned to forward calendar listings to editor@aacei.org. AACE Sections are encouraged to also submit writeups and photos after hosting monthly dinner meetings or other section activities for publication in the Section News/Section Bulletin pages of each Source magazine.
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SKILLS AND KNOWLEDGE OF COST ENGINEERING, 6TH EDITION
Dr. Makarand Hastak, PE CCP, Editor, 2015
This publication provides information on a wide range of cost engineering subjects and will prove to be a valuable resource to any individual seeking professional growth or pursuing an AACE International certification. This publication offers six sections comprising 34 chapters of content on topics such as cost estimating, project planning, value engineering, and strategic management, to name a few.

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CCP CERTIFICATION STUDY GUIDE, 2ND EDITION
Dr. Makarand Hastak, PE CCP, Editor, 2016
The AACE International CCP Certification Study Guide, 2nd Edition is designed as a companion workbook to the Skills and Knowledge of Cost Engineering, 6th Edition (S&K 6). In conjunction with S&K 6, this study guide will assist individuals in their preparation for the CCP Certification examination and develop the general knowledge a cost engineering professional is expected to have. This study guide offers insight into the key topics found in each chapter of S&K 6 and provides practice questions and exercises to develop knowledge in individual areas.

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PSP CERTIFICATION STUDY GUIDE, 2ND EDITION
AACE Education Board, 2018-2019
This certification study guide aids professionals wishing to achieve AACE International’s specialty certification in Planning and Scheduling. Second, the PSP Certification Study Guide summarizes various topics considered central to the planning and scheduling professional, as outlined in AACE International Recommended Practice 14R-90, Responsibility and Required Skills for a Planning and Scheduling Professional, along with the current edition of the Skills and Knowledge of Cost Engineering.

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EVP CERTIFICATION STUDY GUIDE, 3RD EDITION
Sean T. Regan, CCP CEP FAACE - Editor, 2015
This study guide is intended to assist you in your study and review of the overall topics as one step toward successful Earned Value Professional certification. The outline provides a listing of the terms you should know & topics for which you should have a good understanding of how to apply the concepts to solve problems. Each chapter also contains sample exercises, which test your knowledge of that chapter’s concepts.

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THE TOTAL COST MANAGEMENT FRAMEWORK, 2ND EDITION
H. Lance Stephenson, CCP FAACE, Editor, 2015
The TCM Framework is a structured, annotated process map that explains each practice area of the cost engineering field in the context of its relationship to the other practice areas including allied professions. It provides a process for applying the skills and knowledge of cost engineering.

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COST ENGINEERS’ NOTEBOOK
This CD-ROM is an important reference for any project or cost professional. It includes data and procedures related to basic skills and knowledge that all cost engineers should possess, extensive material on capital and operating cost estimation, and papers in four subject areas: cost control, planning and scheduling, project management, and economic analysis and business planning.

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AACE INTERNATIONAL RECOMMENDED PRACTICES
Cost Engineering Terminology; Cost Estimate Classification System; Estimate Preparation Costs in the Process Industries; Project Code of Accounts; Required Skills and Knowledge of a Cost Engineer; Roles and Duties of a Planning and Scheduling Engineer; Profitability Methods; plus many more.

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The Art of Decoding Manipulated Schedules for Forensic Schedule Analysis
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BY SAMUEL STEIMAN, PE AND DR. DAVID HULETT, FAACE

Hot Tubbing Expert Witnesses — Does It Work?
FIRST PRESENTED AT THE 2019 CONFERENCE AND EXPO AS CDR-3228
BY JAMES G. ZACK JR., CFCC FAACE HON.LIFE

Articles announced for publication in the COST ENGINEERING Journal are subject to change.

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2020* VIRTUAL CONFERENCE & EXPO

DIFFERENT FORMAT
SAME EXTENSIVE CONTENT

With the current restrictions due to the COVID-19 pandemic, AACE’s 2020 Conference & Expo will be different, but still awesome! It will be virtual, but we’re bringing you all of the presentations. No travel costs or hassles like lost luggage. You’ll be able to participate in technical and networking sessions earning CEUs - and spend time in your office with clients or with your family each day. Some of AACE’s top leaders will be presenting at the virtual conference. There will be optional networking events and continuing education seminars. Register and get the best seat in the house!

18 LIVE PRESENTATIONS WITH Q&A
JUNE 28 - JULY 3
3 SESSIONS/DAY, 11AM - 3PM EDT
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+ ADDITIONAL RECORDED SESSIONS
+ OPTIONAL SOCIAL TIME
+ NETWORKING WITH VENDORS
+ OPTIONAL SEMINARS
WHAT IS IT?
This is a virtual conference as a result of the previously scheduled 2020 Conference & Expo being held as an in-person event in Chicago. AACE International is excited to be headed to Chicago. However, we’re not going to “Sweet Home, Chicago” until 2023. For the 2020* Virtual Conference & Expo, you’ll be safe in your home or office.

WHAT SHOULD I EXPECT?
The 2020* Virtual Conference & Expo will take place over six days with 3 live sessions each day: June 28-July 3. Each live session will allow for Q&A with the presenters. You will also get recorded sessions for all of the remaining technical presentations. (The live session time would be the equivalent to what you’d be able to attend at an in-person event. The recorded sessions at a live-Conference & Expo cost additional money, but we’re including them with the 2020* Virtual Conference & Expo.)

There is a virtual exhibit hall so you can learn what great products and services our exhibiting firms have to offer. There will be social events - some topical in nature so that you can discuss work-related issues, and some where it will just be for fun. Technical Committee and SIG meetings will be held as well as a Rising Professionals’ Committee social hour.

You get 1.8 CEUs (continuing education units) for participating in the live portion plus more for each recorded session you complete! You get all of the technical papers. You get all of the recorded sessions, including the recordings of the live sessions, in your library to access for years down the road.

The live sessions take place at the same time each day: (all times are listed in Eastern US):
• 11:00 AM - 12:00 PM
• 12:30 PM - 1:30 PM
• 2:00 PM - 3:00 PM

Days for the live sessions:
• Sunday, June 28
• Monday, June 29
• Tuesday, June 30
• Wednesday, July 1
• Thursday, July 2
• Friday, July 3
SESSION 1: 11:00 AM - 12:00 PM
(ADV-3457) COVID-19 and the New Normal
Presenters: James G. Zack, Jr. CFCC FAACE Hon. Life; Anthony M. Bazzini; John P. Orr, PSP FAACE; Greg M. Hall, PSP; Daniel P. Gilmour, PSP

The COVID-19 pandemic has significantly impacted the AACE community, cost engineering industry, and global marketplace over the course of early 2020. In many cases, the coronavirus has fundamentally changed the way day-to-day business is conducted. This panel discussion will be a wide-ranging conversation with industry leaders on the effects of the COVID-19 crisis and its future impact on the industry. The expert panel carries seasoned experience in the engineering, oil and gas, and construction industries and represents the perspectives of owners, consultants, and contractors. Discussion topics for the panel include the virtual workplace, force majeure and contract language, categories of operational and productivity impacts, best practices for documenting COVID-19 related delays, and organizational improvements brought on by the pandemic. Finally, the panel will field questions from the audience.

SESSION 2: 12:30 PM - 1:30 PM
(EST-3419) Estimating as it Pertains to Risk Management
Presenter: Shoshanna Fraizinger, CCP

The outputs of estimating are typically a primary input for business planning, cost and risk analysis, management decisions, and project cost and schedule control processes. All these aspects of corporate strategy and project planning are bounded, or guided by, an organization’s risk appetite.

Estimating is fundamental to the ‘Assess’ & ‘Treat’ steps of risk management, as defined in AACE’s Total Cost Management Framework (TCM) and Skills and Knowledge of Cost Engineering 6th Edition (S&K6). Estimator skill is required to determine the cost impact of the risk (assess), and the cost to implement the plan to address the risk (treat), respectively. The cost impact of the risk contributes to the amount of contingency required. However, there are several facets of strategic planning wherein the cost estimating process can introduce, assess, or mitigate risk.

This document addresses the topic of estimating as it pertains to risk and the various facets of project risk, which can be affected by the cost estimate and the methods by which the estimates are developed. This paper is aimed at the junior to intermediate cost engineering professional and provides a single source for AACE references on this subject.

SESSION 3: 2:00 PM - 3:00 PM
(CDR-3539) The Law of Forensic Schedule Delay Analysis
Presenters: John C. Livengood, Esq. CCP CFCC PSP FAACE; Haley M. Derauf

Forensic schedule analysis stands equally on three supporting pillars: (1) technical analysis, (2) professional expertise, and (3) legal precedent. AACE’s various recommended practices and articles on forensic schedule analysis provide a firm basis for technical analysis for experts to evaluate schedule delays and prepare opinions. Nevertheless, AACE’s RPs specifically disavow knowledge of the third pillar: legal precedent. Even so, all practitioners of forensic schedule analysis remain keenly aware of this third pillar and its influence on their work. Furthermore, these experts often refer to and rely on legal precedence in finalizing their work. This paper will consider the extent that experts should understand legal precedent as well as examine the law as it concerns the four major families of forensic schedule analysis methods identified in AACE Recommended Practice No. 29R-03 Forensic Schedule Analysis: As-Planned v. As-Built; Contemporary Period Analysis (Windows); Time Impact Analysis; and Collapsed As-Built.
SESSION 1: 11:00 AM - 12:00 PM
(CDR-3552) Suspend Work - “Remain on Standby” - 3 Key Words
Presenter: James G. Zack, Jr. CFCC FAACE Hon. Life
The contract has been awarded and notice to proceed issued. Work has started. The owner issues a suspension of work directive and the contractor shuts down all or a designated portion of the work awaiting the owner’s return to work order. The contractor believes they are entitled to recover all delay and all time related delay damages. Is the contractor right? The owner is liable for the delay damages, right? As Max E. Greenberg commented in 1954 - “It ain’t necessarily so!” This paper examines why owners should have a Suspension of Work clause in contracts and how these clauses work. It identifies what damages are typically owed when an owner suspends all or part of the work and outlines some typical limitations of suspension damages found in many contracts. Additionally, the paper discusses five key court cases decided between 1996 and 2015 that establish the key requirements necessary to collect damages arising from a suspension of work directive. Finally, the paper offers recommendations on what actions contractors should take to protect their recovery of such damages and why these actions may help owners resolve suspension of work claims in the field rather than the court.

SESSION 2: 12:30 PM - 1:30 PM
(IND-0000) Unlocking Next-Generation Planning Capabilities Through AI and Advanced Work Planning
Presenter: Paul Self
Advanced Work Packaging (AWP) is gaining considerable attention within the project management arena, and for good reason. Within a very short time, AWP has generated some impressive, hard-to-argue ROI metrics. So, how big a leap is it to move from a traditional “plan-from-start-to-finish” approach to the somewhat counterintuitive one of “plan backwards from the end goal”? The reality is, not as big as you may think, and with a little help from artificial intelligence (AI), that gap can be even smaller. In this session, you will learn:
• Why many of the planning concepts embedded within an Advanced Work Packaging framework are enhancements to traditional planning, not radical changes
• The value of an AWP-driven top-down approach and how AI can inform our development of the Path of Construction and other AWP artifacts
• How pragmatic applications of AI (a.k.a. “boring AI”) can help us collaborate and improve the plans upon which our projects rely

SESSION 3: 2:00 PM - 3:00 PM
(CSC-3429) Top Ten Successful Approaches to On-Time Completion
Presenters: Glen R. Palmer, CFCC PSP FAACE; Christopher W. Carson, CEP DRMP PSP FAACE
Many projects today fail when it comes to completing on the planned final completion date. This failure is generally due to a number of issues related to the quality of the analysis of delays, owner commitments, and contractor performance problems. A deep-dive technical analysis, supported by lessons-learned and deep experience in problem resolution and mitigation of delays, greatly improves the opportunities for achieving on-time completion. Unfortunately, this deep dive technical analysis is often not performed, whether it is due to inexperience, lack of competence, limited time for analysis, or weak analysis. The use of a system to provide completion prediction and analysis streamlines the effort and ensures that these ten approaches are consistently followed for a successful completion. In this paper, the authors continue their series of “Top Ten” issues and will give you their top ten approaches for enhancing a project’s chances of meeting this planned date. The authors of this paper are widely experienced in planning and scheduling complex projects, dispute resolution analyses, project controls, project management and have testified as experts in forensic and project schedule analysis.
SESSION 1: 11:00 AM - 12:00 PM
(CSC-3546) Project Controls Reporting: Having the Message Heard
Presenters: Christopher P. Caddell, PE CCP DRMP; Charlene Sue de Beer; Nataliya Rutylo

Project controls reports during the life-cycle of a project are critical to helping the management team understand how the project is performing from a productivity, progress, schedule, and cost perspective. These reports provide not only information about performance to date but forecast the likely outcomes at the completion of work. However, all too often the critical messages in project controls reports are not heard or even worse ignored, negating the benefit they provide in helping the team manage the project to a more successful outcome. These reports often lack the necessary attributes to ensure the message is heard by the management team such that they act on it. Best practice project controls reporting depends on having the right content, issued in a timely manner, formatted well, with the issues identified and recommendations provided where possible. A well-structured, well delivered project controls report is more likely to resonate with the management team and have the impact it should on their decision making.

SESSION 2: 12:30 PM - 1:30 PM
(EST-3342) (Presentation Only) Overview - Planning the Development of the Estimate
Presenters: Michael W. Smith, II; Dave Kyle, CCP CEP

This session outlines the requirements for a well defined estimate plan. The early development of this document is crucial for a successful estimating process. The proper preparation and presentation of this key document greatly increases the likelihood of obtaining the desired results by all stakeholders. The Estimate Plan should identify key stakeholders, expectations, standards, scope definition, schedule, individual responsibilities, and expected methodologies. The plan provides opportunity to clarify expectations of stakeholders, allows time for proper preparation of estimate inputs, and generally results in less rework and/or unacceptable deliverables. This presentation is based on 105R-19 (Owner's Estimate Requirements Document - as Applied in Engineering, Procurement, and Construction for the Process Industries); 36R-08 (Development of Cost Estimate Plans - as Applied in Engineering, Procurement, and Construction for the Process Industries); and 35R-09 (Development of Cost Estimate Plans - as Applied for the Building and General Construction Industries).

SESSION 3: 2:00 PM - 3:00 PM
(IND-3574) Unlock Project Performance: Connecting Scope, Cost, Schedule, Model and AI
Presenter: Jen Coyle

The relationship between scope, cost, and schedule has been called the iron triangle of project management, yet, the construction industry continues to struggle managing these basic fundamentals. In this session, you’ll learn what Oracle Construction and Engineering is doing to solve this industry problem by connecting Oracle Primavera P6, Oracle Primavera Cloud, Oracle Aconex Connected Cost, Oracle Aconex Models and applying Artificial Intelligence.
SESSION 1: 11:00 AM - 12:00 PM  
(EST-3422) (Presentation Only) Understanding Expected Estimate Accuracy  
Presenter: Larry R. Dysert, CCP CEP DRMP FAACE Hon. Life  
This presentation will provide an overview of the AACE International Recommended Practice on “Understanding Expected Estimate Accuracy.” It is intended that the RP will serve as the paper. The presentation will discuss the identification of an estimate as a range of potential values, identify the typical shape of the probability distribution associated with estimate ranges, describe estimate contingency, and identify the critical elements required to convey information about expected estimate accuracy to stakeholders.

SESSION 2: 12:30 PM - 1:30 PM  
(EVM-3456) You Can’t Get There From Here. Real World Application of RP 80R-13: Estimate at Completion (EAC)  
Presenters: James E. Krebs, PE CCP FAACE; Brennan P. Cagney, CCP  
It is all too common for teams on projects experiencing poor earned value performance, early in the project, to report a forecast on target due to improvements expected from mitigation efforts. The inability to recover may happen sooner than personal experience may indicate, due to the compounding effect of poor performance. Utilizing Recommended Practice 80R-13, Estimate at Completion (EAC), and actual project data, this paper explores that timing and the ability to determine when the project goals are no longer achievable. Recommended Practice 80R-13 shows several accepted formula to determine EAC. Using actual project data to calculate the cost performance index (CPI) and to complete performance index (TCPI) at various points in time will yield a comparison of varied project outcomes. Understanding CPI and TCPI early in the project can help determine if a project can, “get there from here.”

SESSION 3: 2:00 PM - 3:00 PM  
(OWN-3495) Deploying An Assurance Framework to Identify and Repair Distressed Projects  
Presenter: Joshua P. Rowan, CCP  
Large capital projects are by their nature complex. Throughout their life-cycle, events and risks will occur that, individually or collectively, have the potential to derail them. In response to this, many capital-intensive owner organizations have developed project stage-gate systems as a part of corporate governance. These systems are very useful for project shaping as well as front end engineering and design (FEED) but less helpful in the execution stage when the majority of capital funds will be expended. Traditional audits focus on adherence to approved processes and procedures which is necessary but not sufficient to guarantee a successful project outcome. The field of project assurance developed in response to these shortcomings and is now mandated by many governments, insurers, and financing entities. Project assurance, as practiced today, is additive to a stage-gate process and critical for projects after the organization’s final investment decision. Although each assurance review is unique, a common framework is possible if one considers the typical capital project failure elements. With this framework, an organization is able to more readily identify and repair distressed projects.
THURSDAY, JULY 2

SESSION 1: 11:00 AM - 12:00 PM
(PM-3586) (Presentation Only) Palms Up – A Servant Leadership approach for Project Management and Support

Presenter: Richard C. Plumery, EVP

This presentation will address how to apply a serve, support and protect approach at every level of the organization including leading and supporting projects and programs. This will tell the stories of the presenter’s life journey.

These experiences included:
• Conducting a local press conference for a new voice-controlled computer, which a fledgling CNN picked up a broadcast worldwide in the early 90’s.
• Starting a tactical supply company with two of the original SEAL Team Six members a month before 9/11.
• Starting a nationally recognized sports performance coaching center which coached some of the best athletes of our time.

SESSION 2: 12:30 PM - 1:30 PM
(PS-3427) Successful A/E Design Scheduling

Presenters: Christopher W. Carson, CEP DRMP PSP FAACE; Aaron Fletcher, PSP; Noah A. Jones, PSP; Leo Carson-Penalosa

Delays often originate within the Architectural and Engineering (A/E) design effort, and schedules developed to plan, organize, and monitor design tend to be high-level and not very useful. When the schedule does not provide the right methodology and details, its value for monitoring is limited. Sometimes there is even a failure to recognize the difference between consumed hours and progress and without the right schedule, performance can suffer without being recognized. A well designed and managed A/E design schedule promotes quick and accurate updates, supports proactive analysis to minimize delays and claims, and aligns with other project controls functions to enable integrated cost-schedule-risk design scheduling.

The authors, working for firms that provide engineering design services, have experience in working with designers to develop the right level of detail for the design portion of a project, to establish a stage-gate approach to design milestones so they can align with cost, schedule, and risk monitoring, and so performance can be accurately measured. The authors bring a wide range of perspectives, from Process Engineering design scheduling, to Design-Build A/E scheduling, to CM Agency A/E monitoring, to CM at Risk A/E support scheduling. This paper will offer a proven approach that demonstrates guidelines for schedule design, development, monitoring, analysis, updating, and reporting, as well as set the benchmark to facilitate mitigation when necessary.

SESSION 3: 2:00 PM - 3:00 PM
(PS-3584) (Presentation Only) Gap Analysis: Recommended Practices vs. TCM Framework

Presenters: Jessica Colbert, PSP; John P. Orr, PSP FAACE

Over the last twelve months, the Planning & Scheduling subcommittee, led by its RP Coordinator, Jessica Colbert, has performed a gap analysis between the TCM Framework Section 7.2 Schedule Planning and Development and the AACE Recommended Practices (RPs) that currently reference that chapter and its sub-chapters. The AACE Technical Board has requested that all subcommittees prepare a similar gap analysis, an evaluation which has two ultimate goals: (1) to ensure that all areas of the TCM Framework are supported by and expanded upon with published, peer-reviewed recommended practices, and (2) to ensure that existing published recommended practices are coordinated and aligned with each other when they address the same subsection within the TCM Framework.
SESSION 1: 11:00 AM - 12:00 PM  
(RISK-3540) Conditional Branching Models How Project Managers Typically React to Schedule Overruns

Presenters: Dr. David T. Hulett, FAACE; Michael Trumper

Project owners, project managers can be counted on to react to prospective schedule overruns by developing a “recovery schedule” that adds resources to try to make up time. However, analysts using Monte Carlo simulation typically model the current plan as if the manager will not react even if the schedule is jeopardized. This is not realistic.

When simulating a project schedule, the analyst needs to represent the manager’s response to delays as if there is still time to recover the schedule. Conditional branching can represent the project manager’s response to a schedule event such as the detailed engineering’s finishing later than anticipated by adding resources to shorten the execution phase to claw back the impending schedule overrun.

During a Monte Carlo simulation conditional branching can test each iteration for missing a key finish date. In the case study, a conditional branch is modeled with 2 possible plans. “Plan A” is the original fabrication schedule, and “Plan B” is a recovery fabrication schedule. The paper describes the logic simulating having a Plan B conditional branching and some results that may occur.

SESSION 2: 12:30 PM - 1:30 PM  
(TCM-3503) Strategic Portfolio Management: Funding and Finance Methodologies

Presenters: H. Lance Stephenson, CCP FAACE; Robert Gerber

In regards to strategic portfolio management and the project delivery world, most organizations have limited financial resources, making it increasingly difficult to support the execution of its capital portfolio program. With this said, the authors of this paper provide some recommendations for the purpose of defining and implementing a methodology for supporting, and therefore improving, portfolio funding & financial development, implementation and administration. This paper further assists in providing the audience the necessary provisions for ensuring the effective and efficient use capital dollars by identifying opportunities for shared savings and improving cashflow utilization. This paper will provide readers with the following:

- Implementation of a funding & financial management approach that will assist in funding optimization and utilization of the overall portfolio of projects; continuing to provide a value-add to the organization and improve competitive advantage through short- and long-term cash flow management.
- An understanding of funding categorization and prioritization coupled with balancing commitments, spending and stewardship. This includes introducing techniques for funding long-term and high priority commitments while matching the needs for short-term and routine projects.
- A relevant portfolio hierarchy and process designed to support both top down funding and bottom up budgeting and contingency management for portfolios, programs and projects.

SESSION 3: 2:00 PM - 3:00 PM  
(TCMA-3502) Benchmarking for Competitive Advantage

Presenters: H. Lance Stephenson, CCP FAACE; Peter R. Bredehoeft, Jr. CEP FAACE

To improve and be competitive in terms of profitability (often measured by return on investment), companies must manage their operations and capital project delivery systems to drive improved cost and schedule effectiveness. This effort requires companies to improve their understanding of cost, schedule, risk drivers, and behaviors through historical data collection, analysis, and benchmarking. Subsequently, benchmarking will result in a more competitive project system.
While benchmarking for competitive advantage is usually seen as a strategic endeavor with respect to its overall capital or project system, benchmarking takes knowledge and understanding of both external and internal project system practices and performance to drive continuous improvement. The business uses benchmarking to improve its overall competitive position in capital project management with respect to organizational strategy, process management, tools development, and behaviors. Benchmarking also touches on or relates to other analytic processes at a project level. These relationships include project planning, performance estimate validation, and forensic analysis for achieving improved business objectives.

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A.1 Project Controls from the Owner’s Perspective
Instructor: Steve Cabano

A live, instructor-led seminar is being held virtually June 22-24. The course will run 11:00 AM - 3:25 PM EDT each day with a 40 minute break for lunch at 12:10 PM EDT.

DESCRIPTION & LEARNING OBJECTIVES:
This seminar will cover Project Controls Industry “Best Practices” (approaches, methods, techniques and tools) suitable to an owner organization’s project portfolio and specific projects. Topical coverage will include: Project Controls Perspective (relative to Owner’s role); Project Controls Process; Roles and Responsibilities for Project Controls (Project Manager/Engineer, Owner’s Project Team, Owner’s Project Controls Team/Representatives, Contractors); Planning and Scheduling (Development and Baselining); Cost Estimate/Budget (Development and Baselining); Cost and Risk Analysis and Contingency (Development and Management); Progress and Productivity Measurement; Cost and Schedule Management; Project Controls Reporting; Change Management

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B.1 Advanced Project Controls from the Owner’s Perspective
Instructor: Paul Williams

A live, instructor-led seminar is being held virtually June 25-27. The course will run 11:00 AM - 3:25 PM EDT each day with a 40 minute break for lunch at 12:10 PM EDT.

DESCRIPTION & LEARNING OBJECTIVES:
This session will build off the basic concepts of “Project Control from an Owner’s Perspective.” Advanced Project Control issues will be addressed including Cost and Schedule Risk Analysis, Engineering and Construction Productivity Evaluation and Influences, Schedule Analysis and recover options, Reporting and Contractor Oversight. Discussion will be conducted on project control requirements and language required in owner contract documents. Facilitators will also demonstrate some of the more common software tools for scheduling, risk analysis, cost estimating, etc. Participants will be tasked with various workshop exercises that will challenge their skills in project control and project recovery techniques. Attendees will gain a hands on application of: Advanced methods for cost risk analysis; Advanced methods of schedule risk analysis; Execution Productivity Analysis Tools and Techniques; Planning/Schedule Analysis Techniques; Effective reporting methods/tools; Advanced recovery techniques; Standard Project Control Tools

You get 1.1 CEUs (continuing education units) for participating.

C.1 Certified Cost Professional (CCP) Certification Exam Prep
Instructors: Ken Cressman, CCP EVP; Cokey Mills, CCP

A live, instructor-led seminar is being held virtually July 7-10. The course will run 10:00 AM - 2:30 PM EDT each day with a 30 minute break for lunch at 12:00 PM EDT.

DESCRIPTION & LEARNING OBJECTIVES:
This course provides an overview of skills and knowledge of cost engineering. The course will cover basic concepts of estimating, planning and scheduling, cost control and forecasting, break-even analysis, and productivity analysis. Professionals who attend the review course will gain a better understanding of some of the basic concepts of cost engineering. This course is also suitable for those who plan to take the CCP certification examination as it will enable attendees to be better prepared to take the exam beyond what they could like achieve on their own. Each day’s presentation covers subjects that are tested on the CCP certification exam.

You get 1.6 CEUs (continuing education units) for participating.

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You will have the opportunity to interact with our sponsors and exhibitors. We are planning a variety of networking events that will be open to all attendees. These events will be hosted during the “off hours” so that they are not competing with the live sessions. Here is a sample of the sessions that we are planning (with the promise of more to come!):

- Networking happy hours
- AACE Awards happy hour
- Music from Giri & Uma Peters (FYI: They are Kul B. Uppal, PE CEP DRMP FAACE Hon. Life’s uber-talented grandchildren!)
- Section Leadership Ideas Exchange
- Ask Me Anything: Education
- Ask Me Anything: Certification
- Rising Professionals networking event
- Women in Project Controls networking event

More information on all of the networking events, award winners, and other activities to come!