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In this issue:

On the Cover

The Caribbean's largest power plant under construction in Trinidad and Tobago

Photo credit: Alvin F. Lindsay

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Message From the Chair

As of 1 August 2014, on becoming chair of the International Law Section, I am pleased to report on the following accomplishments: (1) record number of new members in the section; (2) created a new committee focused on foreign legal consultants certified in Florida by our section; (3) first ILS Fall Retreat in at least 10 years at the Boca Raton Resort & Club; (4) re-energized relationships with foreign bar associations with which we have written agreements, such as Sao Paulo and Barcelona bar associations; (5) most diverse representation on the Executive Council; (6) presentation of the tremendously successful Cuba Conference in Orlando; (7) planning for February 2015 annual International Litigation and Arbitration Conference (ILAC) combined with the International Business Transaction Conference (IBTC) in Miami going very well; (8) generous sponsors of the ILS continue to increase; and (9) the ILS website at www.internationallawsection.org continues to get more hits. In addition, a holiday reception/happy hour is being planned for December 2014 in Miami, and there is discussion of having a joint ILS and Orlando area Consular Corps event before the end of 2014.

I am most pleased with the recent ILS Fall Retreat. More than fifty lawyers, plus spouses and other family members, attended to accomplish the business of the section while enjoying each other's company. We had an informative and entertaining guest speaker, Irving Fourcand, director of protocol and international affairs at Miami International Airport. The Ruth's Chris Steakhouse dinner was simply splendid. Photographs of the weekend are available for viewing in this edition of the *ILQ* as well as at the ILS website.

Peter A. Quinter, Chair
GrayRobinson, P.A.

From the Editor . . .

Y. LORENZO

It is with great pleasure that we release the first of several issues of the *International Law Quarterly* for the coming year. As I begin my term as editor-in-chief, I would like to thank **Peter Quinter** for this opportunity and **Al Lindsay** for his service throughout the last several years as editor-in-chief. I would also like to thank Al for his leadership in pulling together this special focus on international arbitration construction disputes and **Mariela Malfeld** for serving as the special issue editor. Finally, this magazine would not be possible without **Omar Ibrahem's**, **Sandy Jones'** and **Susan Trainor's** continued commitment to the *ILQ*.

As I read through the articles in this issue, I know they will be of interest to the many lawyers in the International Law Section who focus their practice on construction-related disputes, a major area of international arbitration. In the coming year, we plan to explore various topics related to maintaining an international practice in addition to dedicating a special issue to the impact and growing emergence of women in the international arbitration arena. In short, we aim to produce magazines that are of interest to the lawyers of our section and beyond. Finally, if you are interested in getting published or becoming active in the publishing process of the *ILQ*, we have several opportunities available. I hope you enjoy this edition and look forward to receiving your feedback.

O. Ibrahem

S. Jones

Very sincerely,
Yara Lorenzo, Editor-in-Chief
yara.lorenzo@hoganlovells.com

Drafting the Claim Memorial in International Construction Arbitration

By Alvin F. Lindsay and Juan C. Garcia, Miami

A claim memorial is a detailed presentation of the facts and evidence that support a party's claims and defenses in arbitration. Although somewhat akin to a motion for summary judgment in U.S. civil litigation (in that they both provide and argue on the basis of evidence), claim memorials in international construction arbitrations are not submitted to achieve a summary ruling. Instead, they are intended to provide the arbitration panel all facts and evidence upon which the parties rely in advance of the final hearing. Ideally, this will both educate the arbitrators and shorten the hearing. A well-presented claim memorial is especially important in arbitrations involving international construction projects.

Given that large-scale construction projects by their nature often involve parties from different countries or regions facing complex and specialized problems for which risk mitigation and certainty are important, parties to construction projects often agree to resolve their disputes in arbitration. In fact, organizations like the American Arbitration Association (AAA) and the International Chamber of Commerce (ICC) offer specialized arbitration and dispute board rules applicable directly, if not solely, to construction. Moreover, construction arbitrations are highly factual disputes. Outcomes often depend on a few key facts, such as which party caused the critical path delay; who designed, manufactured or installed the defective equipment; or whether a task was within a party's scope of work. Construction disputes are also highly technical and often require an understanding of scientific concepts. Given the complexity of construction disputes, drafting a claim memorial can be a seemingly insurmountable task.

This article seeks to provide a roadmap for preparing and drafting a claim memorial in a complex, international construction arbitration. We first set the stage by providing a brief background on construction law, including a discussion on key players, project delivery systems and typical claims that arise in construction arbitrations. Next, we will discuss the process of gathering and identifying the key evidence. Finally, the article will discuss the process by which the evidence is used to develop a persuasive and coherent narrative.

Understanding How Complex International Projects Work

Writing an effective and persuasive claim memorial requires an understanding of the fundamentals of construction law, including the organization and structure of complex construction projects. A project delivery system is the web of often interrelated contracts that will define the key players and control all aspects of a construction project, including resources, relationships and specifications necessary to deliver the desired project. Understanding the different methods for structuring construction projects, the relationships between the key players and the legal agreements that govern these complex and interrelated relationships is an essential first step in understanding the types of claims that frequently arise in large, international construction arbitrations and how each must be addressed to the arbitration panel in a claim memorial.

The Key Players

Construction projects can involve many key players, many of which may come from different countries and legal systems. Every project begins with a developer who has a vision of a final project—whether it is a methane

Drafting the Claim Memorial, continued

plant, a solar power station or a cruise ship dock. The owner may be a consortium of one or more partners that join forces to maximize financial, technical or business synergies. They may be in the business of the final project, for example, a power producer; they may be the local governmental entity; or they simply may be large Wall Street brokerage firms. Assuming the owner is not self-funding the project, there will be separate public or private investors. But every project should have one "owner" for purposes of whatever contractual delivery method is employed.

The owner will often hire architects and engineers to consult on, if not design, the project, a prime contractor responsible for the construction phase of the project and one or more major equipment suppliers to provide components. The architects and engineers may be responsible to confirm to the owner and other financing sources that the project is being built according to plan.

The prime contractor itself can be a consortium of various other contractors that have agreed among themselves to manage and build the project, again often based on the fact that each has a certain specialty. For example, in a hydro-electric project, one may specialize in tunnels, dams and civil engineering while another consortium member may specialize in power generation technology. In any event, the prime contractor and the equipment supplier will, in turn, usually engage a number of subcontractors and sub-suppliers to perform discrete and often highly specialized portions of the work.

These agreements should carefully define each party's role and precise scope of work and be drafted as a cohesive unit that meshes together as part of the unified delivery system. Explaining the parties and their contractual roles is usually a first priority in any memorial presented to an arbitration panel or tribunal.

Types of Project Delivery System

All sophisticated projects start with a well-defined project delivery method. This is the system that will be used by the owner or developer for organizing and financing the design, procurement, construction, operations and eventual maintenance for the project through contracts with the key parties. A number of recognized project delivery methods have developed over time.

The design-bid-build method is construction's traditional and most widely used project delivery system. Under this method, an owner will engage a design professional (architect and/or engineer) to develop a complete and detailed design for the project. Once the design is complete, the owner will solicit bids from contractors. The design and construction phases proceed on separate and sequential tracks; the construction phase does not begin until the design of the project is complete. While this traditional approach allows an owner to develop accurate cost projections, disputes with the contractor questioning the feasibility of the already completed design may arise during construction.

A variation of the design-bid-build approach is the design-bid-multiprime method. Rather than contracting with a single contractor, the owner contracts separately with multiple contractors, each of which is responsible for distinct portions of the project. The design-bid-multiprime system can raise coordination issues and place more burden on the owner to manage the overall project and control for any gaps in scope. Owners may prefer the design-bid-multiprime method, however, because it avoids a general contractor's markup.

A second recognized project delivery system is known as the design-build method, where the owner contracts with a single entity that is responsible for the design and construction of the project. Unlike the design-bid-build system, the design and construction phases under the design-build method proceed on parallel tracks, and construction often begins when only a portion of the design is complete. This process increases efficiency and permits the work to be "fast tracked" by allowing construction to begin before the design is 100% complete, and it also decreases the likelihood of disputes between the designer and the contractor over specifications, given that a single entity is responsible for both stages of the project. The design-build method makes it more difficult, however, for an owner to accurately forecast expenses because construction

... continued on page 38

Controlling the Uncontrollable—Strategies to Ensure Megaproject Success

By David A. Delman

The alarming truth: 78% of megaprojects[1] end in disaster. In a 2012 study performed by Independent Project Analysis Inc., oil and gas megaprojects on average exceed budget by 33% or experience schedule delays of 30%.[2]

The explosive growth in oil and gas exploration and production in the United States is giving rise to a vast expansion in energy related infrastructure projects. For example, in December 2013, *IHS Global Insight* forecasted that over the next decade, US$1 trillion will be invested in the United States alone in oil, gas, storage and other processing and transportation facilities.[3] In light of recent instability in the Middle East and Ukraine, this forecast may be understated. Given the billions of dollars at stake, avoiding failure and securing success by deploying effective strategies to contain devastating cost increases and schedule delays will be critical to sustained global economic growth, as well as for the survival of the owners, contractors and financiers involved in megaproject development.

While the exact pathology of why individual projects succeed or fail is unique to each particular circumstance, there are clear strategies that either drive successful outcomes or end in devastating mega-wrecks. This article will survey the key drivers from project conception to completion, focusing on pre-contract decision-making stages, including scope development and project planning, best practices in contracting and project management structures and execution pitfalls that must be avoided if success is to be achieved.

Measure Twice, Cut Once

The North American proverb "measure twice, cut once" is never more apt than in megaproject development. The excitement of embarking upon a massive project instills in those involved a sense of urgency often rooted in fear that the massive financial commitments required to undertake the work will disappear and the project will be cancelled. The overwhelming desire to spend money quickly, a "use it or lose it" mentality, must be resisted because only those projects that have passed rigorous scope development and project planning have any chance of success. This process is commonly referred to as Front End Loading (FEL), which proceeds in phases: first to define the business case and economic viability of a project (FEL 1), then to far more detailed scope development (FEL 2) and finally to project planning (FEL 3).[4]

The FEL process is an industry-standard exercise undertaken by the project owner. Done thoroughly and without decisional bias, it provides disciplined planning and gated project reviews to ensure rational and informed business decision making. For all of the benefits of the FEL process, which will be examined below, it is susceptible to manipulation and self-interested distortion. In particular, extreme caution must be taken to avoid a bias of cost and schedule optimism because that will cause the FEL results to be unreliable and the decisions based thereon completely wrong. In a seven-year study of megaprojects, the Westney Consulting Group found that decision makers believed that the cost and schedule estimates upon which their approvals were based had a greater than 50% chance of not overrunning.[5] The data compiled by Westney from 2005 to 2012, however, told a completely different story, demonstrating that the probability of exceeding estimated cost or schedule

Strategies to Ensure Megaproject Success, continued

ranged from 75% to 95%.[6] Accordingly, it is essential that the FEL process, particularly phases 2 and 3, are not only independently conducted and reviewed, but the results critically examined, questioned and tested by the decision makers before a megaproject is sanctioned for investment.

FEL 2—Scope Development

Some of the critical deliverables at the FEL 2 stage include basic conceptual engineering such as, in the case of oil and gas refineries, fuel slate prioritization and technology selection.[7] For all types of facilities, identification of equipment suppliers and the cost and lead times required for delivery are of paramount importance because all industrial facilities are essentially priced from and designed around major equipment pieces. Accordingly, knowing the cost of and delivery durations for essential equipment components drives the initial schedule assessment and equipment-factored estimate, with an industry-accepted range of accuracy of +/-30% to 40%.[8]

Another essential exercise at FEL 2 is to benchmark the initial budgetary estimate for the project against industry expectations. One easy benchmarking method is to use an equipment-factored estimate, such as the *Lang Factor*, which assesses the ratio between total installed project costs to site delivered equipment costs.[9] The Lang Factor, among others like it, normalizes costs across particular facility types per installed piece of equipment and is a reasonable initial method to benchmark costs, particularly for inside battery limits work. Knowing where a proposed project measures up against industry expectations is of tremendous importance when deciding whether to move a project forward to the next assessment phase—project planning, also known as FEL 3.

FEL 3—Project Planning

More than any other pre-project execution phase, attention and considerable effort must be devoted to FEL 3, for it is at this phase that Front End Engineering Design (FEED) will be performed to produce a design package incorporating site-specific conditions and a detailed cost estimate with an industry-accepted range of accuracy of +/- 10% to 20%. Some of the essential deliverables during this phase include:

- Complete Process & Instrumentation Diagrams (P&IDs)
- Detailed Equipment Specification
- Procurement Plan
- Detailed Scope of Work (including quantities)
- Critical-Path Method (CPM), Resource-Loaded and Logic-Tied Schedule (including start-up activities)[10]

Of the deliverables identified above, getting to an agreed resource-loaded Level 3 CPM schedule is of considerable importance, for without it, the project's time for completion and development cost cannot be determined with any reasonable degree of certainty.[11] Waiting until after execution of the Engineering Procurement and Construction (EPC) contract to work out an agreed schedule, loaded with the number of payroll hours required to complete the work (i.e., resource loaded), is unwise and, more often than not, will result in disaster.[12]

An owner's opportunity to influence project execution is significantly reduced—if not outright eliminated—after the execution of the EPC contract. If the project is executed on a fixed-price basis, the owner's influence evaporates after the contract award because any input from the owner after that point will be correctly considered by the contractor to be an interference with its means, methods and techniques of project execution, often justifying more time, more money or both. Contractors often employ the very same arguments to justify cost and schedule increases in cost-reimbursable contracts to deflect liability for cost increases caused by their own actions.

All too often, development of the Level 3 schedule is delayed until after the EPC contract is executed. Many excuses are made to justify this delay, such as engineering and procurement activities not being sufficiently developed in order to prepare the schedule or increased bidding costs. If FEL phases 2 and 3 are properly adhered to, the project will have complete P&IDs, detailed equipment specifications and a procurement plan. Compensating the contractor to perform this work is money well spent. Accordingly,

... continued on page 46

Proving Lost Productivity in International Construction Claims

By Tong Zhao and J. Mark Dungan, Woodbridge, Va.

Introduction

A contractor's ability to meet its planned productivity is an essential element of a successful project, and failing to do so could result in significant cost overruns for the contractor and create additional challenges to the contractor's ability to maintain the project schedule. A contractor's productivity or efficiency is simply a ratio of how many labor hours[1] will be required to perform a certain quantity of work. Depending upon the status of the design at the time of the price estimate, contractors can generally determine with reasonable reliability the quantity of work. The associated hours necessary to perform that defined quantity of work is more subjective and often relies upon the contractor's historical performance on other projects or other available estimating data, which the contractor then often adjusts to reflect any unique factors specific to the project at hand.

When a contractor is unable to achieve its planned productivity, the contractor can experience overruns in labor hours and corresponding labor costs. If the contractor believes that a labor overrun was due to disruptions and other causes beyond its control, then the contractor may attempt to recover that cost overrun through an adjustment in the contract price. For this reason, a claim for loss of productivity is sometimes referred to as a disruption claim.

This claim effort can be met with difficulty because proving lost productivity is one of the most contentious and controversial areas in construction claims and disputes, especially in international projects. This can be readily understood because a decline in productivity can occur in many circumstances on construction projects, which may be attributed to the owner, the contractor's estimate, the ability of the contractor to execute as estimated or to a third party.

Productivity is typically the ratio between work effort and work quantity. Thus, when the actual labor hours needed to accomplish a particular quantity of work exceed the estimated or "should have been" effort, then a loss of productivity occurs. As the number of hours needed to perform a certain unit of work increases, the productivity decreases.

For a contractor to recover damages due to lost productivity from factors beyond its control, the contractor will need to demonstrate that it is entitled to the damages by proving that there is a direct cause and effect relationship between the impacting events and the decline in productivity. Once entitlement is established, the contractor must quantify the damage. In this article we do not directly address the issue of entitlement; rather, we focus on the challenge of quantification.

In preparing loss of productivity quantifications in international venues, special attention may be required for factors such as the legal framework in which the claim is founded, the nature and extent of records maintained by each of the parties and the dispute resolution process. Many international construction contracts contemplate a three-step dispute resolution process, including amicable negotiation, alternative dispute resolution, such as the use of a dispute adjudication board (DAB) or a dispute resolution board (DRB), and arbitration.

Proving Lost Productivity, continued

This article will first review various methods to quantify the lost productivity and explain why the measured mile method (including its variation, the baseline method) is the most accepted approach. Then we will discuss common pitfalls in performing loss of productivity analysis, especially when implementing the measured mile method. We will conclude by explaining our recent contribution to the advancement of the available methods to calculate loss of productivity in our peer reviewed article titled, "Improved Baseline Method to Calculate Lost Construction Productivity" published in the *Journal of Construction Engineering and Management*.

Methods to Quantify Lost Productivity

A construction project is a very dynamic process where thousands of custom-crafted pieces that make up the project are assembled by trade workers in an environment often exposed to changing weather conditions. Such an undertaking is subject to numerous factors that can affect productivity. Therefore, the challenge of quantifying the loss of productivity caused by a specific factor or factors, which are not within the contractor's control, can be quite daunting. Fortunately, many courts and other triers of fact have recognized that the quantification of lost productivity does not have to be shown with exact mathematical precision. Acceptance of any analysis of lost productivity will be dependent, however, upon the degree of certainty of the results. As mentioned above, the number of variables that can affect productivity at a specific project site can be extensive. As methods of analysis become less project specific and involve the comparison of separate projects, the number of potential variables that can affect the results increases and the certainty of the results decreases. As the methods of analyses become even less project specific, such as in empirical studies, the degree of certainty is even further diminished. In general, proofs of causation and lost productivity are most preferred if they are based on contemporaneous project specific documentation.

The Association for the Advancement of Cost Engineering International (AACE International) Recommended Practice 25R-03: *Estimating Lost Labor Productivity in Construction Claims* (RP No. 25R-03) has summarized and ranked common methods to quantify lost labor productivity claims from most to least reliable based on professional acceptance, case law

... continued on page 65

Managing the Interface Risks Inherent in Offshore Wind Projects

by Roberta Downey, London

> "The pessimist complains about the wind;
> the optimist expects it to change;
> the realist adjusts the sails."[1]

Introduction: A Risk or an Opportunity?

The expensive lessons learnt on the early generations of wind farms have confirmed the irony summed up by the Chinese character for *risk* (风险), which incorporates the characters for *wind* and *danger*.

The large-scale commercial generation of offshore wind power is still at an embryonic stage: combining new and evolving technology with a challenging and logistically difficult construction environment. The types of issues that arise on such projects are not new—they are the usual suspects of quality, delay and cost overruns present in all major projects—but they are magnified by an immature industry, engineering in the offshore environment and a rapidly developing (and, to an extent, unproven) technology, which brings with it new challenges.

There is no standard industrywide procurement and contracting strategy, any more than there is a universal design or construction method, for an offshore wind farm. Indeed, the demands of scale, water depth, seabed conditions and distance from shore are such that bespoke solutions are being developed for each wind farm; and the pace of change is so rapid that it is not possible to predict with any accuracy the technologies and processes that will be adopted in the future.

But the drive for sustainable energy sources and government backing offer huge potential and has created a market that cannot be ignored. If European governments are to deliver on their commitments to renewable energy targets, successive generations of offshore wind farms will need to be built with larger turbines, in deeper water and farther outside territorial waters. As global leader in offshore wind, the UK government's stated ambition is for up to 18GW of offshore wind capacity deployed by 2020, and possibly over 40GW by 2030;[2] developers have registered their interest in deploying 46GW of capacity.[3] To achieve these targets, the Crown Estates' £75 billion Round 3 programme alone envisages that by 2020 there will be 10,000 turbines up to 200km offshore and in water up to 60m deep. In Germany, having abandoned nuclear power, the objective is for 35GW of offshore wind operating by 2020.[4]

This boom in construction and engineering work is not confined to offshore. In an effort to minimise the risks during transportation, turbine suppliers are investing hundreds of millions in facilities for coastal manufacturing[5] and research and development[6] to service UK offshore wind farms. Further, considerable reconstruction work and capital expenditure is required to upgrade the existing port infrastructure to support the renewable market.[7]

A new way of thinking and careful contract drafting are required to navigate such treacherous waters. A good contract will not save a bad project any more than partnering philosophies will avoid the ruinous losses that have been incurred during the construction phases of many an offshore wind project. Understandably, participants are reluctant to move outside the comfort of the known, but if they are to manage the challenges of offshore wind, different thinking is required and greater willingness to move away from traditional models.

... continued on page 53

A Light in the Dark: Department of Justice and Securities and Exchange Commission Provide Long-Awaited Guidance on Foreign Corrupt Practices Act Compliance

By Ned Parrott and Steven Lunsford, Washington, D.C.

Introduction

Greater domestic competition for fewer engineering and construction projects has led many U.S. contractors to expand operations to the international arena. Seeking any possible advantage either to place or to entrench its foreign foothold, a contractor may decide to intensify its interactions with foreign decision makers. Such interactions, however, may come at a steep cost to contractors if done in violation of the Foreign Corrupt Practices Act[1] (FCPA or the Act). Improper payments to foreign officials, among other activities, can result in severe civil and criminal penalties, which include suspension and debarment from contracting with the U.S. federal government.

Given the consequences for violating the FCPA, contractors who want to take advantage of new global opportunities must be aware of the scope and effect of the Act. Focusing on the anti-bribery provisions of the FCPA, this article will address who and what the FCPA covers, the related penalties for each violation and what enforcement agencies consider when deciding to open an investigation or bring charges against potential violators. Finally, the article highlights the importance of a robust FCPA compliance program to avoid potentially devastating sanctions.

DOJ and SEC Provide Clarity

On 14 November 2012, the Department of Justice (DOJ), together with the Securities and Exchange Commission (SEC), published a highly anticipated resource guide (the Guide)[2]. Although non-binding, and by no means an exhaustive reference, the Guide provides helpful information on the FCPA's requirements and the approach of agency enforcement, as well as several hypothetical examples aimed to aid U.S. companies in developing effective compliance programs. The Guide did not render any changes to the statutory language of the FCPA, but it does offer detailed interpretations of the Act from the agencies responsible for its enforcement.

The Basics

The FCPA was enacted in 1977 primarily to address corporate accounting transparency and to rein in bribery of foreign officials by U.S. companies. As stated in the Guide, the "FCPA was designed to prevent corrupt practices, protect investors, and provide a fair playing field for those honest companies trying to win business based on quality and price rather than bribes."[3]

What and Who Are Covered?

The FCPA "prohibits offering to pay, paying, promising to pay, or authorizing the payment of money or anything of value to a foreign official in order to influence any act or decision of the foreign official in his or her official capacity or to secure any other improper advantage in order to obtain or retain business."[4]

The anti-bribery provisions of the Act apply to "issuers" (generally defined as companies that trade stock in U.S. markets and are required to file SEC reports) and "domestic concerns" (any citizen, corporation, partnership, etc., that is organized and has its principal place of business in the United States). This in effect covers all U.S. business centers. The Act covers an issuer's and a domestic concern's officers, directors, employees, agents and shareholders. The Act also applies to certain other persons and entities acting while in U.S. territory (for example, foreign nationals engaging in any act in furtherance of a corrupt payment). Payments to third parties to carry out proscribed actions under the Act are also prohibited.

The FCPA governs conduct both inside and outside the United States, and violators may be prosecuted for using U.S. mail or "any means or instrumentality of interstate commerce in furtherance of a corrupt payment to a foreign official."[5] The Act defines "interstate commerce" as "trade, commerce, transportation, or communication among the

FCPA Compliance, continued

several States, or between any foreign country and any State or between any State and any place or ship outside thereof."[6] In other words, "placing a telephone call or sending an e-mail, text message, or fax from, to, or through the United States involves interstate commerce—as does sending a wire transfer from or to a U.S. bank or otherwise using the U.S. banking system, or traveling across state borders or internationally to or from the United States."[7]

The FCPA only applies to payments intended to induce a foreign official to use his or her position "in order to assist such issuer in obtaining or retaining business for or with, or directing business to, any person."[8] To violate the Act, such payments must be made "corruptly" (an intent or desire to wrongfully influence the recipient) and "willfully" (an act committed voluntarily and purposefully, and with a bad purpose).[9]

The Guide instructs that many enforcement actions by the DOJ and the SEC "involve bribes to obtain or retain government contracts."[10] Examples of actions taken to obtain or retain such business that might run afoul of the Act include: winning a contract; influencing the procurement process; gaining access to non-public bid tender information; influencing the adjudication of lawsuits or enforcement actions; obtaining exceptions to regulations; and avoiding contract termination.

Who Is a Foreign Official?

The FCPA defines "foreign official" to include:

> any officer or employee of a foreign government or any department, agency, or instrumentality thereof, or of a public international organization, or any person acting in an official capacity for or on behalf of any such government or department, agency, or instrumentality, or for or on behalf of any such public international organization.[11]

The Guide emphasizes that the Act "broadly applies to corrupt payments to 'any' officer or employee of a foreign government and to those acting on the foreign government's behalf" and "thus covers corrupt payments to low-ranking employees and high-level officials alike."[12]

Foreign officials, as defined by the Act, can be bureaucrats at all levels of government. For example, in one prominent investigation concerning the construction of retail stores in Mexico, it was alleged that bribes were paid to mayors, city council members and low-level bureaucrats. Such bribes were allegedly paid to obtain favorable permits, zoning approvals and reductions in environmental impact fees. Other examples of improper payments investigated by the DOJ include payments to hospital administrators and members of regulatory committees.

In its definition of foreign officials, the Act includes officers or employees of any "instrumentality" of a foreign government. Companies should take special care in avoiding improper payments to instrumentalities, as the Guide warns that "DOJ and SEC continue to regularly bring FCPA cases involving bribes paid to employees of agencies and instrumentalities of foreign governments."[13]

Understanding what constitutes a government "instrumentality" can prove difficult for many companies, and neither the Act nor the Guide provides much guidance. Instead, determining whether an entity constitutes an instrumentality "requires a fact-specific analysis of an entity's ownership, control, status and function."[14] A number of factors have been considered by the courts making such determinations, including: the foreign state's extent of ownership in and control over the entity; the circumstances surrounding the entity's creation; and the purpose of the entity's activities. The Guide warns that companies should consider these factors in determining whether an entity constitutes an instrumentality for purposes of the FCPA, and concludes that "[w]hile no one factor is dispositive or necessarily more important than another, as a practical matter, an entity is unlikely to qualify as an instrumentality if a

FCPA Compliance, continued

government does not own or control a majority of its shares."[15]

Contributions to foreign *governments*, on the other hand, are permitted under the Act. It should be noted, however, that such payments may violate other U.S. laws (such as wire fraud and money laundering), and any company "contemplating contributions or donations to foreign governments should take steps to ensure that no monies are used for corrupt purposes, such as the personal benefit of individual foreign officials."[16]

The FCPA Imposes Severe Penalties on Violators

To achieve its public policy goals, the FCPA imposes substantial penalties on violators. For each violation of the anti-bribery provisions, a company is subject to a criminal fine of up to US$2 million. Individuals, including officers, directors and agents of a company, are subject to a criminal fine of up to US$100,000 and imprisonment for up to five years. Both companies and individuals are also subject to potential civil penalties of US$16,000 for each violation.

In addition to these criminal and civil penalties, individuals and companies that violate the FCPA may face suspension and debarment from U.S. federal government contracting.[17]

DOJ Investigations

According to the Guide, the DOJ will consider several factors in "conducting an investigation, determining whether to charge a corporation, and negotiating plea or other agreements."[18] Among other factors, the DOJ will assess: the nature and seriousness of the offense; the pervasiveness of the wrongdoing within the company; the company's history of similar misconduct; the company's timely and voluntary disclosure of any wrongdoing; the existence of an effective pre-existing compliance program; and the company's remedial actions.

Recent DOJ Actions

In 2013, the DOJ and the SEC collected over US$635 million in penalties for violations of the FCPA. In January 2014, they collected an additional US$384 million. The vast majority of investigations, however, ended in guilty pleas, settlements or non-prosecution agreements.

For example, Knut Hammarskjold, the former CEO of Petro Tiger Ltd. (Petro Tiger), pleaded guilty to charges of conspiracy to violate the FCPA and to commit wire fraud. Petro Tiger is a British Virgin Islands oil and gas company

... continued on page 61

Introduction to Dispute Resolution Under the FIDIC (Fédération Internationale Des Ingénieurs-Conseils) Conditions of Contract

By Mariela Malfeld, Miami; Carter Reid, McLean, Va.; and John B. (Jack) Tieder Jr., McLean, Va.

One of the primary benefits of arbitration is that it allows disputes to be decided by experts in a particular field rather than by a court of general jurisdiction. This is true of both domestic and international disputes. Another benefit of arbitration in international matters is that neither party is required to resolve disputes in a country where the procedures and the language are literally and figuratively foreign. A major area of international economic activity is construction and engineering. It is also a highly specialized field. Thus disputes arising under or related to construction contracts are particularly suited to resolution by arbitration.

The *Fédération Internationale Des Ingénieurs-Conseils* (*FIDIC*) is a federation of international engineers. Among its endeavors is the preparation of contract forms for use on different types of international construction projects. There are a variety of risks on such projects that do not exist on domestic projects, especially in the United States. The nature of these risks and how they are allocated in the *FIDIC* is well beyond the scope of this article; however, the contract forms contain a disputes resolution process culminating in arbitration, which is the result of several decades of experience and development. This article will address that process as follows:

I. *FIDIC* Family (Suite) of Documents
II. Dispute Resolution Process
III. Conditions Precedent to Arbitration
IV. The Arbitration Sub-Clause
V. Possible Modifications to the Arbitration Sub-Clause

I. *FIDIC* Family (Suite) of Documents

FIDIC offers several forms of construction contracts. The current editions of the owner (employer)[1] and prime (main) contractor forms are as follows:

1. Red Book, Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer (1999)
2. Yellow Book, Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, Designed by the Contractor (1999)
3. Silver Book, Conditions of Contract for EPC Turnkey Projects (1999)
4. Green Book, Short Form of Contract (1999)
5. Gold Book, Conditions of Contract for Design, Build and Operate Projects (2008)
6. Pink Book, Multilateral Development Bank Harmonised Edition of the Red Book (2006)
7. Orange Book, Design Build and Turnkey (1995)
8. Turquoise (or Blue) Book, Form of Contract for Dredging and Reclamation Works (2006)

There are also contract forms for the other relationships on a typical construction project such as Client/Consultant Model Services Agreement (2006), Sub-Consultancy Agreement (1992), Joint Venture (Consortium) Agreement (1992), Conditions of Subcontract for Works of Civil Eng. Construction (1994) and Conditions of Subcontract for Construction for Building and Engineering Works Designed by the Employer (2011).

These forms also specify disputes resolution procedures that differ somewhat from the employer/main contractor forms. This article, however, will focus on Clause 20, Claims, Disputes and Arbitration of the Red Book, which is the most widely used of the *FIDIC* forms. The other employer/main contractor forms have the same or a very similar procedure, also at Clause 20.

II. Dispute Resolution Process

One of the goals of the *FIDIC* disputes procedure is the use of progressive formality to reach agreement prior to actual arbitration. There are a series of escalating dispute resolution steps the parties must follow before initiating arbitration. These steps seek to preserve

... continued on page 26

WORLD ROUNDUP

ASEAN, INDONESIA

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Indonesia elects new president.

Indonesia elected a new president on 9 July 2014, Joko Widodo (announced on 22 July). Mr. Widodo edged out Prabowo Subianto, a former military general, in a tight and somewhat controversial race. Mr. Widodo is expected to engage in a pro-business and economic growth platform, focusing on stability and continued engagement with foreign investors. In the meantime, the governor of Jakarta and other city officials have embarked on a campaign to start building the much-anticipated MRT (mass rapid transit) system, which has been plagued by delay and corruption for the past several years. The MRT is expected to improve traffic congestion significantly in and around Jakarta, and facilitate movement of goods to and from the port in the northern part of Jakarta.

Fifty-six Indonesians join ISIS.

Indonesia has encountered some recent international legal challenges, discovering in June that as many as fifty-six of its citizens have travelled to Syria or Iraq to join ISIS. Indonesian police are investigating the matter. The government is officially committed to eradicating ISIS involvement in Indonesia.

Former WTO director discusses changes to trade protection.

Indonesia hosted a seminar on 10 September featuring former World Trade Organization (WTO) general director, Pascal Lamy, who spoke on the topic "Differences in the Old and New World of Trade." Mr. Pascal emphasized a change in the climate of trade protection, formerly based on a culture of shielding domestic producers with higher tariffs, to a new emphasis on consumer protection via regulations and safety standards. He noted both the benefits (to consumers) and challenges (for producers) in this emphasis on non-tariff barriers involving safety and attempts at harmonization of very diverse national production standards around the globe.

Advocates International hold conference in Jakarta.

Indonesia hosted a conference by Advocates International in Jakarta, 31 October-1 November 2014, involving attorneys, law students and human rights activists. The conference focused on anticorruption, economic growth through integrity in law enforcement and building legal networks to help stop sex trafficking in the area. Indonesia has a growing international problem of sex trafficking, including its children, involving illicit networks in Singapore and Malaysia. The conference drew attendees from various countries in Asia and elsewhere.

ASEAN provides economic growth and stability in Southeast Asia.

Association of Southeast Asian Nations or ASEAN (with its headquarters in Indonesia) continues to make strides in improving economic growth and political stability in Southeast Asia. ASEAN has a combined population among its member trading states of approximately 600 million people and is seen by many, including the United States, as an important balance and stabilizing presence to the growing economic influence (and political power) of neighboring states India and China.

ASEAN and China have entered into a free trade agreement, the China ASEAN Free Trade Area (CAFTA, 2010). As of 2014 September, seven nations in CAFTA have embraced the zero tariff policy of CAFTA on about 90% of goods traded in the region (covering rubber, textiles, vegetable oil, steel, etc.). Some of the newer members of ASEAN are expected to join that zero tariff policy in 2015. CAFTA is the third-largest free trade area in the world. India and ASEAN continue to grow their own trade cooperation as well.

BRAZIL

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New internet law enshrines net neutrality in Brazil.

Hailed in *The Economist* as Brazil's "magna carta for the web," Law No. 12,965/2014 (the Brazilian Internet Law) took effect on 23 June 2014. The law embraces net neutrality, which requires equal treatment for every data transmission regardless of content, origin, destination, service, terminal or application. The law expands privacy rights for users and offers internet service providers and internet application providers limited immunity from lawsuits related to user-generated content. Critics have noted that the law goes too far in requiring compliance by non-Brazilian service

World Roundup, continued

providers, which could create conflicting compliance regimes in different countries. Regardless, the law goes further than proposals in the United States and the European Union and has internet firms actively reviewing their compliance policies.

Updates to Brazilian arbitration law remain in limbo.

For quite some time, the Brazilian Legislature has debated changes to the country's arbitration law, and a panel of judges and practitioners has attempted to propose updates after fending off a number of proposals to weaken the legislation. Recently the Brazilian Chamber of Deputies (similar to the United States House of Representatives) approved an amendment that would closely regulate any arbitration involving a state-owned entity. The Brazilian Senate is expected to reject the amendment, but the battle over the final text of the law is far from over.

Court decides that government must pay for rare medical treatment in Miami.

Along with residents of other countries, Brazilians frequently seek specialized medical treatment in Florida, but a recent decision goes a step further. A 5-month-old child named Sofia needs a triple organ transplant that no hospital in Brazil has ever performed. Sofia's mother obtained a decision from the Federal Appellate Court in the State of São Paulo that ordered the Brazilian government to fully fund the surgery. Sofia is at Jackson Memorial Hospital, waiting for an appropriate donor.

CHINA AND HONG KONG

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Is the "One Country, Two Systems" principle in danger?

Ever since Hong Kong was handed back to China in 1997 after more than a century of British administration (the handover), it has enjoyed a high degree of autonomy under the principle "one country, two systems." This principle was laid out in the Sino-British Declaration of 1984, an agreement signed by British Prime Minister Margaret Thatcher and Chinese Prime Minister Zhao Ziyang, which guaranteed that life in Hong Kong would remain unaltered after the handover. Since the handover, Hong Kong has been able to maintain economic and judicial autonomy from China, its own freely convertible currency (the Hong Kong dollar) and individual membership to various international organizations, such as the World Trade Organization. Hong Kong citizens have also been able to enjoy greater civil liberties than their compatriots in the mainland, ranging from uncontrolled internet to the possibility of engaging in pro-democracy demonstrations.

This may be about to change. On 10 June 2014, the Information Office of the State Council of the People's Republic of China issued a White Paper on the Practice of the "One Country, Two Systems" Policy in the Hong Kong Special Administrative Region (the White Paper), which arguably puts Hong Kong's cherished autonomy at risk. The White Paper reminds Hong Kong that the central government (i.e., Beijing) has comprehensive jurisdiction over it and that Hong Kong's autonomy comes from the central government, which implicitly means that the central government can also take it away. *See* Section V.1 of the White Paper. The full English version of the White Paper is available at http://news.xinhuanet.com/english/china/2014-06/10/c_133396891.htm.

As a means of asserting this "comprehensive jurisdiction," the White Paper highlights the need of respecting and upholding the authority of the Standing Committee of the National People's Congress (the Standing Committee) to interpret Hong Kong's Basic Law, dubbed as the city's constitution. While the Standing Committee's powers of interpretation are not new, Hong Kongers are worried that now, after being emphasized in a white paper—the way in which the Chinese government sets a policy on specific issues—the Standing Committee might take a more active position in regard to Hong Kong's law, curtailing local courts' autonomy. As stated by the Hong Kong Bar Association (the HKBA), Hong Kong courts are constitutionally authorized to interpret on their own matters within the city's jurisdiction. The Standing Committee's interpretation should therefore be "rarely and cautiously undertaken." *See* Response of the Hong Kong Bar Association to the White Paper, available at http://www.hkba.org/whatsnew/misc/White_Paper_Response_eng.pdf.

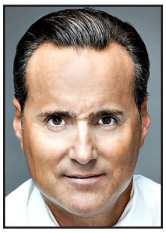
According to the White Paper, the interpretation of the Basic Law by the Standing Committee is "aimed at maintaining the rule of law in Hong Kong" (*See* Section V.2 of the White Paper). Beijing's idea of the rule of law, however, might have its own "Chinese characteristics" (in the same way China practices "socialism with Chinese characteristics"). The White Paper states that all those who administer Hong Kong, including judges, must be patriotic, as "loving the country is the basic political requirement for Hong Kong's administrators." *See* Section V.3 of the White Paper. Equating judges to administrators blurs the lines between the different branches of power and forces judges into the political arena, something Hong Kong judges are not willing to do. As stated by the HKBA, "[a]ny erroneous

World Roundup, continued

public categorization of Judges and judicial officers as 'administrators' or official exhortation for them to carry out any political mission or task will send out the wrong message to the people of Hong Kong, people on the Mainland and the wider international community that Courts here are part of the machinery of the Government and sing in unison with it."

There has been significant pushback to the White Paper, and it is not yet clear what its effects will be. Some have said that Hong Kong's autonomy is well established by now and Beijing cannot change that. Others more pessimistically fear that the "One Country, Two Systems" principles may be dissolving into just "One Country."

EUROPEAN UNION



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European Union court permits discriminatory energy support schemes.

In a major decision limiting the free movement of goods among member states, the Court of Justice of the European Union ruled that member states do not need to open up renewable energy support schemes to producers in other EU countries.

In CJEU, C-573/12, *Ålands Vindkraft AB v. Energimyndigheten*, the court decided that a member state's restriction on the free movement of goods is justified when it aims to protect the environment by promoting renewable energy.

The court made a clear choice in favor of investor confidence, allowing far-reaching limitations to the EU's fundamental principle of the free movement of goods.

Germany enacts FATCA enabling law.

Germany recently enacted a law enabling the implementation of the United States' Foreign Account Tax Compliance Act (FATCA).

The FATCA-USA Implementation Regulation, known in German as FATCA-USA-*Umsetzungsverordnung* or FATCA-USA-*UmsV*, entered into force on 23 July 2014.

Under the law, German financial institutions must report relevant data to the German government, which then exchanges it reciprocally with the United States.

Enacted by the U.S. Congress in 2010, and effective from 1 July 2014, FATCA was implemented to ensure that U.S. authorities could obtain information on accounts provided by foreign financial institutions (FFIs) concerning U.S. citizens. Failure by an FFI to disclose information about its U.S. clients will result in a requirement to withhold a 30% tax on payments of U.S.-sourced income.

Vive le recours collectif: France finally embraces class actions.

It is now possible to file a class action lawsuit in France. One of the last western European countries to permit class action lawsuits, France has finally enacted French Consumer Law No. 2014-344. The new legislation introduces class actions into the French legal system under Articles 1 and 2 of the Law.

Unlike opt-out class actions in the United States, class actions in France are based on an opt-in system. Under the opt-in framework, consumers are required to express their consent to be part of a group or class to be compensated after a judgment has been rendered on liability.

The scope of class actions has been exclusively limited to consumer and competition law violations. Class actions are limited to addressing the material and financial harms suffered by individual consumers when purchasing a product or when being provided with a service.

Spain implements "Google Tax" on internet news aggregators.

Spain recently enacted a controversial law requiring content aggregators to pay fees to the original publisher.

The highly contested law—officially known as Canon AEDE—has been nicknamed the "Google Tax" because it targets Google and other news aggregators that post the work of journalists and make it available to a global audience.

The law, part of a copyright reform act, came after years of Spanish newspapers complaining that Google News and other large news aggregators exploit them by using their stories to populate their news feeds.

Under the law, sites that post a hyperlink to a journalist's work must pay a fee for "listing a link and a meaningful description" of the article to which they are referring.

MIDDLE EAST

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Iraq's central government and the Kurdistan Regional Government embroiled in legal disputes surrounding oil exportation.

World Roundup, continued

In May 2014, the Kurdistan Regional Government began exporting crude oil without the approval of Iraq's central government. Iraq's central government contends that these oil exports are illegal and has filed suit in the United States to gain control of a tanker with crude oil set to dock in Texas. The central government has also filed an action in Baghdad against the Kurdistan Regional Government and against Greek shipping company Marine Management Services (MMS) for its role in the export of the crude oil.

Prominent Kuwaiti family wins award against Swiss bank.

A court in Dubai's financial centre ruled in favor of Kuwait's prominent Khorafi family in a suit against Switzerland's Bank Sarasin over US$200 million of investments that went bad. The court found that Sarasin sold unsuitable complex investments to Khorafi family members in 2007 and 2008, and should pay compensation to the family.

Standard Chartered Bank in legal trouble in the UAE following settlement with U.S. regulators.

Under a settlement with U.S. regulators regarding anti-money laundering compliance, Standard Chartered Bank agreed to pay a US$300 million fine, end high-risk relationships with small- and medium-sized business clients in the United Arab Emirates (UAE) and suspend the processing of U.S. dollar-denominated payments for some clients at its Hong Kong unit. But the settlement did not end Standard Chartered's problems with regulators. The UAE Central Bank has now stated that Standard Chartered will be liable to UAE account owners whose accounts were closed under the settlement with U.S. regulators.

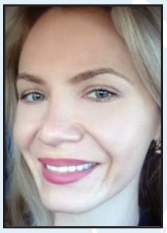
UAE's Dana Gas wins supply ruling against National Iranian Oil Company.

In 2001, United Arab Emirates-based energy firm Dana Gas's affiliate Crescent Petroleum entered into a twenty-five-year contract with National Iranian Oil Company (NIOC) to supply 600 million cubic feet a day of Iranian natural gas starting in 2005. The Iranian gas never came because Iranian officials, unhappy with the pricing formula, began to call for cancellation of the agreement and for the gas to be used within Iran. Crescent initiated arbitration, and the tribunal sided with Crescent in a decision that could force Iran to pump natural gas into Dana's facilities in Sharjah.

Prominent Saudi businesspeople to sue Jordan over customs' strike

The chairman of the Saudi-Jordanian Business Council informed the *Jordanian Times* that several Saudi businesspeople are planning to file a lawsuit against the Jordan Customs Department (JCD) when they are done with assessing the damage caused by a JCD employees' strike between 15-23 July 2014.

RUSSIA AND CIS



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Sanctions, sanctions, sanctions.

The United States, the European Union and Canada have issued specific targeted sanctions against Russia in response to Ukraine's allegations of Russia's involvement in the Ukrainian civil war. In response, Russian President Vladimir Putin signed a decree on 6 August 2014 banning imports for one year of agricultural and food products from countries that have imposed sanctions on Russia.

U.S. sanctions: The United States, under executive orders promulgated in March 2014, has blocked forty-five Russian and Ukrainian individuals and nineteen companies. The designations involve several Russian banks, energy sector companies, politicians and businessmen that are considered within President Putin's close circle. When the U.S. Treasury Department

World Roundup, continued

Office of Foreign Asset Control (OFAC) designates persons as being blocked, they appear on the OFAC's Specially Designated Nationals List, which can be accessed at http://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/default.aspx. The blocking measure freezes designated individuals' and entities' assets located in the United States and generally forbids U.S. persons to engage in transactions in which these sanctioned persons/entities have a direct or an indirect interest. Apart from the designees themselves, blocking prohibitions extend to companies that are at least 50% owned by designated individuals and entities. If a designated person is in the management of a company but does not own 50% or more of the company, that will not cause the company to be treated like a blocked entity. Application of blocking measures against senior managers, however, can prevent transactions with their companies as it could be deemed an indirect dealing with the blocked person. Further, the United States has intensified export controls relating to Russia. The Commerce Department has announced that it plans to revoke licenses for some exports and re-exports of advanced technology equipment, software and technology to Russia. Finally, individuals who are blocked by OFAC generally are not permitted to enter the United States.

EU sanctions: The Council of the European Union has added forty-eight individuals to the list of sanctioned Russian and Ukrainian persons. Unlike with the U.S. sanctions, companies owned or controlled by listed individuals are considered frozen. The EU sanctions block all funds and economic resources belonging to or owned, held or controlled by the listed persons and ban entry to the European Union by such persons. Each EU member state can, however, adopt different rules regarding when a listed person controls a company. The European Union has not announced any EU-wide restrictions on export licenses to Russia. Since 18 March 2014, however, the United Kingdom has suspended licenses for direct exports to Russia as well as for exports to third countries where there is a risk that items will be incorporated into equipment for export to Russia.

Canadian sanctions: Beginning in March 2014, Canada began to impose regulations to freeze assets of designated persons and entities. Regulations prohibit persons in Canada and Canadians abroad from: any dealings with property held by or on behalf of a designated person, or facilitating or providing financial or other related services in respect of such a dealing; making any goods available to a designated person; and providing any financial or related services to or for the benefit of a designated person. The exceptions to the regulations include: payments made by or on behalf of designated persons pursuant to contracts entered into before their designation, provided the payment is not for their benefit; pension payments; certain transactions in respect of diplomatic missions, UN agencies, the International Red Cross and Canadian NGOs in certain circumstances; transactions necessary for a Canadian to transfer to a non-designated person any accounts, funds or investments held by a designated person when that person became a designated person; financial services required to obtain certain legal services in Canada; and payments to any person in Canada or any Canadian abroad with respect to loans entered into prior to 17 March 2014.

Russian sanctions: In August 2014, President Putin signed a one-year import ban for certain foods from the United States, the European Union and Canada, excluding some foods that are needed for people with allergies and agricultural growth. In addition to the food imports embargo, Russia is banning Ukrainian airlines from transit across its territory. The European Union's food exports to Russia last year totaled US$15.8 billion while U.S. food exports to Russia were worth US$1.3 billion. Russia was the European Union's second-biggest market for food exports, after the United States. Russia has turned to the BRICs countries (Brazil, Russia, India and China) for the increase of imported foods, and Brazil has already promised to triple its poultry exportation to Russia.

While these new developments close some doors and open new ones, the business entities and persons working overseas need to take precautionary steps and consult with specialized legal professionals to protect themselves from potential regulatory violations that can result in fines, license revocations and, in some circumstances, imprisonment.

Yukos majority shareholders score BIG victory as Yukos saga continues.

The biggest award in the history of investment arbitration could not have gone unnoticed by the international arbitration community. The arbitral tribunal comprising Yves Fortier, Stephen Schwebel and Charles Poncet seated at the Peace Palace at The Hague issued an award in which the tribunal found that the Russian government violated the Energy Charter Treaty by expropriating Yukos's main asset, Yuganskneftegaz, forcing it into bankruptcy. Shearman and Sterling, counsel for the claimants, Yukos's majority shareholders, secured the US$50 billion win plus US$60 million in legal fees as well as US$5.6 million in arbitration costs in proceedings that lasted for 10 years and reportedly had a twenty-one-day hearing on the merits. Emmanuel Gaillard, head of the arbitration practice at Shearman

World Roundup, continued

and Sterling, noted that while the claimants produced eight factual witnesses, the respondent did not produce any, for which it was heavily criticized by the tribunal. He further noted that the tribunal heavily relied on the VAT evidence, concluding that the totality of evidence led arbitrators to their factual findings. The respondent's counsel successfully argued that Yukos inappropriately used the Russia-Cypress Double Taxation Treaty and was able to reduce the damages and the fees amount by 25%. Subsequently thereafter, in another decision, the European Court of Human Rights rendered a US$1.2 billion decision for the Yukos shareholders. This is not a final step for the claimants, as collecting on the awards could be a challenge. The Russian government has said it is going to appeal, although it is unclear how and where. In a different case arising from the collapse of Yukos, *Yukos Capital SARL v. OJSC Rosneft Oil Co.*, the English High Court has confirmed that arbitration awards annulled by a Russian court may still be given effect under English law.

SINGAPORE

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Singapore passes law aimed to limit foreigners' access to jobs.

The Singapore Parliament has passed a new law making it harder for foreigners to compete for jobs in the island city-state.

Under the new law, Singapore-based companies must post all employment advertisements on an online jobs bank for at least 14 days before they can offer open positions to foreign applicants.

Firms with 25 or fewer staff members or those recruiting for jobs paying US$10,000 and above a month are exempt from the advertising requirement.

The law is the latest in a series of government measures to tighten worker inflows after facing criticism from Singaporeans who accuse foreigners of competing with them for jobs, housing, schools and medical care.

Singapore Parliament approves transboundary haze pollution bill.

Singapore lawmakers have approved a controversial measure that creates criminal and civil liabilities for both foreign and domestic companies that are responsible for causing haze overseas.

Singapore has been plagued by air pollution caused by peat and forest fires in Sumatra. Many of the fires have been linked to oil palm, timber and wood pulp concessions controlled by companies with operations in Singapore. According to NASA data from the World Resources Institute, dozens of fires are burning directly across the Strait of Malacca from Singapore.

While lawmakers note that the law will be difficult to enforce since it also applies to companies outside Singapore, they are left with no option but to address the harm that companies inflict on Singapore's health and environment.

The bill, which will become law when signed by the president, will impose fines of up to US$80,000 for each day companies contribute to air pollution through burning on their plantations and by conducting forestry operations.

SOUTH AMERICA NORTHERN CONE

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Colombia approves renewable energy legislation.

Last May, Colombia adopted Law No. 1715 of 13 May 2014 aimed at integrating unconventional renewable energy sources into the country's national energy system. Law 1715 establishes a comprehensive legal framework for the development of new and cleaner sources of energy in Colombia. The new Act also establishes substantial tax incentives like a 50% deduction on research, development and investment made in unconventional renewable energy activities, as well as other tax benefits, like exceptions in VAT tax, custom duties and depreciation.

Peru amends its state procurement act.

Peru's legislation on public procurement contracts, already one of the most modern in the region, has received an update (Law No. 30225). Of special interest is article 45, which develops the mechanisms for resolution of disputes between the public sector and private contractors. Arbitration of state-private parties has been praised in Peru and internationally as an effective tool to resolve this kind of dispute. As was the case with the prior legislation, all disputes between the State and private parties are submitted to arbitration. The new Act, however, has amended several subsections concerning the contractual relationship, procedure, arbitrator and arbitral secretary registration and other aspects of public procurement. These reforms seek to regulate and improve the already successful role of the arbitrator and arbitral secretaries within the arbitration of public contracts in Peru and to correct some irregularities attributed to lack of control over who can serve as an

World Roundup, continued

arbitrator or secretary, particularly in ad hoc arbitrations.

Bolivia seeks to attract foreign investment.

In an attempt to promote foreign investment, Bolivia has adopted Law No. 516 of 4 April 2014. The new Act applies to both Bolivian and foreign investment. Not surprisingly, though the Act authorizes the State to grant general and specific incentives to particular investments, it completely lacks any protections in favor of foreign investments. More specifically, there are none of the protections normally included in investment protection treaties, such as fair and equitable treatment, national treatment, full protection and security and compensation for expropriations. The Act, however, provides for the possibility of adopting future legislation providing for arbitration to resolve disputes between the State and investors.

Venezuela's highest court adopts new criteria for divorce.

In a landmark decision sure to have an impact on the enforcement of Venezuelan divorce decrees in Florida, the Constitutional Chamber of the Superior Tribunal of Justice of Venezuela (TSJ) has adopted a new rule concerning article 185-A of the Civil Code. The statute provides the possibility of securing a fast-track divorce decree based on the spouses' lack of joint cohabitation for five years. Article 185-A, however, provides a byzantine procedure where a party can stall the divorce trial by not showing up or simply denying the lack of cohabitation. Pursuant to the TSJ's ruling, should the defendant fail to appear or if the defendant opposes the divorce on the ground of cohabitation, the court shall open an evidentiary proceeding to determine whether the spouses have not cohabitated for at least five years, in which case the court shall grant the divorce.

Venezuela adopts new exchange control regime.

Last February, Venezuela adopted swift changes to its controversial exchange control regime. The new legislation includes the elimination of CADIVI, the entity in charge of authorizing and granting foreign currency since 2002. A new agency, the National Center for Exterior Commerce (CENCOEX), has been established in CADIVI's place. The new regulations create a new system, SICAD, to acquire U.S. dollars by means of a public auction of currency. Two auction mechanisms are established, SICAD I, applicable to determined sectors of the economy, and SICAD II, in which all individuals and companies can participate through authorized banks. Petroleos de Venezuela as well as private entities are authorized to offer currency through SICAD I or SICAD II.

As part of the reforms, the president issued a decree adopting the Act on Exchange Regime and its Violations, which replaces the Act Against Exchange Violations. This legislation regulates the terms and conditions upon which the government manages foreign currency, as well as the legal sanctions applicable to infringements of exchange control regulations. Significantly, the new Act removes the prohibition of offering goods and services in foreign currency.

Colombia and Ecuador adopt freedom of access to information acts.

Colombia (Law No. 1712 of 6 March 2014) and Ecuador (Law No. 24) have each adopted legislation allowing citizens to access public information and providing for procedures to exercise such rights and to protect confidential information. With these new laws, these countries join Peru in providing comprehensive legislation to promote transparency and access to governmental information.

Both laws are similar in many respects, including covered persons, publicity, transparency, right to access information, exceptions to access (national security, privacy, reserved information, etc.) and remedies. Significantly, both laws contain rules providing for the transparency of public procurement and the bidding process.

TAIWAN

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Mental disability is not exempted from death penalty before Supreme Court of Taiwan.

The Supreme Court of Taiwan recently denied the appeal of a man with schizophrenia accused of killing five people by setting fire to an occupied dwelling house. The decision undermines the efforts of the Legislative Yuan (the legislative body) and the Executive Yuan (the governmental body) of Taiwan to follow the principles of the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) adopted by the United Nations (hereinafter referred to as Two Covenants).

Taiwan's 2009 adoption of the ICCPR and the ICESCR as a matter of domestic law was marked as a milestone of the enormous and important progress of human rights protection in Taiwan. For years, the domestic implementation of the Two Covenants has received widespread attention in Taiwan. One of the issues of concern is whether a domestic court can sentence

World Roundup, continued

people with mental disabilities or similar illnesses to death.

In 2013, the government of Taiwan invited a group of independent experts from various countries to provide a review of the current implementation of the international human rights covenants in Taiwan to fulfill the supervision function called for under customary international law. On 1 March 2013, this group stated in its concluding observations and recommendations: "[P]ersons with mental or intellectual disabilities shall never be sentenced to death and/or executed." In October 2013, the Supreme Court of Taiwan, quoting the independent experts' opinion, declared that a capital punishment decision would be in conflict with the laws if the court sentences a person with mental disabilities to death without taking into account the defendant's disabilities as well as the spirit of international human rights law during the sentencing proceeding.

Issuing a conflicting opinion on 2 September 2014, the Supreme Court of Taiwan, referencing the abovementioned case, stated that, according to Article 3 of the Act to Implement the ICCPR and the ICESCR of Taiwan, application of the Two Covenants should make reference to their legislative purposes and interpretations by the Human Rights Committee. Human Rights Resolution 2005/59, which urges all states that still maintain the death penalty not to impose the death penalty on a person suffering from any mental or intellectual disabilities or to execute any such person, has been regulated by the United Nations Commission on Human Rights (UNCHR) rather than by the United Nations Human Rights Committee (UNHRC). On this ground, the Supreme Court stated that Human Rights Resolution 2005/59 is not binding on domestic courts since it was made by the UNCHR instead of by the UNHRC; nor does it apply in all other death penalty cases in Taiwan.

Furthermore, the Supreme Court also concluded that the UNCHR in its resolution only *urges* all states not to impose the death penalty on a person with mental disabilities, and the word *urge* does not imply a mandatory obligation. Therefore, according to the Supreme Court, the domestic court is not obligated to obey this rule.

Obviously, the Supreme Court of Taiwan has adopted a cautious attitude toward the implement of the Two Covenants. The Court also has expressed a view contrary to its own October 2013 decision about the contentious issue of whether people with mental disabilities can be sentenced to death. A number of death penalty cases are still ongoing and a number of death row inmates have mental illnesses, and concern remains over whether the domestic courts of Taiwan will keep following the principles of international human rights law.

UNITED STATES

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United States, European Union expand sanctions against Russian companies, persons.

The United States and the European Union have both instituted increasingly harsh sanctions against Russian companies and persons in response to Russian President Vladimir Putin's support for the armed conflict in Eastern Ukraine and the political change in the Crimea. Russian banks and oil companies have been especially targeted, resulting in American and European companies having to conduct significant due diligence to determine if continued business transactions are legal. Arrests of U.S. persons and seizures of merchandise and bank accounts have resulted in alleged violations of the new, ever-expanding sanctions. As with doing business with Iran, the allegations of violations usually include a money laundering provision. The U.S. Department of Homeland Security, the FBI, the U.S. Department of State, the Office of Foreign Assets Control of the U.S. Department of the Treasury and the U.S. Department of Commerce are all involved in these investigations to enforce the Obama administration's foreign policy.

Dispute Resolution Under the FIDIC, from page 17

forward progress of the project while the parties resolve disputes. Specifically, for the case in which the contractor has a claim for extra work and/or extra time, Clause 20 provides a formal method for pursuing that claim. For ease of reference, the titles of each of the sub-clauses to Clause 20—Claims, Disputes and Arbitration—are referenced below, with the text of the sub-clauses most commonly referred to in this article (20.1, 20.4, 20.5, 20.6) set forth in their entirety:

> 20.1 Contractor's Claims
>
> If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.
>
> If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.
>
> The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance. The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub-Clause,

Dispute Resolution Under the FIDIC, continued

monitor the record keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.

Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

(a) this fully detailed claim shall be considered as interim;

(b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and

(c) the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within such time. Each Payment Certificate shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate. The Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

20.2 Appointment of the Dispute Adjudication Board

20.3 Failure to Agree Dispute Adjudication Board

20.4 Obtaining Dispute Adjudication Board's Decision

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DAB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.

Dispute Resolution Under the FIDIC, continued

For a DAB of three persons, the DAB shall be deemed to have received such reference on the date when it is received by the chairman of the DAB.

Both Parties shall promptly make available to the DAB all such additional information, further access to the Site, and appropriate facilities, as the DAB may require for the purposes of making a decision on such dispute. The DAB shall be deemed to be not acting as arbitrator(s).

Within 84 days after receiving such reference, or within such other period as may be proposed by the DAB and approved by both Parties, the DAB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.

If either Party is dissatisfied with the DAB's decision, then either Party may, within 28 days after receiving the decision, give notice to the other Party of its dissatisfaction. If the DAB fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give notice to the other Party of its dissatisfaction. In either event, this notice of dissatisfaction shall state that it is given under this Sub-Clause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in Sub-Clause 20.7 [Failure to Comply with Dispute Adjudication Board's Decision] and Sub-Clause 20.8 [Expiry of Dispute Adjudication Board's Appointment], neither Party shall be entitled to commence arbitration of a dispute unless a notice of dissatisfaction has been given in accordance with this Sub-Clause. If the DAB has given its decision as to a matter in dispute to both Parties, and no notice of dissatisfaction has been given by either Party within 28 days after it received the DAB's decision, then the decision shall become final and binding upon both Parties.

20.5 Amicable Settlement

Where notice of dissatisfaction has been given under Sub-Clause 20.4 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, arbitration may be commenced on or after the fifty-sixth day after the day on which notice of dissatisfaction was given, even if no attempt at amicable settlement has been made.

20.6 Arbitration

Unless settled amicably, any dispute in respect of which the DAB's decision (if any) has not become final and binding shall be finally settled by international arbitration. Unless otherwise agreed by both Parties: (a) the dispute shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce, (b) the dispute shall be settled by three arbitrators appointed in accordance with these Rules, and (c) the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language]. The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB, relevant to the dispute. Nothing shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the DAB to obtain its decision or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the DAB shall be admissible in evidence in the arbitration. Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DAB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

20.7 Failure to Comply with Dispute Adjudication

Dispute Resolution Under the FIDIC, continued

Board's Decision

20.8 Expiry of Dispute Adjudication Board's Appointment

Notice of a Claim

The first step, articulated under Sub-Clause 20.1, entitled Contractor's Claims, is to provide notice of the claim. Under this provision, the contractor who is seeking additional payment and/or a time extension in connection with the contract *shall* give notice to the engineer of the event or circumstance giving rise to that claim. That notice shall be given as soon as practicable, but no later than twenty-eight days after the contractor knows or should know of the circumstances giving rise to the claim. Notice must also be given under any other provision of the contract upon which the contractor relies.[2] Sub-Clause 20.1 provides that the contractor who fails to comply with any of the notice provisions shall not be entitled to additional payment or a time extension with regard to its claim. Moreover, the employer is discharged from all liability in relation to any claim for which the contractor failed to give adequate notice.

Assuming the contractor has properly submitted the prescribed notice, it is then required to provide further details of the amount and/or a time extension sought. Within forty-two days after receiving the initial notice or the more detailed statement, the engineer shall respond with approval, partial approval or denial of the claim, and provide detailed comments. If either party (employer or contractor) disagrees with the engineer's determination, then pursuant to Sub-Clauses 20.2 (Appointment of the Dispute Adjudication Board) and 20.4 (Obtaining Dispute Adjudication Board's Decision), the party must refer the dispute, in writing, to the pre-appointed Dispute Adjudication Board (DAB), unless the parties have not agreed to the employment of a DAB.

The complete denial of a claim due to a failure to give timely and proper notice may seem particularly harsh. This requirement, however, will be interpreted in accordance with the law applicable to the contract, with varying results. For example, in the case of *Obrascon Huarte Lain SA v. Her Majesty's Attorney General for Gibraltar* [2014] EWHC 1028 (TCC) (16 April 2014), the court, applying the law of Gibraltar,[3] acknowledged the notice requirement as a prerequisite to further pursuit of a claim, but broadly construed what constitutes notice. It must simply be recognizable as a "claim." There is no particular form required by Clause 20.1. Rather, it permits any claim made by notice in writing to the engineer, describing the event or circumstance relied on, and intending to give notice of a claim for extension and/or for additional payment under the contract or in connection with it. The employer bears the onus of proof to establish that the notice was not given in a timely manner. A different result may have been reached if, for example, Florida law applied. Florida courts strictly apply notice provisions. *See Marriott Corp. v. Dasta Const. Co.*, 26 F.3d 1057 (M.D. Fla. 1994). Thus, in a case where Florida law applies, the arbitrator cannot "rewrite a contract" or "substitute their judgment for that of the parties" to relieve one of the parties from the resulting hardship of an improvident bargain. *Id.* at 1067-68 (finding the contractor's failure to provide adequate notice of the cause and amount of delay, in writing, within seven days of commencement of the delay was a bar to obtaining a time extension for completion); *see also Tuttle/White Constructors, Inc. v. State, Dept. of General Servs.*, 371 So. 2d 1096, 1096 (Fla. 1st DCA 1979) (denying contractor's claims for additional compensation over and above the contract price due to the contractor's failure to adhere to contract requirement that contractor notify architect in writing no more than twenty days after the occurrence of the event giving rise to the claims).

New York is another jurisdiction that strictly construes these contract requirements. *See Tug Hill Const., Inc. v. County of Broome*, 270 A.D.2d 755, 757 (N.Y.A.D. 3 Dept. 2000) (where the contract between the contractor and the county required the contractor to comply strictly with its notice of claim requirements. The court dismissed the contractor's claim for reimbursement on summary judgment for failure to comply with the notice provision).

The Dispute Adjudication Board

The appendix to the Red Book contains the general conditions for a dispute adjudication agreement. It is

Dispute Resolution Under the FIDIC, continued

the tripartite agreement between the employer, the contractor and the DAB member(s) that creates the DAB referenced in Sub-Clause 20.4. The DAB may consist of one or three members, three being the default number if no agreement can be reached on one person. Among other things, the DAB members must be impartial and independent. In addition, the members have ongoing duties during the pendency of the project, including visiting the site periodically and especially during times of critical construction. These requirements contemplate that a well-informed DAB will render more accurate decisions.

Assuming the parties have agreed to a DAB, any disputes must be referred to it in accordance with Sub-Clause 20.4 of the Conditions of Contract. There is no specified time period for this requirement; however, once the referral has been made, the DAB has eighty-four days to give its reasoned decision as to the claim, stating that it is given under Sub-Clause 20.4. The decision is binding on both parties, who shall "promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award." If either party is dissatisfied with the DAB's decision, then either party may, within twenty-eight days after receiving the decision, give notice of its dissatisfaction to the DAB and the other party.[4]

Amicable Settlement

Upon notice of dissatisfaction, Sub-Clause 20.5 provides that the parties shall attempt to amicably resolve the matter, but arbitration may be commenced fifty-six days after the notice of dissatisfaction, even if there is no attempt at amicable settlement. The fifty-six-day period that must pass before commencing arbitration is considered a "cooling off" period[5]; however, the parties may agree to waive this time limit and proceed directly to arbitration.

III. Conditions Precedent to Arbitration

Notice and Evaluation by the DAB

Pursuant to Clauses 20.1-20.8, any contractor's claim for additional time or money is substantively arbitrable. Even so, arbitration is intended as the last resort, and failure to observe the prerequisites to arbitration may mean that the contractor with an otherwise arbitrable and meritorious claim will be barred from pursuing it.

Obtaining an Engineer's Determination under Sub-Clause 20.1 for a claim arising under the contract for costs or time is the first step. It is much less clear whether

Dispute Resolution Under the FIDIC, continued

the claim must then be submitted to the DAB for a decision before arbitration can be commenced. This lack of clarity is attributable in part to the difference in wording between Sub-Clause 20.2, which provides in part "Disputes shall be adjudicated by a DAB in accordance with Sub-Clause 20.4 . . ." and the wording of Sub-Clause 20.4 itself, which provides in part "If a dispute . . . arises . . . either Party may refer the Dispute in writing to the DAB . . ." (emphasis added). There have been conflicting decisions on this issue from different courts. For purposes of this introductory article, however, the simplest approach would seem to be that the DAB procedure is a condition precedent if the parties have required the establishment of the DAB, and especially so if the DAB is in existence. An analysis of the law applicable to the arbitration on this point before proceeding directly to arbitration should always be undertaken.

Treating certain procedural steps as conditions precedent to arbitration is not unique to *FIDIC*, and in the event that one of the parties asserts a defense that the other party failed to abide by a condition precedent, it is the arbitrator who decides whether the claim is procedurally arbitrable. *Union Independiente de Trabajadores de la Cerverceria India v. Cerverceria India, Inc.*, --- F. Supp. 2d ----, 2014 WL 352931 (D.P.R. 2014) (*UITCI*); *Bechtel Constr., Inc. v. Laborers' Int'l Union*, 812 F.2d 750, 753 (1st Cir. 1987) (finding that failure to submit grievance to committee, as mandated by grievance procedure, is "a classic question of 'procedural arbitrability' for the arbitrator to decide"); *El Dorado School Dist. No. 15 v. Continental Cas. Co.,* 247 F.3d 843 (8th Cir. 2001) (arbitrator deciding construction dispute pursuant to contractual arbitration clause had authority to settle threshold procedural arbitrability question, as to effect of breach of contract's requirement that disputes be submitted in writing to architect before proceeding to arbitration).

If the arbitrator concludes that a party failed to fulfill certain conditions precedent, then the claim can be dismissed or stayed pending completion of the conditions precedent. In *UITCI*, a non-*FIDIC* case, a labor dispute arose between a labor union and the employer. The labor union's claim that one of its members was wrongfully terminated was substantively arbitrable pursuant to the governing collective bargaining agreement, but was not procedurally arbitrable until the union completed a three-step grievance process. According to the collective bargaining agreement, if one of the parties did not comply with the grievance process, it was understood that the other position prevailed and was considered a final solution to the dispute.

Eventually, the labor union submitted a claim for arbitration. In response, the employer argued the claim was not timely referred to arbitration under the grievance process and was, thus, not arbitrable. The arbitrator agreed and dismissed the claim. Dissatisfied, the union filed suit in the United States District Court for Puerto Rico to vacate the award.

The court, bound by the "exceedingly high threshold for judicial interference with arbitral awards," deferred to the arbitrator and upheld the award. *UITCI,* 2014 WL 352931, at *7. Neither the arbitrator nor the court ever reached the substance of the claim. The labor union lost for failure to fulfill a condition precedent.

Use and Effect of Prior Clause 20 Proceedings

The use and effect of the DAB decision is also largely at the arbitrator's discretion. While Sub-Clause 20.6 (Arbitration) provides that the arbitrator has "full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB, relevant to the dispute," the arbitrator is under no obligation to do so.[6] The arbitrator may simply choose to enforce the decision of the DAB.

For example, in ICC Case 16948/GZ, the sole arbitrator was requested to review a DAB's fourth binding, but non-final, decision to enforce two prior DAB decisions, decisions number two and three.[7] In these decisions, the DAB granted the claimant a monetary award in connection with its performance of the contract. The respondent noticed dissatisfaction with the award, but did not pay the specified sums. Thereafter the claimant obtained the fourth decision from the DAB that confirmed the prior two awards and required immediate

Dispute Resolution Under the FIDIC, continued

payment with interest. Again, the respondent noticed dissatisfaction and failed to pay. The claimant sought to arbitrate the fourth DAB decision only.

During arbitration proceedings, the respondent argued that the arbitrator was required to evaluate the underlying second and third DAB decisions in deciding whether the respondent breached the contract in ignoring the fourth DAB decision. The arbitrator rejected this argument. Instead, the arbitrator confined his inquiry as to whether the respondent breached Sub-Clause 20.4 by failing to pay in accordance with the DAB's fourth decision. Accordingly, the fourth decision did not involve the merits of the second and third decisions, only that two binding DAB decisions existed, which the respondent ignored.[8] The propriety of the second and third awards did not obviate the respondent's breach.

A tribunal in Singapore reached a different result when evaluating a similar matter under the UNCITRAL model law.[9] In *CRW Joint Operation v. PT Perusahaan Gas Negara (Persero) TBK* [2011] SGCA 33, the DAB decided that the respondent PGN owed claimant CRW Joint Operation (CRW) several million dollars on CRW's claim. PGN disagreed with the result and submitted a notice of dissatisfaction (NOD). Simultaneously, CRW invoiced PGN for the sum of the award. PGN rejected the invoice on the basis that the DAB decision was not final under the *FIDIC* Conditions of Contract since it had filed a NOD. CRW sought enforcement through arbitration. At arbitration, PGN argued the arbitral panel was required to review and revise the DAB decision pursuant to Sub-Clause 20.6, but the panel refused the request, confirmed the DAB award and ordered immediate payment. In response, PGN filed an application in the Singapore court system to set aside the award.

Eventually the matter reached the Singapore Court of Appeal, which set aside the arbitral award under Article 34(2)(a)(iii) of the UNCITRAL Model Law on International Commercial Arbitration.[10] The court opined that by issuing a final award that upheld the DAB decision without going into the substantive merits of the parties' dispute, the majority members ignored the clear wording of Sub-Clause 20.6 and "fundamentally altered the terrain of the entire proceedings" by limiting the deliberations to the narrower issue of enforcement. PGN suffered real prejudice as it was deprived of its contractual right to have the DAB decision reviewed unless it incurred additional time and costs in commencing fresh arbitration proceedings on the merit of CRW's claims.

One of the difficulties the claimants encountered in the foregoing matters was enforcing the binding non-final decisions rendered by the DAB. In the ICC matter, the claimant obtained a separate and fourth DAB decision that the respondent breached the contract by failing to pay the awards of the second and third DAB decisions. These and other decisions caused considerable uncertainty.

Giving Effect to Binding but Non-Final DAB Decisions

On 1 April 2013, *FIDIC*'s Contracts Committee and its special advisors (the Committee) issued a special Guidance Note to Users of the 1999 Conditions of Contract, specifically to provide clarity to arbitral tribunals on the issue of whether a party may refer to arbitration the failure of the other party to comply with a DAB decision that is binding but not final. The Committee noted that:

> International arbitral tribunals have been divided over whether, in the event of a failure to comply with a DAB decision issued under Clause 20 of the Red Book, which is 'binding' but not 'final', the failure itself may be referred to arbitration, without Sub-clause 20.4 [Obtaining Dispute Adjudication Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] being applicable to the reference.

The Committee, through a series of contract modifications recommendations, clarified that a party should be able to proceed to arbitration without the need for the extra step the claimant took in ICC Case 16948/GZ, *supra*. In this regard, the Committee suggested modifying Clause 20 in the following manner:

> a. Sub-Clause 20.4 - Insert the following as a new penultimate paragraph:
>
> 'If the decision of the DAB requires a payment by one Party to the other Party, the DAB may require the payee to provide an appropriate security in respect of such payment'
>
> b. Replace Sub-Clause 20.7 in its entirety with:

Dispute Resolution Under the FIDIC, continued

> 'In the event that a Party fails to comply with any decision of the DAB, whether binding or final and binding, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 20.6 [Arbitration] for summary or other expedited relief, as may be appropriate. Sub-Clause 20.4 [Obtaining Dispute Adjudication Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply to this reference.'

In addition to the *FIDIC*-suggested modifications, the parties may modify further the form contract on this issue.

IV. The Arbitration Sub-Clause

The *FIDIC* form Sub-Clause 20.6 (Arbitration) is set forth in full above. In summary, it provides that any DAB decision that has not become final and binding shall be finally settled by international arbitration. It contains these other specific requirements:

- The arbitration shall be conducted pursuant to the Rules of Arbitration of the International Chamber of Commerce;
- There shall be three arbitrators appointed in accordance with the Rules;
- The arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language];
- The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB;
- The Engineer can be called as a witness and give evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute (the DAB members cannot be called);
- Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the DAB;
- Any decision of the DAB shall be admissible in evidence in the arbitration;
- Arbitration may be commenced prior to or after completion of the project. The obligations of the Parties, the Engineer and the DAB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

Under the ICC Rules and most other rules, the arbitration is commenced by the filing of the Request for Arbitration, the payment of an initial fee and the naming of the claimant's proposed party-appointed arbitrator. Thereafter, the steps to a hearing and award follow a pattern similar to most domestic U.S. arbitrations. A detailed description of the actual arbitration process is beyond the scope of this article.

V. Possible Modifications to the Arbitration Clause

The *FIDIC* Arbitration Clause is quite general in that it simply requires arbitration of disputes in accordance with the ICC Rules. These Rules set forth the procedures to be followed; however, some suggested modifications are set forth below. Such modifications are specifically provided for by the Guidance for the Preparation of Particular Conditions, which is provided with the Red Book and other forms.

Arbitral Administrative Bodies and Rules

Although the standard form Sub-Clause 20.6 refers to the ICC as the default body for arbitration, the parties are free to select any arbitration administrative body. Some of the more common choices are the London Court of International Arbitration (LCIA), International Centre for Dispute Resolution (ICDR), China International Economic and Trade Arbitration Commission (CIETAC) and the Singapore International Arbitration Centre (SIAC). It is also possible to have an ad hoc or unadministered arbitration. In this case, the arbitration shall be conducted in accordance with the arbitration law of either the seat of the arbitration or the location of the construction project.

There are numerous factors to consider in selecting an arbitration's administrative entity, e.g., cost; however, almost all such entities allow the parties to select their arbitrators. In practice, an ICC arbitration is traditionally linked with *FIDIC* and is the most common framework for resolving *FIDIC* disputes.

Qualifications of Arbitrators

Neither *FIDIC* nor the ICC and most other administrative bodies set forth the requirements for an arbitrator beyond impartiality and prohibiting a sole arbitrator or the chair of the tribunal from having the same nationality as one of the parties. *FIDIC* encourages its national member associations to create national lists

Dispute Resolution Under the FIDIC, continued

of mediators, adjudicators and arbitrators. France, Germany, Hungary, Poland, Romania, Slovakia, South Africa, the United Kingdom and Japan have each assembled a list, but *FIDIC* disclaims any responsibility for each country's list. France, Germany and Japan's lists were each prepared in accordance with adjudicator guidelines that reflect the *FIDIC* Guidelines for National Lists.[11] Thus, the parties to the contract should specify the desired qualifications of their arbitrator, e.g., at least fifteen years of experience in construction law, language abilities, nationality, etc. A benefit of arbitration is the expertise of the arbitrators. The specific expertise can and should be specified.

Seat of Arbitration

Sub-Clause 20.6 does not include a reference to the seat of the arbitration. The contract should specify a seat, i.e., where the arbitration will be held. That seat should be in a country that is both neutral and will provide a sound and reliable legal mechanism for enforcing or vacating awards. Various states of the United States, England, France, Belgium and Switzerland are among the popular choices. A contract that specifies a seat of arbitration in Florida will be subject to the Florida International Arbitration Act, Chapter 684, Florida Statutes, or Title 9 U.S.C. Chapter 1k, depending on whether an action to enforce, modify or vacate the award is brought in state or federal court.

Choice of Law & Language

The choice of language for the arbitration is by default the language for communication articulated under Sub-Clause 1.4 and is incorporated by reference into Sub-Clause 20.6.

With regard to the applicable substantive law that will govern the contract, the choice is often the law of the place where the contract is being performed. The parties should consider, however, choosing a well-developed and accessible applicable law. In this regard, many contracts specify the law of Switzerland, England or New York State regardless of where the contract is being performed.

Exchange of Information

Generally speaking, the rules for exchange of information will be governed by the ICC or other designated administrative organization. These rules allow the arbitrator to order the exchange of documents; other forms of discovery such as interrogatories and depositions are seldom allowed. Moreover, *FIDIC* Sub-Clause 20.6 does not address the exchange of information. The parties should specify the type and amount of discovery they believe is necessary; otherwise, there may be too much or none.

Time Limits

Sub-Clause 20.6 does not make any specific reference to a deadline for commencing arbitration after the expiration of the amicable settlement period. In theory a party that is dissatisfied with a DAB decision, and has no real interest in arbitrating the decision, could file a notice of dissatisfaction and do nothing until the end of the contract. Thus, the parties may find it desirable to include a deadline by which the parties should refer the dispute to arbitration.

Consolidation

The ICC Rules allow the consolidation of different arbitrations if the parties agree. The parties should address what, if any, consolidation is acceptable.

Conclusion

Arbitration is really the only viable means of dispute resolution for international construction projects. In order to make the process as fast and as fair as possible, the parties should consider the modifications to Clause 20.6 described above. If a dispute arises, strict compliance with the notice requirements and the conditions precedent arbitration assure the fastest and most favorable resolution.

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Dispute Resolution Under the FIDIC, continued

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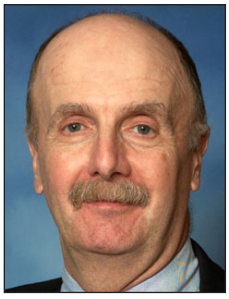
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Endnotes

1 The *FIDIC* contract forms use terms that are in common usage in the United Kingdom. In general, these terms are self-explanatory, e.g., owner = employer.

2 There are numerous such clauses, e.g., 8.4, Extension of Time for Completion; Pg. 2 Notice of Force Majeure; however, a full discussion of the provisions of the contracts under which both the contractor and the employer are entitled to assert a claim is beyond the scope of this article.

3 The parties to a *FIDIC* contract are free to designate the applicable law. In the absence of a designation, the arbitrator will apply conflicts of law principles. This usually results in the law being the law of the jurisdiction where the construction was performed.

4 Note: once the DAB renders a decision in the prescribed manner, e.g., reasoned, etc., the decision is binding. The decision does not become final if one of the parties files a notice of dissatisfaction.

5 *See* Enforcing of Binding But Not Final DAB Decisions: The Impact of ICC Case 16948/GZ, *Construction Law International*, 7 No. 3 Construction L. Int'l. 7.

6 *See Id.*

7 *See Id.*

8 "This obligation to pay the sums on the basis of Sub-Clause 20.4 [. . .] is completely independent from whether or not the amounts decided by the DAB in Decisions Nos. 2 and 3 will be later reversed, revoked or confirmed."

9 According to its website, UNCITRAL Model Law is designed to assist states in reforming and modernizing their laws on arbitral procedure so as to take into account the particular features and needs of international commercial arbitration. It covers all stages of the arbitral process from the arbitration agreement, the composition and jurisdiction of the arbitral tribunal and the extent of court intervention through to the recognition and enforcement of the arbitral award.

10 (2) An arbitral award may be set aside by the court specified in article 6 only if: (a) the party making the application furnishes proof that: (iii) the award deals with a dispute not contemplated by or not falling within the terms of the submission to arbitration, or contains decisions on matters beyond the scope of the submission to arbitration, provided that, if the decisions on matters submitted to arbitration can be separated from those not so submitted, only that part of the award which contains decisions on matters not submitted to arbitration may be set aside.

11 http://fidic.org/node/812#sthash.cqMmyqS1.dpuf

Section Scene

2014 International Law Section Retreat

Boca Raton Resort & Club
19-21 September 2014

Luis Konski and Ricardo Puente

Peter and Sandy Quinter

Peter Quinter and Philip Buhler

Yine Rodriguez and Alvin Lindsay

Rafael Ribeiro and Laura Reich

Peter Quinter, Katherine Sanoja and Kristin Drecktrah

Jose Maria Carneiro da Cunha and David Prather

Sandy Quinter, Lucius Smejda and Gail Mizel

Mariela Malfield

Peter Quinter and Clarissa Rodriguez

Eddie Palmer

Peter Quinter and Marta Colomar

Gerald Cope

Regan Kruse and Raul Fernandez

Alice Ferot and Rafael Ribeiro with baby Valentina

Diego Handel

Regan Kruse and Arnie Lacayo

Arnie Lacayo and Family

Luis Konski and Caryl Ben Basat

Drafting the Claim Memorial, from page 8

commences before a detailed design is finalized.

There are several variations of the design-build method. The most pure form is known as the engineer, procure and construct contract, or EPC delivery method. Under EPC, the owner generally contracts with a single party, the EPC contractor, to engineer, procure and construct the entire project. The purpose of this method is to allow an owner to contract with one entity that is solely responsible for everything from soup to nuts. The EPC contractor generally must deliver a turnkey project at a fixed cost according to specific nameplate or other requirements, including clear bonus and damage provisions relating to construction time and project performance guarantees.

The EPC contractor is responsible for the development and construction of the entire project and for any defects or delays that may arise. EPC contracts are typically used for large-scale industrial projects, such as power plants, petrochemical plants and large infrastructure projects. EPC contracts may contain performance guarantees that, if satisfied, entitle the EPC contractor to a performance bonus. EPC contracts may also impose harsh penalties on the contractor, in the form of liquidated damages, for every day a project is delayed beyond the scheduled completion date.

Another variation of the design-build method that is widely used for large infrastructure international projects is known as the build-operate transfer, or BOT method. Under this method, the owner, typically a foreign governmental agency, contracts with a group of investors that obtain the necessary debt and equity financing, build the project, operate the facility for a specified period of time (usually until the debt is repaid or the investors see a return on their investment) and then transfer the facility back to the governmental entity. The critical controlling document in a BOT system is the concession agreement, whereby the governmental entity transfers to the investor group the rights to operate the facility.

Damages for Delay

On construction projects, "time is money" is not just an expression. Given the significant resources of personnel, equipment and materials that are devoted to large projects, as well as the future revenue stream that cannot be realized until completion, delay is always the enemy. Even a small delay in designing or supplying a component of the project can have a significant ripple effect that causes further delays downstream and may ultimately affect the final completion date, thereby causing increased cost and lost revenue.

To avoid delay and to incentivize project leaders and contractors to complete the project by the scheduled completion date, most construction contracts include a liquidated damages provision that sets forth a specific liquidated amount of damages that the contractor will have to pay for each unexcused day of delay attributed to it. Liquidated damage provisions are generally enforced by arbitration panels provided that the stipulated damages bear a reasonable relationship to the actual damages likely to be incurred as a result of the delay, and are not a penalty.

Where liquidated damages are grossly disproportionate to actual damages, depending on the applicable law, an arbitration panel may strike the clause as unenforceable. Owners frequently assert liquidated damages claims against contractors whenever a project is not completed on time. Contractors often blame any delay on the owner, others or events of force majeure, or they might argue that the liquidated damage amount is effectively a penalty that should not be enforced.

The Project Schedule

Given the importance of timely completion as it relates to potential damage allocations, arbitration panels will be especially interested in the as-planned and as-built project schedules in any dispute over liquidated damages. Every project is planned by assigning each construction activity a duration as well as links to and from activities that must be completed before or that cannot be completed until after the activity at issue is completed. The activities are set forth on a GANTT scheduling chart that shows through a series of horizontal lines the planned or actual work activities and how they run through a "critical path." A good project schedule will specify every significant task necessary for completion and will organize project tasks in a rational,

Drafting the Claim Memorial, continued

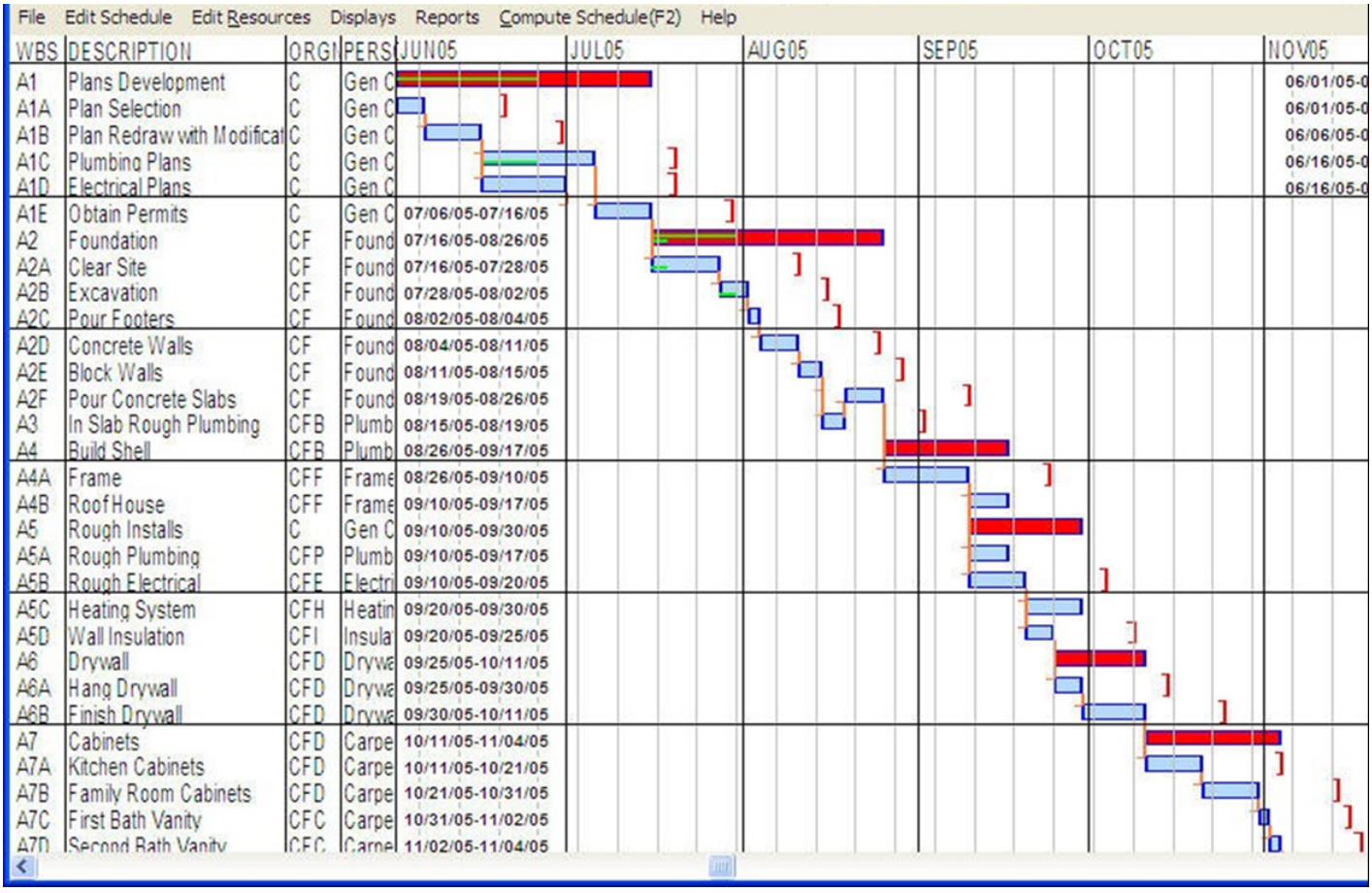
orderly sequence with an estimated time for completion of each task.

In disputes over delay and delay liquidated damages, arbitrators often rely on a critical path method (CPM) analysis for understanding and allocating delay. Thus, often the claim memorial will need to explain a CPM delay analysis.

By comparing the planned project schedule with various actual or as-built schedules revised during the course of the project, it is possible to determine the party responsible for various delays, whether those delays caused delay to the critical path and whether the party somehow accelerated or mitigated the delay. Simply put, in a CPM analysis, if a delay affects the critical path without being mitigated, the party responsible for the delay may be liable for liquidated damages. Conversely, a party is typically not subject to liquidated damages for any delay that does not impact the project's critical path or the project's ultimate completion date.

Notably, in construction disputes, a project's completion date usually does not refer to the final completion date, or the date the project is 100% complete. Instead, the crucial date is often what is called substantial completion. This term is usually defined in the project contracts, and it often specifies the date on which the project's major components are to be functional and the facility is ready to be used for the owner's intended purpose, with only a punch list of items necessary for final completion. Substantial completion is consistent with the doctrine of substantial performance. Therefore, once a contractor has achieved substantial completion, an owner generally may not impose liquidated damages or terminate the contract for default and refuse payment.

Final completion usually entitles a contractor to the final payment, often 10% of the total contract price or another amount that has been retained by the owner (thus called "retainage"), to ensure the contractor will



Typical Gantt project schedule showing critical path in red

Drafting the Claim Memorial, continued

finish the punch list. Upon final completion, the owner and the contractor usually waive and release all claims against each other, including any mechanics' liens that the contractor (or its subcontractors) may have been entitled to bring.

Float

A CPM analysis incorporates the key concept of float. Float refers to the amount of time a task can be delayed without affecting the next activity behind it or the critical path itself. Unless the contracts provide otherwise, float is usually considered to be owned by the project, meaning that any party may rely on float to avoid causing subsequent delays. If the total float is negative, the critical path is affected and the party causing the delay may be liable to the owner and subject to liquidated damages.

Force Majeure

Even if a delay impacts the critical path, the party that caused the delay may not be liable if the cause of the delay was not reasonably foreseeable or the result of some fortuitous event. Construction agreements frequently include a *force majeure* provision, which can free a party from liability for delays that are the result of extraordinary events. The doctrine of *force majeure* recognizes that a party should not be held accountable for events outside of its control. As such, although they are often referred to as "acts of God," *force majeure* events are usually defined by the contract documents and may or may not include any event that the contractor cannot control, not just limited to war, weather or insurrection.

Types of Critical Path Delay

Taking these concepts into account, construction law generally recognizes five different categories of delay:

1. Inexcusable delay is a delay caused by an event within a contractor's or a supplier's control and entitles an owner to recover damages against the contractor or supplier.
2. Excusable delay is a delay caused by an event beyond the control of any of the parties and likely entitles a contractor or a supplier to an extension to complete the required task.
3. Compensable delay is a delay caused by an event within the owner's control but outside a contractor's control, entitling the contractor to damages.
4. A concurrent delay occurs when both the owner and a contractor cause concurrent, independent critical path delays, which entitles the contractor to an extension of time.
5. An apportioned delay occurs when independent delays occur sequentially rather than concurrently.

Understanding the type of delay at issue is important because it defines a party's potential claims, liability and defenses.

Other Typical Construction Claims

In addition to delay-related claims, there are several other types of claims that are characteristic of many construction disputes. Owners may assert claims against contractors and suppliers relating to design, manufacturing, construction and installation defects. A defect claim may arise when a component is not designed, built or installed in accordance with the specifications established in the contract or fails to

Drafting the Claim Memorial, continued

perform or operate as intended.

Owners may also assert warranty claims against contractors or suppliers relating to component defects and failures. Construction agreements typically include a warranty provision whereby contractors and suppliers warrant, for a specified period of time, that their work is free from defects or deficiencies; that the work was designed, built and installed in accordance with the contract specifications; that all applicable laws were followed and permits obtained; and that the facility or equipment will operate as intended. If a defect arises during the warranty period, an owner will file a warranty claim with the responsible party. The party may accept the warranty claim and remedy the defect or conclude that it is not responsible for the defect and deny the claim. If the owner believes the warranty claim was wrongfully denied, it may raise this claim in the arbitral proceeding.

Finally, disputes may arise regarding a party's scope. A party's responsibility and scope of work are defined by the applicable agreements. A large construction project will typically involve numerous parties and multiple interconnected, interrelated agreements. While a subcontractor or a sub-supplier may be responsible for a discrete portion of the work, a prime contractor may have responsibility for the overall project. The larger the project and the more parties involved, the greater the likelihood that gaps, or tasks that are not within the scope of work of any party, can arise. Gaps in scope typically give rise to disputes between the owner, contractor, supplier, subcontractors or sub-suppliers regarding which party is responsible.

Gathering the Evidence

As discussed, construction arbitrations are highly factual disputes, and the outcome will often depend on a few key facts. Thus—after developing a thorough understanding of the project, the parties, the delivery system and the schedule—the next step in drafting a claim memorial for a complex international construction arbitration is gathering and organizing the evidence.

Evidence can mean a wide variety of information. Claim memorials generally focus on three categories: (1) written or documentary evidence; (2) testimonial evidence, including witness statements or affidavits and any deposition testimony; and (3) expert evidence (reports and statements or affidavits). Depending on the universe of available evidence, the process of identifying and organizing the evidence often should begin months in advance.

Written Evidence

The availability of written evidence will depend on the applicable institutional arbitration rules, the agreement between the parties and the identity of the parties. The AAA Construction Arbitration rules explicitly provide for the exchange of documentary evidence and a process by which a party may request documents from opposing parties. Rule R-24 states that the tribunal may, "[a]t the request of any party or at the discretion of the arbitrator," direct the "production of documents and other information." Similarly, the ICDR rules provide that the tribunal "may order the parties to produce documents, exhibits, or other evidence it deems necessary or appropriate" and that upon the request of a party, the tribunal may "require a party to make available to another party documents in that party's possession . . . that are reasonably believed to exist and to be relevant and material to the outcome of the case." In contrast, the ICC rules do not explicitly provide a mechanism to request relevant documents, and ICC arbitrations generally provide less leeway for engaging in U.S.-style discovery.

The parties, of course, are free to agree on a procedure for the exchange of documentary evidence. The parties' willingness to engage in document discovery will be dependent, in large part, on the identity of the parties. Large international construction arbitrations will often include parties from both common law and civil law jurisdictions. Parties from common law jurisdictions, where broad document discovery is the norm in civil litigation, are accustomed to providing all relevant documents. Extensive document discovery, however, is not common in civil law jurisdictions, and parties from these jurisdictions are typically reluctant to agree to a voluntary document discovery protocol. In any event, all construction disputes will likely involve similar categories of project documents.

Drafting the Claim Memorial, continued

The most important documents are the governing contracts. The number and type of contracts will depend on the project delivery system. A dispute may involve consortium agreements executed between the owner and its consortium partners or the contracts between the owner and the prime contractor or any of the other parties involved. The applicable contracts are essential because they define the parties' scope of work and responsibilities, include all relevant project deadlines and the consequences of failing to meet those deadlines, define the warranties and warranty periods, explain any guarantees that must be met and any performance bonuses that may be earned and define the conditions for payment. In short, the contracts are the primary source of each party's rights and obligations and, therefore, are the starting point for determining the claims and defenses that may be asserted.

Emails can be very valuable in developing claims and defenses. Construction job sites are becoming more and more technologically advanced. Key players communicate via email regarding all facets of a construction project. Contractors in the field electronically submit reports regarding design, manufacturing or installation defects. Large amounts of data and information regarding the project, including complex project schedules, are created and stored electronically on computers. This data may reveal crucial facts, such as defects in the manufacturing or installation of key components, the cause of equipment failures or the party responsible for critical path delays. Even if an arbitration panel will not permit discovery of internal email from another party on the project, experience has shown that contractors and suppliers are often very candid in email communications among themselves regarding design or manufacturing defects. So, communications received from the other side should always be thoroughly reviewed.

Other types of project documents are often beneficial to use and explain in the claim memorial. Expert CPM analysis, if done properly, can be hard to overcome in demonstrating and assigning responsibility for delay. Contractors also typically submit to the owner and other project members weekly or monthly reports detailing daily construction activities. These reports are useful to determine whether a party had knowledge of a particular event or which party performed tasks that may have caused the defect at issue.

Root cause analyses are typically performed by manufacturers or equipment suppliers to determine factors that may have contributed to a component's defect or failure. Thus, a root cause analysis can be critical in identifying the party responsible for any alleged defects.

Photos or videos taken of damaged equipment, mishandled materials or improper installation can serve as powerful evidence of a party's culpability for alleged defects.

Throughout the course of a project, an owner is likely to submit warranty claims, pursuant to the contract's warranty provisions, to the equipment suppliers relating to defects experienced with the supplied equipment. Equipment suppliers might then respond with a detailed analysis and statement of why they will or will not accept the claim. Thus, a supplier's response to a warranty claim can provide valuable information when responding to defect claims asserted by an owner in arbitration.

Finally, job cost reports showing the total spent on each aspect of the project and the original bid documents initially submitted to the owner can be helpful in arguing scope, delay and defect disputes.

The importance of statutes, codes and case law should not be overlooked when drafting a claim memorial. Thus, the governing contract's choice-of-law provision is crucial. Statutes and case law of the chosen jurisdiction will frequently supplement a party's rights and obligations beyond what is found in the written contracts. For example, a number of states have "prompt payment statutes," which impose higher interest rates on owners that fail to pay contractors timely. Among other things, case law can also be relevant when determining whether a delay qualifies as a *force majeure* event, the meaning and effect of substantial or final completion, whether parties should

Drafting the Claim Memorial, continued

be held jointly and severally liable for a defect and the amount and types of damages that may be recovered.

Testimonial Evidence

A second category of evidence that should be considered when drafting a claim memorial is testimonial evidence, including witness statements and deposition testimony. As with documentary evidence, the availability of testimonial evidence is largely dependent on the applicable arbitration rules and the parties' agreements.

The AAA Construction Arbitration rules authorize the tribunal to order depositions of witnesses. Rule R-32 provides that an "arbitrator or other person authorized by law to subpoena witnesses or documents may do so upon the request of any party or independently." The rules also state that the AAA's Procedure for Large, Complex Construction Disputes shall apply to all cases administered by the AAA under the Construction Arbitration rules on which a party's claim is at least US$1 million, exclusive of interest, attorney's fees and costs. These procedures provide that the tribunal "may order depositions of . . . such persons who may possess information determined by the arbitrator to be necessary to a determination of the matter."

In ICC arbitrations, however, the use of written witness statements (which explain witnesses' testimony in detail) rather than deposition testimony is far more common. Parties from common law jurisdictions are generally more receptive to the use of depositions while parties from civil law jurisdictions are more accustomed to presenting testimonial evidence through witness statements and affidavits.

Obtaining testimonial evidence from third-party witnesses can present great challenges in the arbitral context. Arbitration is a consensual process, and the tribunal's authority over a proceeding is based on the parties' agreement to submit to the tribunal's authority. Therefore, depending on the procedural power vested to a tribunal through the situs of the arbitration, a tribunal may lack the power to compel non-parties to appear. A party seeking to depose a third-party witness can try to obtain and enforce a subpoena through local courts. Counsel should also act cautiously when contacting third-party witnesses and should be aware of whether any such communications need to go through counsel.

Whether the arbitration provides for depositions or witness statements or both, the first step is to identify the witnesses who will be deposed and the witnesses who will submit statements. Understanding the documentary evidence is essential to this task. Documentary evidence is used to identify who was involved in the different stages of the project; who was involved in the design, manufacturing and installation of key components; and who may have been responsible for project delays.

Once potential witnesses have been identified and testimony from either depositions or witness statements has been received, that testimony, or appropriate excerpts, should be incorporated into the claim memorial. Deposition testimony from an opposing party's witness can be highly persuasive, especially if quoted word for word rather than merely summarized and potentially slanted.

Key testimony includes any admissions by the opposing party showing that it is responsible for the alleged defects or delays, that it failed to fulfill its obligations under the contracts and that it had knowledge of alleged defects and delays and failed to raise the issue in a timely manner. Such powerful testimony should be highlighted and well explained. Witness statements

Drafting the Claim Memorial, continued

from a party's own witness should be incorporated and used to fill gaps where there is no other evidentiary support for a statement or claim.

Expert Evidence

A third category of evidence to be included in a claim memorial is expert evidence. Construction disputes concern highly technical, complex issues. While arbitration panel members may have experience with construction projects generally, they often lack the technical background necessary to understand the complexities of the specific issues presented. Thus, expert evidence is often a critical and effective tool to help explain these issues in a manner that is easy to understand.

A claim memorial in a construction dispute can incorporate one or many different experts. In defect or warranty claims, experts can provide root cause analyses on construction defects or equipment failures. Experts are also used to perform CPM delay analysis in order to determine whether a delay event impacted the project's critical path, who caused the delay and whether any delays were mitigated by subsequent action.

A market or industry expert may be necessary to explain the economic parameters and viability of a project. A weather expert may be needed to prove *force majeure* claims for delay caused by severe weather, whether it be a blizzard at the project site or a typhoon delaying a ship bringing materials from China. Finally, parties typically rely on damages experts to quantify the costs of alleged defects and delays.

Bundling the Evidence in a Claim Memorial

Once all of the evidence has been gathered and organized, the last step is to compile the evidence in a claim memorial. Arbitrators often refer to these large, detailed documents in their bound format as "bundles." An effective claim memorial tells a clear, coherent and compelling story. The claim memorial should distill the case to its essential elements and present a logical and persuasive narrative. The arbitrators will read the memorial before the final hearing, and the parties will likely be limited to using the evidence set forth in their memorials. It is important to do claim memorials right, especially in the complex international construction dispute.

Know and Tell Your Themes

As in any dispute, the narrative always should be developed through the use of themes. A theme is a unifying or dominant idea, an overarching concept that captures the essence of the dispute and shapes the manner in which the reader perceives and interprets the narrative and the factual evidence. A theme should capture the reader's attention. Parties can easily get so caught up in the ins and outs of a technical argument that they lose sight of the big picture. The best themes are the simplest. In a construction dispute by an owner against a contractor alleging construction defects, a theme can be as simple as stating that the owner knew all along what was being provided. The owner was on site every day of construction, fully aware of the contractor's actions, never raised any issues and therefore cannot now complain that the contractor failed to adequately perform its job. The theme should be woven throughout the narrative.

The Introduction and the Conclusion: Your First and Last Impressions

The introduction is perhaps the most important section of the claim memorial. The narrative and themes are first presented in the introduction. It is the first substantive section the tribunal will read. Thus, the introduction must provide a coherent summary of the party's narrative and the core themes. The introduction should also provide the roadmap of the entire argument that will be presented in the claim memorial. It should brief the reader on what to expect in subsequent sections and train the reader to interpret the later arguments through the narrative and themes presented in the introduction. Claim memorials can be very long, and the arbitrators may lose focus as they work through dense, complex issues. In deciding whether the introduction is effective, the author should ask: If the introduction was the only section the panel were to read, would the arbitrators understand the narrative and the themes the client seeks to convey? Much like the introduction, the conclusion should bring the reader back to the central narrative and themes and

Drafting the Claim Memorial, continued

tie everything together.

Headings Help Tell the Story

Section headings are used to develop the narrative and the themes. Headings should be argumentative rather than just simple titles, and they should capture the essence of the story. Effective headings guide the readers through the narrative and provide the readers a place to pause and regroup. Each section should remind the readers where they are, where they are going and how the current section fits into the overall narrative. Keep in mind that the table of contents, composed of the section headings, is also one of the first things the arbitrators will read. The table of contents, therefore, serves as a roadmap for the readers and should convey the entire narrative.

Proving the Narrative

The narrative is told through the evidence (documentary, testimonial and expert) that has already been compiled and organized. The claim memorial should cite this evidence so that it will support every factual allegation or argument asserted.

Testimony. A direct quote can be quite persuasive; it is less persuasive to make an unquoted general statement citing only to a Bates number or the page/line of a deposition. A tribunal member, when presented with multiple memorials that are each several hundred pages in length, will likely not take the time to find and read documents cited merely by Bates number. Similarly, footnotes typically appear in smaller type, are hard to read and are often skipped over by the reader. In order to be effective, the claim memorial should provide in the main body of the text the exact quote from a key document or the pertinent question and answer from the deposition. As technology advances, it has become easy (and it is very persuasive) to include an image or a call-out from the actual document or transcript itself.

Exhibits. When selecting exhibits to include in the claim memorial, the author must not only consider how the exhibit supports the client's arguments, but must also think ahead to the final hearing. Procedural orders often provide that an exhibit that is not attached to a claim memorial may not be used later at the final hearing. Thus, the author must determine how a potential exhibit will advance the opening and closing statements and/or if it will be necessary to cross examine or rebut an opposing party's witness.

Demonstratives and graphics are a powerful means of conveying the narrative and supporting the key arguments. Again, these can be placed right in the body of the memorial itself. A well-developed graphic will simplify complex, technical issues and convey the relevant themes. In construction disputes, demonstratives can include anything from images of a CPM analysis; photos of construction defects; and call-outs of job cost reports, personnel sheets and diagrams or schematics. Demonstratives capture the reader's attention and keep the reader focused on the central narrative.

Expert Evidence. Finally, a claim memorial should make effective use of expert evidence. Expert reports should not simply be appended to the end of the memorial; they should be integrated and incorporated into the body of the text. The memorial should not simply repeat the information in the expert report, especially given that expert reports usually address highly technical, complex issues that may be difficult to understand. Rather, the expert reports should be used to reinforce the narrative told by the other evidence or to fill in gaps by providing support for allegations not otherwise supported by other evidence, and they should be presented in an understandable way. In short, expert evidence should be used to reduce complexity and to enhance the credibility of the narrative.

Taking It to the Next Level With Electronic Briefs

An increasing trend in arbitration today is the use of e-briefs or electronic memorials. An e-brief is an electronic version of the memorial that contains hyperlinks to each exhibit cited. The reader simply has to click on the link and a copy of the exhibit cited appears on the screen. A memorial can hyperlink to documents, deposition transcripts, expert reports, pictures and even videos.

Although paper can be easier to review on the first

Drafting the Claim Memorial, continued

read, e-briefs can be extremely effective tools in complex construction arbitrations. As discussed, construction arbitrations are highly factual disputes and often consist of hundreds of thousands (and at times millions) of pages of documentary, testimonial and expert evidence. Allowing the arbitrators to access the key documents instantly through a hyperlink can enhance credibility and better explain the issues.

Conclusion

The claim memorial is one of the most important aspects of the arbitration process. A well-drafted claim memorial offers a party an opportunity to frame the issues through a clear, educational and persuasive narrative. By distilling the case to its essential elements, a strong claim memorial presents a roadmap that will lead the tribunal to the desired destination. In short, an effective claim memorial should make what may be a complex and highly technical dispute into one that is understandable and accessible to the arbitrators.

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Strategies to Ensure Megaproject Success, from page 10

there should be no reason why a reliable resource-loaded Level 3 CPM schedule cannot be produced.

Delaying schedule development until after EPC contract execution or, at a minimum, failing to tie meaningful compensation to the preparation and agreement of a Level 3 schedule after the EPC contract award, is a fundamental mistake and is one of the most prominent causes of excessive cost increases and schedule delays. Project participants cannot possibly know with any degree of reliability when a project will be completed and how much it will cost without a robust, logic-tied and fully resource-loaded Level 3 CPM schedule. The schedule places required parameters around all critical activities, particularly engineering, which drives equipment and material purchases and deliveries to site construction resources for incorporation into the work. Without a resource-loaded CPM schedule, logic tied, completed and agreed prior to the execution of the EPC contract or very shortly thereafter, the project will drift off course, costing more time and more money with costly disputes.

Prioritizing project costs over early schedule completion is also a critical decision. While to some extent the question of whether a project is driven either by cost or schedule is a false choice, for both go hand in hand as time is money and vice versa, megaprojects are often susceptible to a belief in the "need for speed." The data demonstrates that aggressive schedule targets that are outside the norm for projects of similar size and complexity will doom the project to failure. By one measure, the cost index, which is a measure of CAPEX (capital expenditure), competitiveness for schedule-driven upstream oil and gas projects was 142% of the industry average.[13] Making matters worse, not only did the enormous increase in project costs result in project completion rates that were, in fact, slower than average, 59% of these schedule-driven projects suffered from severe operational problems. Just as in driving an automobile, excessive speed kills.[14]

Two other crucial decisions must be made at or before the completion of FEL 3; namely, the type of contract to be used (lump sum, cost reimbursable or mixed execution) and the owner's management structure for the project.

Strategies to Ensure Megaproject Success, continued

Contract Structure—Lump Sum, Cost Reimbursable or Mixed?

Whether the project should be executed on a fixed-price/lump-sum or cost-reimbursable basis causes much debate, with proponents of each contract type entrenched in their view that one approach is superior to the other. From experience, however, pure lump-sum or cost-reimbursable structures are fundamentally flawed, leading to excessive costs, delays and claims.

The reasons for this are straightforward. Lump-sum contracts place nearly all performance and associated financial risk on the contractor, which causes inflated project pricing to account for the contractor's risk premium, as the contractor seeks to cover all risks, some of which are only marginally within its control, or the contractor fails to price risks correctly, causing it to take an aggressive claims strategy during project execution to save itself from financial ruin.

Pure cost reimbursable contract structures, which place all cost risk on the owner, are even more susceptible to extreme cost overruns and schedule delays since the contractor has little or no incentive to control key production and productivity metrics; namely, engineering and construction. Engineering efficiency is expressed in terms of a productivity factor, which is a measure of the number of payroll hours planned to produce engineering deliverables, such as P&IDs, Issued for Construction drawings and bid packages divided by the payroll hours actually spent on the activity. Construction efficiency is likewise measured in terms of a productivity factor, expressed in terms of labor hours (work effort) planned to complete a defined construction activity divided by the payroll hours spent on the activity.[15]

By their nature, engineering and construction management are as much art as science, and engineers in particular seem always to find a way to build a better mousetrap. In highly competitive labor markets, such as in the U.S. Gulf Coast, the EPC industry suffers from a high turnover of engineering and management personnel who are often lured to other projects for higher pay. Data published by Independent Project Analysis confirms that the turnover of management personnel "destroys megaprojects."[16] Engineering turnover causes duplicative efforts as one engineer is tasked to review (and inevitably change) and complete the work of his or her predecessor. Contractors have low incentive to manage this process because the owner pays for every engineering hour spent. Not only does this increase the cost of engineering, but it has a far more devastating impact on downstream activities, including delays to the preparation of bid packages, which, in turn, delays the receipt of material requisitions and the placement of purchase orders, all of which delay the receipt of vendor data required to complete detailed design, causing cascading delays and inefficiencies to material deliveries to the project site and field installation.

Once upstream engineering delays hit field construction activities, the results are often catastrophic. Without a firm grasp of a facility's design early in megaproject development, it is neither possible to purchase the correct amount of materials for delivery in the right sequence, nor is it possible to assess and apply the labor and supervision resources needed for installation. This results in exceedingly low labor productivity as work is driven in piecemeal fashion by what materials are available on a given day rather than on a strategic plan that focuses resources on critical-path activities. With site labor that often reaches 10,000 to 20,000 people, costs increase exponentially. In cost-reimbursable contracts, the contractor often takes the position that these expenditures are to the owner's account. Not surprisingly, more often than not, the owner disagrees, resulting in massive disputes.

A better contract structure is mixed execution, where the contractor assumes productivity and production risks in the activities it controls. One tried and true approach is the unit rate contract, where the contractor is paid for a given unit of output, such as tons of steel fabricated, linear feet of pipe or square yards of concrete installed. In a unit rate contract, the owner pays for actual physical production, leaving to the contractor the means and methods of the rate at which production is achieved. Unit rate contracts also place on the contractor the obligation of either finding sufficient experienced construction personnel, particularly welders, pipe fitters

Strategies to Ensure Megaproject Success, continued

and electrical/instrumentation specialists, to perform the work or training unskilled labor to meet these demanding trades.

Unit rate contracts work well for the construction scope, including construction management, of the project, but are not suitable for the engineering and procurement scopes because there will be tens of thousands of engineering deliverables and hundreds of bid packages for a megaproject, making the administration of a unit rate structure infeasible. For engineering and procurement activities, it is best to enter into separate lump sums. A contractor experienced in designing the facility for which it has been engaged should know with great precision how many engineering hours are required to execute the work. Moreover, if the FEL 2 and 3 phases are properly completed, the contractor will know equipment and material pricing, having received firm commitments from suppliers and subcontractors to build up its detailed costs estimate for a cost-reimbursable contract or lump-sum price. Moreover, if compensated on a fixed-price basis for the engineering and procurement scopes, the contractor is incentivized to manage productivity and production aggressively and to obtain favorable material and equipment pricing and delivery terms after EPC contract execution because the contractor will be permitted to pocket any savings, increasing margin while benefiting the project.

Project Management Structures—Project Management Company or Project Management Team?

Apart from the major international and national oil companies, whose project development organizations are often larger and more experienced than the largest EPC contractors, most project owners are confronted with the vital question of how it will manage the EPC contractor.

Project Management Company Structures Are Not Optimal.

For megaprojects utilizing an EPC design/build fixed-price contract delivery structure, experience teaches that a project management company (PMC) will not be successful in managing the EPC contractor and will increase the price of the project either at the outset through an increased risk premium placed in the EPC bid or through claims asserted by the EPC contractor during project execution. This is particularly true if the selected PMC performed the FEED and/or is supplying technology packages to the project. The EPC contractor will perceive the PMC as being biased (hiding mistakes in the FEED) or as a competitor who cannot be trusted. Moreover, adding a layer of overhead costs between the owner/decision maker and the EPC contractor will decrease open communication and cooperation while increasing costs. Open, cooperative and timely communication between the owner and the EPC contractor is critical to the successful execution of a megaproject.

PMC management structures are also problematic in publicly financed projects in countries, typically in Latin America, with an Office of Public Comptroller, called the *Contraloría*, which is tasked with ensuring that public monies are spent with proper care and prudence.[17] The independent governmental entity of the *Contraloría* exists in many Latin American countries and imposes personal financial liability on individuals who are found not to have spent public funds with appropriate care. In light of the personal obligations of diligence in the discharge of duties when public monies are used, it is inevitable that the national oil company owner's management personnel will feel compelled to be personally and substantially involved in directly managing the EPC contractor. Such direct involvement conflicts with the essential purpose of a PMC. Owners engage PMCs in order to delegate management responsibility, placing decision making and project success in the hands of an experienced management company. Delegating such responsibilities to a PMC without interference from the owner's personnel, however, poses practical and legal challenges in countries that have *Contralorías*. Complicating matters further, those countries with *Contralorías* typically have another independent institution called the Office of the Inspector General or *Procuraduría General*. Where the *Contraloría* has the power to sanction individuals financially, the *Procuraduría* has the power to put people in prison for failing to oversee the correct functioning of a government agency or activity, such as managing a national oil company megaproject.[18] When megaprojects turn into mega-wrecks, the owner's management personnel often become concerned about investigations by the *Contraloría* and *Procuraduría,* which

Strategies to Ensure Megaproject Success, continued

influences decision making.

Because a PMC must be given the right to discharge its contractual obligations to manage the EPC contractor without interference from the owner, and because the owner's personnel cannot, under applicable law, delegate their personal obligations of oversight and diligence, the PMC management structure is especially troublesome for state-sponsored national oil company projects in countries that have the independent institutions of the *Contraloría* and *Procuraduría*.

Project Management Teams Are a Better Solution.
Megaprojects that oversee the EPC contractor through an integrated Project Management Team (PMT) consisting of owner and either internally staffed (if possible) or externally hired management specialists, have better outcomes than those managed through PMCs. In general, the functions of a PMT must include five core positions: (1) project manager; (2) project controls manager with CPM schedule expertise; (3) legal/commercial manager; (4) procurement/contract specialist; and (5) operations representative. Each lead executive from the core team must work collaboratively throughout the development of the project, with the project manager having final decision-making authority at the project level, subject, of course, to the supervision of the owner's corporate senior executives and board of directors.

Integrated PMTs are more likely to have a clear understanding and alignment between business and project objectives—a must for megaproject success. For example, when there is very good team understanding of a project's business and project objectives, the success rate for megaprojects increases to over 50%. Where objectives are somewhat or very unclear, the success rate drops below 10%.[19]

Pitfalls of Project Execution—What Are the Major Risks and How Can They Be Mitigated?

Apart from selecting an EPC contractor with the experience, systems and personnel capable of undertaking a megaproject, the largest risks confronting the owner typically include: (1) failure to have a fully developed baseline Level 3 CPM schedule that takes into consideration, among other things, jobsite climatic conditions, labor availability, union activity and other site-specific issues; (2) failure of the owner to comply timely with the obligations established in the EPC contract, such as procuring long lead equipment items within the time allocated in the schedule; (3) owner-instructed scope changes after EPC contract execution; and (4) owner interference with the EPC contractor's means, methods and techniques of engineering, procurement and construction.

1. The proper development and updating of the Level 3 schedule is critical to success.
As discussed above, significant effort must be expended to ensure the Level 3 CPM schedule is as fully developed as possible prior to the execution of the EPC contract. It is industry best practice for the owner and contractor to agree to a baseline Level 3 schedule prior to contract award. If that is not possible, the owner should tie financial compensation to the agreement of the schedule. It is also industry best practice to re-baseline the schedule approximately six months after the commencement of the project once engineering is around 35% to 40% complete and bulk material arrival dates become more precise. Having a baseline schedule at the time the notice to proceed is given (or very shortly thereafter) is critical to the success of the project, as the contractor's performance should be measured and delays mitigated against a properly prepared and regularly updated schedule. Without an agreed baseline, the project will inevitably drift into delay, and disputes will undoubtedly arise as to the cause of delay. This can only be avoided by having an agreed Level 3 CPM schedule.

2. The owner must quickly assess and respond to impacts to the project's critical path.
Once the EPC contract is executed, the contractor will be sensitive to any delays caused by the owner's failure to adhere timely to its contractual obligations. Not all delays, however, entitle the contractor to more time or compensation. Rather, only delays having an impact on the current critical path of the project will entitle the contractor to additional time and perhaps compensation if concurrent delays are not present.[20] The only way the owner can properly assess claims of delay is by way of a properly prepared and updated Level 3 schedule. Assessments of delay and whether additional

Strategies to Ensure Megaproject Success, continued

compensation is due to the contractor must be done timely using current project data. How the owner contemporaneously assesses and responds to issues of delay will have a significant impact on maintaining a cooperative relationship with the EPC contractor, which is vital to project success. Applying industry best practices to the assessment of delay is crucial, and the owner will need to employ experienced personnel capable of quickly applying the technical, commercial, contractual and legal considerations involved in assessing claims of delay and disruption.

3. After contract award, the owner must resist the temptation to add or delete project scope and exercise discipline in HAZOP and engineering model reviews to prevent introduction of preferential change through the HAZOP and model review process.

Assigning an owner operations representative to the owner team tasked with the responsibility to ensure that the design of the facility is fit for purpose is essential. With that said, the owner must avoid adding or deleting scope after the contract award and must exercise discipline to limit comments in hazard and operability analysis (HAZOP) reviews to only those that truly represent risks to personnel and equipment. Introducing change after the contract award will provide an easy excuse to the selected EPC contractor to seek costs and schedule relief. Moreover, it is all too easy for the EPC contractor to exploit an owner's temptation to instruct change as a way to increase profits, particularly if the lump-sum price was competitively bid and taken at low margin. The same holds true for reimbursable-cost contracts. If costs rise substantially above the as-awarded budget, the contractor will seek to place blame on the owner's instructed scope changes and/or interferences to deflect potential liability for the cost increases and schedule delays.

Introducing owner preferential change in design through the HAZOP and engineering model review exercises are activities highly susceptible to owner-induced change. While the standard definition of a hazard and operability study includes a review to ensure efficient operations,[21] extreme care must be taken by the owner's senior leadership to resist the introduction of changes that are not associated with life, safety and environmental considerations. HAZOP and model reviews must always be completed prior to issuing engineering drawings for construction, for any change introduced by the owner after that point may be used as a basis for the contractor to secure additional compensation and, if the critical path of the project is impacted, additional time.

4. After contract award, the owner cannot control how the contractor performs the work.

As with owner-instructed changes, the temptation to direct the work of the EPC contractor must be resisted. Interference with the contractor's means, methods and techniques will be used to justify additional compensation and/or time. If the interference is pervasive, this may be used by the contractor to assert that the owner converted a lump-sum contract to a reimbursable cost contract.

Because a contractor has control over the means and methods of how it performs the work, the owner should only seek to influence the design and sequencing of activities during FEL 2 and 3, including its review of the Level 3 schedule prior to the execution of the EPC contract. If sequencing changes are instructed after the contract is signed, the contractor may claim interference and seek additional compensation and time.

Of particular importance is the sequencing of systems turnover for purposes of commissioning and start up of a facility. While it might seem premature to consider how a facility will be turned over to the owner many years into the future, it is not. Knowing which systems are needed in logical order to commence commissioning and start up will have a significant impact on the project's critical path. A contractor must clearly understand which systems must be turned over to the owner in proper sequence in order to plan the work from the start. A contractor's failure to do so will result in false critical paths, rendering the Level 3 schedule useless.

Conclusion

Pre-contract planning through the FEL process is critical to project success. Undertaking the FEL phases thoroughly, independently and without bias or preconceived result is essential. Once a final investment decision is made, the EPC contract awarded and the notice to proceed given, the "golden rule" of good faith and fair dealing must

Strategies to Ensure Megaproject Success, continued

prevail, for no megaproject has ever been successfully completed without the good faith and full cooperation of all parties involved.


D. DELMAN

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Endnotes

1 Projects in excess of US$1 billion are considered "megaprojects."

2 Merrow, Edward, *Oil and Gas Industry Megaprojects: Our Recent Track Record*. Oil and Gas Facilities, April 2012 (http://www.projectcontrolsonline.com/portals/0/primvera-com-au/Oil-and-Gas-Industry-Megaprojects--Our-Recent-Trac.pdf). The failure rate of oil and gas megaprojects has increased rapidly and dramatically. In spring 2006, the failure rate was reported to be 56%. *See Presentation at the Engineering & Construction Conference, 2006 by Independent Project Analysis* at page 36 (http://www.ecc-conference.org/past-conferences/2006/Katrina%20to%20the%20Majors_Merrow-Martin.pdf). In April 2011, the failure rate increased to 65%. *See Why Large Projects Fail More Often, Megaproject Failures: Understanding the Effects of Size*. Presentation at the American Association of Cost Engineers, 20 April 2011 by Independent Project Analysis (http://www.aacei-ncs.org/Downloads/AACEI_-ASME_-_Why_Large_Projects_Fail_Final.pdf).

3 Report for the American Petroleum Institute by IHS Global Insight, Oil and Natural Gas, Transportation Infrastructure Status, Trends & Economic Benefits, December 2013 (http://www.api.org/~/media/Files/Policy/SOAE-2014/API-Infrastructure-Investment-Study.pdf).

4 For a diagram example of the FEL process, *See* http://www.fbd.com/Images/Interior/services/frontendloading.pdf

5 Briel, Eric and Westney, Richard, "Built in Bias Jeopardizes Project Success." *Oil & Gas Facilities*, April 2013 (http://www.westney.com/wp-content/uploads/2014/04/Built-in-Bias-article-SPE-as-published.pdf).

6 *Id.*

7 http://www.ipaglobal.com/Services/Individual-Capital-Project-Services/FEL-2

8 American Association of Cost Engineers Recommended Practice 59R-10, *Development of Factored Cost Estimates-As Applied in Engineering, Procurement, and Construction For the Processing Industries* (http://www.aacei.org/non/rps/59R-10.pdf).

9 Subsequent to the development of the Lang Factor in the 1940's (http://prjmgrcap.com/langfactorestimating.html), there have been various improvements and permutations. *See, e.g.,* American Association of Cost Engineers Recommended Practice 59R-10, *Development of Factored Cost Estimates-As Applied in Engineering, Procurement, and Construction for the Processing Industries* (http://www.aacei.org/non/rps/59R-10.pdf).

10 http://www.ipaglobal.com/Services/Individual-Capital-Project-Services/FEL-3

11 A Level 3 CPM schedule is defined as the first level providing a meaningful critical path network that can be displayed. The American Association of Cost Engineers requires that a Level 3 schedule communicate the interfaces between key workgroups and disciplines, providing enough detail to identify critical activities. The Level 3 schedule is used by the contractor and owner personnel to monitor, manage and control all aspects of the work. *See* American Association of Cost Engineers Recommended Practice 37R-06 Schedule Levels of Detail as Applied in Engineering, Procurement and Construction (http://www.aacei.org/non/rps/37R-06.pdf).

12 http://www.ipaglobal.com/Services/Individual-Capital-Project-Services/FEL-3

13 Merrow, Edward, *Oil and Gas Industry Megaprojects: Our Recent Track Record*. Oil and Gas Facilities, April 2012 (http://www.projectcontrolsonline.com/portals/0/primvera-com-au/Oil-and-Gas-Industry-Megaprojects--Our-Recent-Trac.pdf).

14 *Id.*

15 American Association of Cost Engineers, Recommended Practice 73R-13, Establishing Labor Productivity Norms, 14 January 2014.

16 *Why Large Projects Fail More Often, Megaproject Failures: Understanding the Effects of Size*. Presentation at the American Association of Cost Engineers, 20 April 2011 by Independent Project Analysis (http://www.aacei-ncs.org/Downloads/AACEI_-ASME_-_Why_Large_Projects_Fail_Final.pdf) slide 22.

17 For example, in the county of Colombia, Article 267 of the Colombian Constitution establishes that "fiscal control is a public function to be exercised by the Office of the Comptroller General of the Republic, which oversees the fiscal management and administration of individuals or entities that handle funds or assets belonging to the nation." *See also,* Act 610 of 2000.

18 *See, e.g.,* http://www.procuraduria.gov.co/

19 *Why Large Projects Fail More Often, Megaproject Failures: Understanding the Effects of Size*. Presentation at the American Association of Cost Engineers, 20 April 2011 by Independent Project Analysis (http://www.aacei-ncs.org/Downloads/AACEI_-ASME_-_Why_Large_Projects_Fail_Final.pdf) slide 34.

20 American Association of Cost Engineers International Recommended Practice No. 29R-03, Forensic Schedule Analysis (http://www.aacei.org/non/rps/29R-03.pdf). "In order for a claimant to be entitled to an extension of contract time for a delay event (and further to be considered compensable), the delay must affect the critical path. This is because before a party is entitled to time-related compensation for damages it must show that it was actually damaged. Because conventionally a contractor's delay damages are a function of the overall duration of the project, there must be an increase in duration of the project."

21 *See* Hazard and Operability Studies, IEC 61882:2001.

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Offshore Wind Projects, from page 13

A Multi-Contract Strategy

Initially, the traditional engineering procurement and construction/turnkey contract model was adopted for offshore wind farms as developers tried to wrap the construction risk,[8] save that typically the contract for the supply of wind turbines was excluded and dealt with under a separate turbine supply agreement.

Although there are notable exceptions, this model has now largely been abandoned for offshore wind farms because it placed too much risk on the main contractor in circumstances where the capital costs of the developments and (to date) modest returns are too daunting to be carried by one supplier. Instead, the market is dominated by conservative funding and multi-contract packages, which allow risk to be spread across the design, manufacture and installation chain, and with costs and liabilities being shared in proportion to ownership percentages.

The future is likely to see more consolidation but still a multi-contract strategy aimed at capturing three themes:

1. To allocate to the developer ultimate contractual responsibility for project-specific and interface risks, recognising the market reality that the developer is not only the most appropriate party to bear these risks but in the present market conditions, the only one that can;
2. To employ directly and separately the turbine supplier, civil and electrical contractors, etc., and typically on a target cost model; and
3. To "overlay" these arrangements with mutual alliance obligations to drive better management of technical interfaces, construction schedules and construction risks on a project-wide basis.

Although more streamlined contracting might be expected as the industry matures, the ever increasing size of the wind farms is such that few developers will be willing to put all their eggs in one turbine supplier basket. The market is also likely to become more challenging for new entrants as there are less identifiable clients to engage with and no guarantees that those clients that are targeted by suppliers will win the business.

The Interface Risks

Plainly, the more complex the network of contracts and other relationships,[9] the more interfaces exist and greater project management is required. As well as harmonising the general interfaces that are a familiar feature of conventional power projects,[10] particular care is required in respect of grid access and consistency and compatibility of commissioning and testing regimes for an offshore wind project. For example, the UK OFTO regime has introduced a system whereby the transmission of offshore generated electricity is to be performed by a different legal entity to the generation of the power. This brings legal challenges to the construction as the wind farm owner will want a fully open grid connection when the first phase of the wind farm is open. It is unlikely to be capable of fully testing until the whole wind farm is open, which could take four or five years. The contractor building the grid connection is unlikely to agree to such a long testing period, so, instead, the compromise is a regime that tests the connection before the whole farm is complete.

Leaving aside the increased risk of delay, a multi-contract multi-party project is more exposed to the risk of compatibility errors between designs, particularly given the number of physical and/or electrical interfaces where the tolerances are small.[11] To manage this increased interface risk, developers would be well advised to invest more time upfront in defining clearly the design obligations[12] and developing a matrix of responsibility covering the contractual and functional responsibilities across interfaces. As well as contractual mechanisms, there are a number of practical tools developers might consider such as design cells/co-locating the design teams from different suppliers and setting up special divisions for dealing with interface issues with recourse to, and under the supervision of, a technical advisor from an independent experienced contractor.

Further, during the construction phase, the interfaces raise safety issues between the EPC contractor responsible for installation and transportation of wind turbines from the dock to the site and the turbine supplier who delivers to quayside, yet then oversees and supervises installation.

Offshore Wind Projects, continued

Pushing the Technical Envelope

Despite the subsidies on offer as European governments strive to achieve their pledges to cut carbon emissions, "bet the company" scale losses continue to be incurred by those who have been brave enough to venture into these uncharted waters.[13] Reports of the financial consequences of unproven technology are plentiful, so it is little wonder that developers are reluctant to try anything different. Even proven technology can be problematical when applied in a novel way; however, as demonstrated by the grouted connections applied to monopiles and transition pieces in offshore wind farm foundations on the back of years of successful application in oil and gas platforms.[14] It gave the industry impetus to seek alternative and innovative solutions, and led to a revised design standard,[15] but the jury is still out.[16]

Through bitter experience, those whose fingers have been burned are beginning to appreciate the need to change if they are to realise the investment of their early ventures. For example, technical failures of the transformers and some generator failures owing to manufacturing problems and salt corrosion plagued the Horns Rev project in Denmark, culminating in all eighty nacelles being returned to shore to replace the transformers and generators (after about 75,000 maintenance trips over an eighteen-month period). The operator learned: "What has been gained is a more realistic attitude to the costs of creating and running such a project, an attitude that will affect [the] appraisal of bids for the planned expansion."[17]

The high cost of energy remains one of the biggest challenges of offshore wind. At £150 per MW hour, it is currently offset by government subsidies. If the £100 per MW hour target for 2020[18] is to be achieved, the market can expect to see more competition and bigger turbines (with taller towers, bigger nacelles and longer blades). The present standard in operation in Europe is for 3MW turbines, but it looks set to double: 6MW and even 7MW turbines are under development and are currently being tested and committed to the next generation of wind farms.[19]

There will also be greater reliance on unproven design and technology, where the stakes can be high.[20] Gravity base[21] and even floating foundations[22] are being explored in preference to the traditional monopile and tripod foundations used in shallower water.

A New and Different Approach to Planning and Programme

The traditional model for offshore oil and gas projects has been to perform as much of the work as possible onshore with prefabricated construction, pre-assembly and commissioning. The reality of offshore wind farms, however, is that the limitations at staging ports and the financial and logistical constraints of the massive specialist vessels[23] required lead to significant activities being performed offshore, with transportation between the ports and the field (the array).

Further, specialist vessels are in short supply, and demand is high. Traditional offshore vessels cannot deal with the weight and/or size of the foundations, and the deeper water offshore excludes conventional jack-up vessels. In addition, there are operational limitations that determine choice of vessel so that there will be a number of considerations that will be as important, if not more determinative, than cost: jack-up or anchored vessel, a self-propelled or towed vessel, the crane capacity, deck capacity, transit speed, etc.

This has created a market with long lead-in times and expensive daily charges. Sequencing is crucial, and a "just in time" procurement philosophy will not work because there is no realistic possibility of "storming the plan" to make up for delays offshore, and the costs of vessels sitting idle are unsustainable. Accordingly, in practice, the critical path on a wind farm project can be quickly, and comprehensively, overturned if the vessels are not available or if the work does not proceed in time to feed the vessels. For example, if some of the design of secondary steelwork is not complete by the time the vessels are mobilising, the lesser of two evils may be to complete that work at the quayside, or even offshore, rather than leave the vessel in harbour in good weather.

Before construction work begins, the ability to influence the cost of an offshore wind project is greatest at the beginning, but it requires a paradigm shift in favour of greater upfront investment (in terms of both time

Offshore Wind Projects, continued

and money) in surveys and planning. In particular, a host of detailed data on the geological, geophysical, meteorological, oceanographic and environmental conditions is required to be able to price and allocate the risks, obtain appropriate permits and plan activities with realistic timeframes.

Weather Risk

Weather is one of the standard risks recognised in any construction project, but the enormity of its impact on the construction of an offshore wind farm is frequently underestimated, and parties often give insufficient thought to how to measure and assess the impact of a weather event.

By definition, offshore wind farms are situated to exploit windy weather conditions, but most of the activities during the construction, commissioning and maintenance phases require low winds and calm seas. Should wave height and/or wind speed exceed certain limits, it is not safe to operate the vessels that install the turbines and platforms, and lay cables. Further, any attempt to install during such conditions risks damaging the assets, especially the submarine cables that connect individual turbines within an array to an offshore substation platform (the inter-array cables) and the high-voltage cables between the offshore substation and the onshore distribution grid (the export cables).

Plainly, adverse weather is outside the control of either the contractor or the developer. Typically, contracts for offshore wind projects will provide for the contractor to have factored into its proposal a number of adverse weather days based on statistical data—perhaps including an additional safety margin—and thereafter allocate the weather risk to the developer in much the same way as for a conventional onshore project.

Of course, it is also possible for the contract to allocate the entire weather risk to the developer by not including any allowance for statistical bad weather, but if this approach is adopted, the parties ought to consider prescribing in the contract how to deal with any float that has been built into the programme based on statistical adverse weather. In particular, if the adverse weather days should fall below expectations based on statistical data, is that unused float to be available to the contractor to offset other delays for which the contractor is responsible, or is it to be available to the project generally, or is the developer entitled to some form of reimbursement?

What has proved more elusive for offshore projects is implementing the provisions entitling the contractor to reimbursement of its costs and an extended completion date in the event that the prescribed number of adverse weather days is exceeded. The weather in harbour can be very different from the conditions being experienced at sea, and this is likely to become even more common as wind farms are built farther offshore and in deeper waters. Even within the array itself, turbines are spread across a wide area within which the wind speed and wave height can vary considerably. Yet in assessing entitlement, measurements of weather conditions have traditionally depended on the data recorded at a single meteorological mast and/or a number of wave buoys scattered across the array. As such, the reported conditions may not be representative of the conditions being experienced by those working at other locations in the array.

Contracts for offshore wind projects need to provide for who should have authority to decide when the operational limits of the equipment are exceeded by the weather conditions that are, in fact, being experienced. Potential candidates might be any of the following: the captain of the vessel, the marine warranty surveyor, a representative of the contractor, the developer. If it is to be a joint decision, the contract draftsmen need

Offshore Wind Projects, continued

to consider how to provide for the practicalities of convening the decision makers, circumstances where they may not hold a unanimous view and whether the decision is to be binding (temporarily or finally) or reviewable (and if so, when and by whom).

Ground Risk

Awareness of seabed conditions will be a significant factor in defining the cable route, influencing the choice of foundation design, the layout of the turbines and the risk assessment for installation activities. But it includes more than simply the geological characteristics; data also needs to be collated for existing submarine cables and pipelines, shipwrecks, unexploded ordinances and other waste.

An offshore wind farm contract will contain certain assumptions about the seabed based on the results of the surveys carried out by the developer, which the contractor will be expected to have taken on board, but beyond that, the risk of "unforeseen" ground conditions will be borne by the developer. Any approach resembling sporadic core samples that may be appropriate for onshore projects will not provide sufficient information for work offshore. A combination of geophysical surveys[24] and geotechnical surveys[25] is required in order to collate the key information, but even then, the participants must appreciate that they will only have a feel for the scope of the ground risk. The seabed is a vast and dynamic environment.

Permitting

Onshore planning issues remain a real problem. The fact remains that the power from wind farms comes ashore in locations where obtaining planning permission for a substation and cabling can be difficult. Further, permits are required not only for the wind turbine generator systems themselves, and there is the additional complications of (a) working in delicate (and protected) ecosystems and (b) identifying the competent permit authority and applicable law depending on the location of the asset and/or work for which a permit is required.

An inadequate understanding of environmental risks in offshore construction projects,[26] together with the tension between the public authorities' desire to protect the offshore environment and the developers' desire to exploit it, has led to unrealistic permit conditions, which developers then try to pass on to contractors; for example, noise restrictions during foundation installation works, moratoria on any construction activity offshore during fish spawning periods, etc.

Submarine cabling is a particular challenge. In particular, permits require submarine cables to be laid at certain depths and in a certain geographic position. Developers may seek to replicate these requirements in the specification and then impose a standard obligation upon the contractor to comply with the specification and/or a fitness-for-purpose obligation. In circumstances where movements of the seabed cannot be controlled, however, and variations in hard and soft ground conditions may impede cable burial, experienced contractors will be reluctant to agree to do more than use prescribed cable-laying vessels and tools and to apply recognised cable-laying methodology. Even then, the standard of the obligation is likely to be qualified to use "reasonable endeavours," and the contract will need to provide flexibility for variation if it later transpires that the specified tools and/or methodology are not sufficient to be able to achieve the depths or positioning of cables required by the permits/specification.

Remoteness of Damage: The Impact of a Lost Season

Because so many of the construction and installation activities on an offshore wind farm project are dependent on seasons or permit windows, the question of how to deal with weather and ground risk in the contract and the programme becomes more acute when delays push activities into the winter months (thereby impacting productivity) and/or outside the periods covered by environmental permits (when work must be suspended).

The developer may have accepted the risk of activities encountering adverse weather, without also accepting the disruption risk when other causes of delay (unrelated to weather) push activities into more challenging seasons. This is particularly so where the contract has been priced on the basis of a certain number of adverse weather days using statistical data for summer months but the delays have shifted the activities into winter

Offshore Wind Projects, continued

months where there are likely to be increased adverse weather days. In such circumstances, who bears the risk for the difference between the statistical data for the summer and the winter months? Would the position differ depending on whether the cause of the delay is attributable to the contractor or the developer or a third party?

In *South Australia Asset Management Corpn v. York Montague Ltd and Banque Bruxelles Lambert SA v. Eagle Star Insurance Co Ltd*,[27] negligent valuers avoided liability for market fluctuations in property values notwithstanding that those losses were foreseeable in the sense of being "not unlikely" (property values go down as well as up) and had been caused by the negligent valuation.[28] They did so because the House of Lords considered market fluctuations to be outside the scope of the liability that the parties would reasonably have considered a valuer was undertaking.

By analogy, the rationale may be applied to determine the extent to which working in adverse weather conditions is unforeseeable. It is "not unlikely"—indeed, it ought to be foreseeable—that delays pushing offshore activities outside weather and permit windows will lead the project to incur increased losses. Given that weather varies from one year to another, however, and so can be better or worse than the statistical data predicts, might liability be limited to the additional costs relating to statistical adverse weather data on the basis that anything beyond it is not reasonably within the parties' contemplation? Moreover, the further the delay pushes activities into other seasons, the greater the chance that intervening events may break the chain of causation—or at least render speculative any delay analysis seeking to prove it.

Limiting Liability Generally

The value of the contracts on offshore wind projects are such that a claim would be difficult for many of the companies concerned to sustain. Low caps are unlikely to be a solution, however, if external financing is required, as they make the projects unbankable. Accordingly, a balanced and innovative approach is required to give the purchaser real remedies whilst protecting the supplier.

Escaping Liability for Supplier and Subcontractor Defaults

The decision of the House of Lords in *Scott Lithgow Ltd v. Secretary of State for Defence*[29] may provide contractors with some additional protection from the consequences of failures by suppliers or subcontractors. In that case, a subcontractor supplied defective pressure-tight cables for the construction of two submarines. The defect was discovered before completion, but the fact that they needed replacing delayed delivery of the submarines.

The relevant contractual provision related to assessing the effect of delays arising in specified circumstances and included a sweep up of "any other cause beyond the contractor's control." The House of Lords accepted the contractor's argument that a contractual default by its own supplier or subcontractor was not within its control:

> Prima facie it is not within the power of a contracting party to prevent quality breaches of contract on the part of a supplier or subcontractor such as lead to delay. The contractor has no means in the ordinary case of supervising the manufacturing procedures of his supplier. He specified his requirements but has no means of securing that they are met and the circumstances that he may have a claim against the supplier for breach of contract is irrelevant to the question whether delay consequent on the breach was due to a cause within his control. If the contractor failed to stipulate a time for delivery, consequent delay would be his own responsibility, but if he did so stipulate and delivery was late the position would be different . . . . Failures by . . . suppliers or subcontractors in breach of their contractual obligations to [the contractor] are not matters which, according to the ordinary use of language, can be regarded as within [the contractor's] control.[30]

This decision seems surprising, but could apply widely to offshore wind farms because a broad variety of equipment—such as platforms, vessels, inter-array cables, export cables, transformers—is procured from a number of specialist suppliers. Owners may wish to avoid the decision by ensuring that extensions of time or payment of additional costs are not triggered by events "beyond the contractor's control." Contractors, on the other hand, may feel that the more they subcontract, the more protection they will have if

Offshore Wind Projects, continued

the words remain in the contract. If the words do remain in the contract, and contractors rely on them, owners may argue that the decision only applies where the contractor "has no means in the ordinary case of observing the manufacturing procedures of his supplier" and "no means of securing that they [his requirements] are met," and that the contractor did, in fact, have adequate means, and could and should have secured that his requirements were met. It is unclear whether a tribunal would regard the usual provisions for quality control (such as periodic inspection or tests) as taking a particular project outside the "ordinary case."

Incremental Takeover

In a number of respects, offshore wind farms may be viewed as a number of independent projects running in parallel because, subject to the availability of cabling and offshore substations connected to the grid onshore, each turbine is capable of being constructed and commissioned sequentially, and then offered up for takeover as it passes the prescribed tests on completion.

Partial or sequential takeover, in itself, is not unusual in power projects, but what is different in offshore wind projects is the scale: The number of individual power-generating assets in offshore wind farms to be completed can exceed one hundred[31], and each turbine is capable of generating energy on a largely independent basis from the other wind turbines within the project. The contracts need to provide for, and the project will need to administer, the consequences of such an incremental handover of assets without compromising the contractor's continuing obligations (with particular regard to warranties and staggered defect liability periods) and the developer's entitlement to liquidated damages and performance guarantees. The phased reduction in the level of performance bonds and other security, as batches or "strings" of turbines are taken over, also needs to be addressed.

Applicable Law Offshore

The United Nations Convention on the Law of the Sea (UNCLOS) is the starting point for determining which law applies to activities offshore.[32] It divides the sea into various areas, measured from a defined baseline, which usually follows the low-tide line.[33] Most notably:

- The area immediately adjacent to the baseline and extending up to twelve nautical miles[34] out to sea is considered "Territorial Waters," over which the coastal state retains full sovereignty and is free to set laws, regulate use and exploit any resources within its territorial waters.[35]
- Beyond the twelve nautical mile limit, there is a further twelve nautical miles known as the "Contiguous Zone," in which the coastal state can continue to enforce laws in four specific areas: customs, taxation, immigration and pollution to the extent that the infringement began, or is about to occur, within its territorial waters.
- The Exclusive Economic Zone (EEZ) is the area extending from Territorial Waters to a maximum distance of 200 nautical miles[36] from the baseline, over which the coastal state has sole exploitation rights over all natural resources and is entitled to construct artificial islands, installation and structures—thereby including offshore wind farms.

As offshore wind moves farther offshore, more projects will be situated within EEZs. In such circumstances, the extent to which national legislation applies may become a further source of debate, particularly if the legislation does not expressly exclude, or is silent as to, its scope within an EEZ. While parties may overcome some of the uncertainty by providing for the governing law under the contract between them, that may not be determinative in the event of an accident or tortious act.

As far as UK offshore wind farms are concerned, the Housing Grants, Construction and Regeneration Act 1996 (the Act) does not apply. Although the Act applies to contracts for "construction operations" carried out in England, Wales and Scotland, including their territorial waters, significantly, the definition of construction operations is limited to works to structures "forming or to form part of the land," and in *Staveley Industries Plc v. Odebrecht Oil & Gas Services Ltd*,[37] the court held that an offshore project would not be captured by the Act because the seabed is not land. Further, a project will also be exempt from the Act to the extent that its

Offshore Wind Projects, continued

activities fall within the exception:

> assembly, installation or demolition of plant or machinery, or erection or demolition of steelwork for the purposes of supporting or providing access to plant or machinery, on a site where the primary activity is . . . power generation . . . .

Staveley was a first-instance decision, which itself relied on Scottish authority.[38] Further, the exception in the Act has been applied very narrowly.[39] For example, activities such as delamination paint work on an offshore substation might not fall within "assembly, installation or demolition," and design and construction of the meteorological mast might be held to fall outside "a site where the primary purpose . . . is power generation."

Multi-Party Disputes

The dilemma posed by multi-party disputes is inherent in offshore wind farm projects. In practice it is easier to join third parties in court proceedings, but this comes at the price of submitting to a local jurisdiction (which may not be appropriate in an offshore wind farm that extends into an EEZ and involves international players), publicity and loss of party autonomy. The 2012 ICC rules sought to address this by making it easier to join third parties, but in practice, multi-party arbitration does not tend to happen very often.[40]

In theory, multi-party dispute resolution offers efficiency, which is desirable. But in practice, even where court procedures apply or arbitration agreements include consent to consolidation and/or joinder of third parties, there may be good reasons why a contractor may want to exclude its subcontractor from any dispute resolution process with the developer/owner unless there are precise back-to-back provisions and parties of sufficient economic standing at the end of the chain (which is rare).

Conclusion

Analysing the legal issues in offshore wind projects provides as much a development challenge for lawyers as the design and construction of the wind farm is for engineers. This article provides an overview of some of the particular characteristics relevant to offshore wind farms in order to exemplify the need to cast off the shackles of conventional thinking, but it is by no means a complete analysis. The fact is that many legal questions that arise offshore remain uncertain: which law applies, who owns the seabed, taxation, insurance, health and safety, etc. Similarly, the growing body of experience, the lessons learned from earlier projects and changing market conditions are shaping the development of contractual standards and industry models for the construction, financing and operation of offshore wind farms, but we are still some way off from a settled practice. Perhaps the only certainty is that the future is uncertain, save that it will bear little resemblance to the past or the present.

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Endnotes

1 William Arthur Ward

2 "The UK Renewable Energy Roadmap" published by the Department of Energy and Climate Change (DECC) in July 2011.

3 The Crown Estate's UK Offshore Wind Report 2012.

4 The German "Act Amending the Legal Framework for the Promotion of Electricity Generation from Renewable Energy Resources" (Gesetz zur Neuregelung des Rechtsrahmens für die Forderung der Stromerzeugung aus erneueubaren Energien – EEG 2012) came into force on 1 January 2012. It offers a package of financial incentives to push offshore wind in Germany in an effort to achieve its aim of at least 80% renewable energy in Germany by 2050.

5 See press announcements and public reports on websites of Areva, Gamesa, GE, Vestas, Siemens, etc. For example: As recently as November 2012, Areva signed a memorandum of Understanding for a manufacturing facility for nacelles and blades in East Scotland. In March 2012, Gamesa announced it would build a £125 million manufacturing facility for blades and generator units in the port of Leith, Scotland. In May 2012, Siemens obtained planning permission for a £80 million offshore wind turbine assembly plant with Associated British Ports at Hull's Alexandra Dock, with a view to begin delivering giant 6MW wind turbines to the planned Round 3 wave of offshore wind farms. In 2010, GE announced about £100 million investment in a proposed UK manufacturing facility for 4.1MW turbines to be used on its 33GW Round 3 offshore programme. Some of these investments have been delayed, and others scrapped altogether (e.g., Vestas proposed investment at Sheerness), because of market uncertainty and lack of clarity regarding the longer term future of government subsidies.

6 Vestas already operates a research and development facility on the Isle of Wight, and in 2010, Mitsubishi announced a £100 million investment to create an engineering facility in Edinburgh for research and development in offshore wind.

7 For example, providing appropriate space and loading capacity, the onshore equipment, the facilities required for loading/unloading the enormous assets that are to be installed offshore, and accommodating various vessel restrictions.

8 For example, the joint venture between Vestas and KBR for Barrow offshore wind farm.

Offshore Wind Projects, continued

9 For example, there will also be a network of relationships between the developer/owner and government, and between the contractors and local population and port authorities.

10 Such as coordinating commencement and completion dates, entitlement to extension of time, liquidated damages provisions (both trigger points and amounts), limitations on liability, indemnities, insurance, force majeure, intellectual property, etc.

11 For example, the flange between turbine towers and transition pieces, grid compliance, etc.

12 Whether it is an obligation to design to a recognised standard, and/or a less specific and wider standard of "fitness for purpose," and/or imposing an absolute duty and/or a duty to exercise "reasonable skill and care."

13 In January 2010, it was reported that London Array was still on track but "has neared financial ruin on several occasions." Financing remained a problem for Ketil Konglevoll in 2010 when its CEO announced the cost estimate for Havsul 1 in Norway had been adjusted upward from NOK 7billion to NOK 10-12billion conditional on start up by 2013, and admitted that they may need more time.

14 In spring 2010, slippage of the transition pieces were detected, and Det Norsk Veritas reported a problem with the relevant code. This issue has affected about 600 of the 998 turbines in the North Sea, with an estimated monitoring cost of £25 million and repair bills of €120,000 per turbine. See Article by Gail Rajgor, entitled "Offshore Wind: Solid Foundations for the Future," published by *Wind Energy Update* on 21 May 2012.

15 Det Norsk Veritas reviewed and updated its standard—Design of Offshore Wind Turbine Structures (DNV-OS-J101)—in September 2011, which abandoned traditional monopile design in favour of tubular and conical grouted connections (currently being used for the London Array and Walney 2).

16 See, for example, the articles by (a) Jason Deign, entitled "Monopile Worries Mount: grouted joint doubts linger" dated 10 April 2012 and (b) Gail Rajgor, entitled "Offshore Wind: Solid Foundations for the Future" dated 21 May 2012, both published by *Wind Energy Update*.

17 "Horns Rev reveals the real hazards of offshore wind," *Modern Power Systems*, published by Global Trade Media on 1 October 2004.

18 Page 42 of "The UK Renewable Energy Roadmap" published by the Department of Energy and Climate Change (DECC) in July 2011.

19 In July 2012, Dong Energy and Siemens announced a deal to install 300 6MW turbines for use off the coast of Britain between 2014 and 2017, beginning with the Westermost Rough wind farm off the coast of Yorkshire. Vestas announced it expected a 7MW prototype is to be installed in Denmark during 2014.

20 For example, all six of the Areva 5MW turbines on the German test wind station at Alpha Ventus were transported back to shore for repair in 2010. See the presentation slides by Felix Debierre, CEO for Areva Wind, entitled "Lessons Learnt—Alpha Ventus" for Husum Wind Energy dated 23 September 2010, available on the internet.

21 In 2012, Strabag received an order for 850 gravity base foundations for a German offshore wind farm and began construction of a 55ha production plant in Cuxhaven, northern Germany, where it expects to manufacture eighty foundations a year for the German market. See Sally Bakewell's article, entitled "Strabag to Spend 300 Million Euros for Turbine Foundations," published by Bloomberg on 20 March 2012 . The Gravity Base Foundations consortium—including Vinci and Danish consultant Ramboll—is due to begin testing its prototype in 2013, with commercial rollout in 2014 aimed at the UK Round 3 offshore wind programme.

22 In June 2012, Vestas, Energias de Portugal (EDP), Repsol, Principle Power, A. Silva Matos (ASM) and InovCapital announced the inauguration of Portugal's first offshore wind turbine operating a Vestas V80-2.0 MW that was the first offshore turbine installed on the innovative floating foundation called the WindFloat. See press release on Vestas website, dated 19 June 2012.

23 See the Offshore Wind Vessel Database managed by 4COffshore. The biblical and legendary names ascribed to the vessels bear witness to their colossal size: the Kraken, the Leviathan, Goliath, Samson, Jumbo Javelin, Odin, Thor, Hermod, Balder, etc.

24 To establish sea floor bathymetry, seabed features, water depth and stratigraphy, hazards on the sea floor.

25 Applying the information gained from geophysical surveys to target soil strata changes or specific sea floor feature.

26 In order to identify the risks and ensure the necessary permits are obtained and complied with, it is necessary to perform a range of environmental surveys. For example: benthic environmental surveys (seabed and sediment), pelagic environmental surveys (open sea species, notably fish), ornithological environmental surveys (birds), sea mammal environmental surveys, surveys of fragile coastal ecosystems and coastal process surveys (impact of sedimentation and coastal erosion).

27 [1997] AC 191.

28 The House of Lords found that, but for the valuation, the bank would not have lent at all, and there was no evidence to show that it would have lost its money in some other way.

29 [1989] 45 BLR 1.

30 Per Lord Keith of Kinkel, at 12-13.

31 On 7 September 2012, SSE announced on its website that all 140 of its turbines at the 500 MW Greater Gabbard offshore wind farm had been commissioned and exported electricity. London Array reported that all 175 turbines had been installed by the end of 2012, from which they expected to generate 630MW electricity when the wind farm was handed over in 2013.

32 UNCLOS is an international agreement that governs the rights and responsibilities of nations in their use of the world's oceans, including defining territorial limits, navigation, environmental control, marine scientific research, economic and commercial activities, transfer of technology and the settlement of disputes relating to ocean matters. It replaced four 1958 treaties. It was opened for signature on 10 December 1982, came into force on 16 November 1994 and by November 2012 had 164 ratifications, including an accession by the UK (on 29 July 1997) and formal confirmation by the European Union (on 1 April 1998). See the United Nations' website.

33 When the coastline has deep indentations, fringing islands or is highly unstable, straight baselines may be used. In some cases, including the UK, the baseline may vary because sand bars that appear above water at low tide are dynamic. Movement during the course of an offshore project can have significant implications. For example, it can impact the scope of work and which assets are liable to attract VAT, which health and safety authorities are responsible for regulating health and safety, etc.

34 22 kilometres; 14 miles.

35 In the UK, this is the area that is managed by the Crown Estate.

36 370 kilometres; 230 miles.

37 (2001) 98 (10) LSG 46.

38 *Argyll and Bute DC v. Secretary of State for Scotland* (1976) SC 248.

39 *See North Midland Construction Plc v. AE&E Lentjes UK Ltd (formerly Lurgi (UK) Ltd)* [2009] EWHC 1371 (TCC).

40 The obstacle to any rules seeking to get around the lack of consent is that an arbitration agreement is a contract and so is subject to the fundamental principle of privity of contract.

FCPA Compliance, from page 16

that operates in Colombia and has offices in New Jersey. When Petro Tiger sought an oil services contract worth approximately US$39 million, Hammarskjold and other high-ranking officials within Petro Tiger allegedly paid bribes to a Colombian official in exchange for help in securing approval for that contract. The DOJ alleged that Hammarskjold and his co-defendants attempted to hide those bribes by first wiring payments to the bank account of the Colombian official's wife under the guise of payment for services that the wife did not perform, but when that transfer failed, they wired payments directly to the official's account.[19]

Similarly, ZAO Hewlett-Packard A.O. (HP Russia) pleaded guilty to violations of the FCPA after an investigation of its efforts to secure a Russian project to automate the technological infrastructure of the Office of the Prosecutor General of the Russian Federation (GPO). HP Russia executives and employees structured a deal to create a slush fund containing several million dollars for use as bribes to offer Russian officials in exchange for assistance in securing the project.[20]

Recent FCPA Decision

Litigated cases have also shed light on the scope of the FCPA. For example, in 2009, Joel Esquenazi and Carlos Rodriguez were indicted for conspiracy, violating the FCPA and money laundering.[21] The defendants owned Terra Telecommunications Corp. (Terra), a Florida company that purchased phone time from foreign vendors and resold the minutes to customers in the United States. One of Terra's main vendors was Telecommunications D'Haiti, S.A.M. (Teleco). In 2001, because Terra owed Teleco over US$400,000, the companies entered into a deal for side payments.[22] Under the deal, Teleco would shave minutes from Terra's bill, and Terra would give Teleco half of the money it saved from those free minutes.[23] Terra made its payments to Teleco through sham companies and funneled payments to Teleco's director of international relations for consulting services that were never performed.[24] In 2003, Esquenazi helped a Teleco official form a shell company through which Esquenazi could make direct payments to that official.[25]

On appeal, the defendants unsuccessfully challenged the classification of Teleco as a government instrumentality. To resolve the issue, the Eleventh Circuit first examined the FCPA's definition of "instrumentality," which defines the term as an "entity controlled by the government of a foreign country that performs a function the controlling government treats as its own."[26] In determining that Teleco was indeed an instrumentality of the Haitian government, the court outlined several factors for courts to examine when determining whether an entity is government controlled, including:

> the foreign government's formal designation of that entity; whether the government has a majority interest in the entity; the government's ability to hire and fire the entity's principals; the extent to which the entity's profits, if any, go directly into the governmental fisc, and, by the same token, the extent to which the government funds the entity if it fails to break even; and the length of time these indicia have existed.[27]

Finally, the Eleventh Circuit found that Teleco did perform a "function the government treats as its own." The court explained that, when determining whether an entity is an instrumentality of a foreign government, courts and juries should consider "whether the entity has a monopoly over the function it exists to carry out; whether the government subsidizes the costs associated with the entity providing services; whether the entity provides services to the public at large in the foreign country; and whether the public and the government of that foreign country generally perceive the entity to be performing a governmental function."[28]

Importance of Compliance Program

Companies seeking to expand their foreign businesses must consider the inherent risks and rewards of such an endeavor, and prepare an effective FCPA compliance program. As articulated in the Guide, "[i]n a global marketplace, an effective compliance program is a critical component of a company's internal controls and is essential to detecting and preventing FCPA violations."[29] The Guide counsels that an effective compliance program must be tailored for each company's "needs, risks and challenges," and should start with a strong commitment from senior management and a clearly articulated policy against corruption.[30] The program should include stringent oversight, accessible training, periodic review and complementary incentives and disciplinary measures.[31]

FCPA Compliance, continued

The Guide encourages the use of a "clear, concise, and accessible" code of conduct accessible to "all employees and to those conducting business on the company's behalf."[32]

The Guide concludes with the advice that a good compliance program constantly evolves and that those programs "that do not just exist on paper but are followed in practice will inevitably uncover compliance weaknesses and require enhancements."[33] Such evolution will be considered by the enforcement agencies undertaking an investigation, and proactive, internal evaluations by companies can actually lower applicable penalties.[34]

Conclusion

Contractors engaging in foreign projects must be mindful of the reach and repercussions of the FCPA. Violations of the Act can result in substantial criminal and civil fines, as well as suspension and debarment from U.S. government contracting—the lifeblood of many contractors. Contractors that wish to expand their global exposure must institute and follow clear and effective compliance controls and procedures.


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Endnotes

1 15 U.S.C. §§ 78dd-1(a), 78dd-2(a), 78dd-3(a).

2 Criminal Division of the U.S. Department of Justice and Enforcement Division of the U.S. Securities and Exchange Commission, *A Resource Guide to the U.S. Foreign Corrupt Practices Act*, (available at http://www.justice.gov/criminal/fraud/fcpa/guide.pdf).

3 *Id.* at 90.

4 *Id.* at 10.

5 *Id.* at 11.

6 15 U.S.C. §§ 78dd-2(h)(5).

7 *A Resource Guide* at 11.

8 15 U.S.C. §§ 78dd-1(a), 78dd-2(a), 78dd-3(a).

9 *A Resource Guide* at 14.

10 *Id.* at 13.

11 15 U.S.C. § 78dd-1(f)(1)(A); 15 U.S.C. §§ 78dd-2(h)(2)(A), 78dd-3(f)(2)(A).

12 *A Resource Guide* at 20.

13 *Id.*

14 *Id.*

15 *Id.* at 21.

16 *Id.* at 20.

17 *Id.* at 70, citing 48 C.F.R. §§ 9.406-2, 9.407-2 (allowing suspension and debarment for the "[c]ommission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects the present responsibility of a Government contractor or subcontractor").

18 *Id.* at 53.

19 *Former Chief Executive Officer of Oil Services Company Pleads Guilty to Foreign Bribery Charges*, U.S. Department of Justice press release, 19 February 2014.

20 *Hewlett-Packard Russia Agrees to Plead Guilty to Foreign Bribery*, U.S. Department of Justice press release, 9 April 2014.

21 *United States v. Esquenazi*, 752 F.3d 912, 917 (11th Cir. 2014).

22 *Id.* at 918.

23 *Id.*

24 *Id.* at 919.

25 *Id.*

26 *Id.* at 925.

27 *Id.* at 925-26.

28 *Id.* at 926.

29 *A Resource Guide* at 56.

30 *Id.* at 57.

31 *Id.* at 57-62.

32 *Id.* at 57.

33 *Id.* at 61-62.

34 *Id.* at 62.

2013-2014
ILS Statement of Operations

Line Item	2013-2014	Year End	2014-2015
Revenue	**Approved Budget**	**June 2014 Actual**	**Approved Budget**
Section Dues	45,000	41,500	43,750
Affiliate Dues	1,600	1,590	825
Admin. Fee to TFB	-16,750	-15,489	-15,313
Admin. Fee Adjustment	0	0	0
Total Dues	**29,850**	**27,601**	**29,262**
CLE Courses	-1,000	4,663	1,000
Section Differential	6,250	750	5,000
Newsletter Subscriptions	250	0	250
Sponsorships	100,000	63,750	100,000
Member Service Program	0	0	0
Foreign Program Revenue	5,000	0	5,000
Retreat Registrations	3,000	0	3,000
Newsletter Advertising	250	0	1,000
Investment Allocation	2,883	11,946	4,171
Miscellaneous	500	0	500
Other Revenue	**117,133**	**81,109**	**119,921**
TOTAL REVENUE	**146,983**	**108,710**	**149,183**

Line Item	2013-2014	Year End	2014-2015
Expense	**Approved Budget**	**June 2014 Actual**	**Approved Budget**
Credit Card Fees	150	118	350
Employee Travel	4,009	1,501	3,417
Telephone/Direct	900	936	1,000
Internet Charges	500	0	550
Postage	1,900	604	1,500
Printing	500	333	250
Newsletter	0	0	0
Membership	100	0	100
Supplies	250	197	250
Photocopying	300	38	250
ILQ Printing	5,000	198	5,000
ILQ Freelance Editor	10,000	2,850	10,000

2013-2014
ILS Statement of Operations

Line Item	2013-2014	Year End	2014-2015
Expense	**Approved Budget**	**June 2014 Actual**	**Approved Budget**
Officer Travel Expense	1,000	0	1,000
Meeting Travel Expense	1,500	1,005	1,500
Out-of-State Travel	3,000	0	3,000
CLE Speaker Expense	3,000	0	3,000
Reception	0	499	1,500
Committee Expense	500	420	500
Board or Council Meeting	1,000	639	1,000
Bar Annual Meeting	9,000	4,109	9,000
Midyear Meeting	3,500	3,500	7,000
Section Service Program	6,000	1,966	6,000
Retreat	5,000	0	5,000
Foreign Program Expense	10,000	0	10,000
Awards	3,000	965	3,000
Website	8,000	4,783	8,000
Int'l. Arb. Pre-Comp.	15,000	15,000	15,000
Council of Sections	300	300	300
Special Projects	4,000	1,127	4,000
Operating Reserve	12,940	0	12,598
Miscellaneous	500	0	500
Sponsorship Expense	24,000	26,000	24,000
Course Credit Fee	150	0	150
Total Operating Expense	**134,999**	**67,088**	**138,715**
Meetings Administration	2,178	2,227	1,660
Graphics & Art	5,162	3,234	7,049
Total TFB Support Services	**7,340**	**5,461**	**8,709**
TOTAL EXPENSE	**142,339**	**72,549**	**147,424**
Net Operations	**4,644**	**36,161**	**1,759**
Beginning Fund Balance	**96,087**	**96,306**	**139,039**
Ending Fund Balance	**100,731**	**132,467**	**140,798**

Proving Lost Productivity, from page 12

and construction claim literature.[2] AACE International divides various methods into five categories: (1) project specific studies; (2) project comparison studies; (3) specialty industry studies; (4) general industry studies; and (5) cost-based methods. Project specific studies are generally preferred to project comparison studies, which are likely to be given greater weight than specialty industry studies. Specialty industry studies are generally considered more reliable than general industry studies. Among the five categories, cost-based methods are the least preferred.

1. Project Specific Studies

Project specific methods focus on the project at hand and typically rely on contemporaneous productivity data. The project specific "measured mile" approach, including its extension, the baseline method, is widely acknowledged as the most acceptable method for calculating lost productivity costs internationally. This is validated by international organizations, AACE International and the Society of Construction Law (SCL) of the United Kingdom.[3] The measured mile method compares the productivities of identical or similar work between non-impacted or least impacted work segments to impacted segments of a project based on project specific data.

A project specific productivity benchmark, or "should have been" productivity, can also be obtained through work sampling during the course of construction, and the lost time because of certain disruptions for craft labor can be sampled using questionnaires. Although the sampling methods are typically simple and inexpensive to perform, their reliability is usually challenged on how representative the sampling is.

Earned value analysis is another project specific approach identified in RP No. 25R-03. This approach compares actual hours of the affected work to earned hours for that work, without relying on specific quantity information, while demonstrating no such loss was present absent the asserted impacts. When using the earned value analysis technique, it is cautioned that the budget used to generate the earned value calculation should be carefully reviewed and verified for reasonableness.

2. Project Comparison Studies

RP No. 25R-03 identifies project comparison studies, including comparable work study and comparable project study, to determine the "should have been" productivity. To perform a comparable work study, the analyst can use information from the same project to either:

1. Estimate the lost productivity on the impacted period and then locate an analogous work activity, on the same project, that was non-impacted or lightly impacted, and could be in a different trade, and calculate its productivity; or
2. Compare productivities during the impacted period of similar but non-impacted work performed by another contractor on the same project.

Comparable project studies are used to compare the productivities of similar work activities on the project at issue and a similar project. The work selected for the comparison benchmark or similar project should be sufficiently comparable for use in the determination of the "should have been" productivity of the impacted work that cannot be calculated otherwise. Obviously, the more similar the comparisons between impacted work and the benchmark work or the impacted work on the project at issue and a similar project, the more reliable the analysis. Since the definition of similar work across trades or a similar project is rarely agreed upon by project parties, the successful use of project comparison studies can be hard to secure.

3. Specialty Industry Studies

Specialty industry studies refer to certain subject specific studies and papers on factors affecting labor productivity, such as acceleration, changes, cumulative impact and rework, learning curve, overtime and shift work, project characteristics, project management and weather. Compared to the general industry studies, the specialty industry studies are subject specific, often limited to a specific industry, and generally are based upon a small number of specific projects rather than a generalized survey of the industry.

4. General Industry Studies

Certain industry and trade associations have published studies regarding the effect of various

Proving Lost Productivity, continued

project circumstances that can potentially reduce labor productivity. RP No. 25R-03 refers to the studies published by the Mechanical Contractors' Association of America (MCAA), National Electrical Contractors of America (NECA) and United States Army Corps of Engineers (USACE). Additionally, SCL, in its delay and disruption protocol, refers to the studies published by International Labor Organization and Chartered Institute of Building. For international projects, relevant sources of information also include general industry studies that relate to the country where the international project was located.

Unlike the subject specific studies, these general industry studies often address the potential collective productivity impact of more than one factor. Studies published by trade associations, such as MCAA and NECA, provide the impact of specific factors, but these studies are industry specific.

5. Cost-Based Methods

RP No. 25R-03 identifies three cost-based methods: (1) Total Unit Cost; (2) Modified Total Cost; and (3) Total Cost, and ranks them as the least preferable methods. Despite their low preference, they can still be accepted as viable methods to quantify lost labor productivity, provided that certain tests are passed:[4]

1. The impracticability of proving the claimant's actual losses directly;
2. The reasonableness of the claimant's bid;
3. The reasonableness of the claimant's actual costs; and
4. No responsibility for the increased costs.

Additional Considerations to Choose Quantification Methods for Lost Productivity

Although the order of preference issued by AACE International is one of the important criteria to consider when selecting the quantification methods for lost productivity, other factors also need to be considered.

Data Availability and Quality

The availability of project productivity data and the quality of data affect the choice of a method of quantifying lost productivity and the reliability of corresponding results. To perform a measured mile analysis, it is preferable to have project specific data detailing the quantities of work and the corresponding effort to complete those quantities of work. Ideally this data was collected in various areas of the project and summarized in multiple reporting periods. This will afford the analyst sufficient productivity data to compare segments of the project.

Time and Effort for the Analysis

Although the measured mile study method is the most preferred, it can be very costly. A cost benefit assessment may preclude the contractor from performing a measured mile analysis and therefore opting for a lesser preferred but less costly analysis.

Causes of Lost Productivity

When it is not possible to perform project specific studies and project comparison studies, case-specific circumstances usually influence the damage quantification method selection. The analyzer needs first to determine if the issue causing the decrease in productivity is relevant to any of the available specialty industry studies, and if not, whether it can be addressed by one of the available general industry studies. If both specialty and general industry studies are not applicable to address the issue causing lost productivity, cost-based approaches may be considered.

Prospective vs. Retrospective Analysis

It is more common that loss of productivity analyses are conducted retrospectively. It is not uncommon, however, that the project owner and contractor agree that a change in the anticipated conditions at the project has occurred, such as increased work difficulty and complexity, adverse weather conditions, work re-sequencing and/or overtime, which caused a loss of productivity. In these situations, the owner and the contractor may negotiate a change order for an anticipated loss of productivity based on a prospective estimate. Specialty and general industry studies are often used in pricing change orders. Project comparison studies can also be used if the owner accepts the contractor's supporting information on comparable work or projects.

Proving Lost Productivity, continued

Required Level of Certainty

In litigation and arbitration, it is the claimant's burden to prove the lost productivity to the level of certainty, meeting the judge's, jury's or arbitrator's expectations. In a non-litigation situation, such as change order negotiations or settlement discussions, the level of certainty required for quantifying lost productivity depends on the acceptance and support needs of the opposing party.

Pitfalls in Implementing the Measured Mile Method

The original measured mile concept relies on a comparison of identical activities in non-impacted and impacted periods of the project. This is done to quantify the lost productivity resulting from the impact of the disruption events that were beyond the claimant's control. The advantage of this concept over other approaches is that it relies on actual performance achieved on the same project. Successfully implementing the original measured mile method can be a formidable challenge because it requires an impact-free period as the measured mile, which might not exist at all in many cases. In order to overcome this shortcoming, the "baseline" concept was introduced. When a non-impacted segment of the project cannot be found, a baseline may be defined using the lightly impacted segments. Since this baseline productivity may still be lightly impacted by disruption events, it is a conservative benchmark from the claimant's perspective. In this article, we use the broad meaning of measured mile method, which includes the original concept and its variations, such as the baseline method.

Quantifying lost productivity using the measured mile

Proving Lost Productivity, continued

approach involves processing and reconciling data for input (usually measured in labor hours) and output (usually measured in the quantity of completed work), calculating productivity, identifying the productivity benchmark, analyzing the cause and effect relationships and measuring labor inefficiencies. There are various pitfalls in each of the steps, which may create formidable hurdles for a credible measured mile analysis. Below are the common pitfalls in implementing the measured mile method:

Flawed or Erroneous Data

A basic step in the process of preparing a measured mile analysis is to check the claimant's source level data for accuracy. There may be data entry errors and other reporting errors, such as those caused by data update delays. A plot of productivity can help reveal errors or anomalies in the data where reconciliation is necessary. Reviewing the original records, such as daily reports from all the relevant parties, may help correct data entry errors and other reporting errors. In order to maintain the reliability of the measured mile analysis, the claim consultant may need to exclude the anomalous data points, which cannot be corrected and reconciled with contemporaneous project records and reasonably explained, from the analysis.

Inappropriate Productivity Measurement

Productivity is a measured rate of output or work quantity per unit of time or effort, usually measured in labor hours. There are two primary methods for measuring the output, using percentage of work completed or using physical units of work completed. The percentage completed method relies on periodic estimates of the percentage of work completed and can be commonly seen in the pay applications and progress reports. The accuracy of the asserted percentage completed can be compromised if, for example, the contractor billed the owner ahead of its actual progress to reduce its burden on working capital or if the percent completed is skewed due to non-labor related progress billings. The physical units of work completed method is more detailed and more accurate, but relies upon the contractor accurately and consistently measuring the quantities of work performed.

Incomparable or Dissimilar Items

A common mistake in the measured mile analysis is that dissimilar work has been compared. A measured mile analysis for labor productivity requires that:

- The work performed in the measured mile and the impacted period should be substantially similar in type, nature and complexity;
- The composition and skill level of crews should be comparable;
- The measured mile should represent reasonably attainable levels of productivity; and
- The work environment should be similar.

Inadequate Cause and Effect Analysis

Since damage awards based on a measured mile analysis have been made by many judicial forums, some people mistakenly assume that any analysis labeled a measured mile analysis meets a standard of proof for lost productivity. In this article we have not focused directly on the entitlement aspect of proving loss of productivity, but any quantification method must pass the test of cause and effect analysis.

A causal link between the impacts alleged to be beyond the contractor's control and the corresponding damage quantification should be established. One common approach to demonstrate this causal link is a graph of productivity depicting the productivity evolution over time on the project, along with a correlation of potential impact events.

Similar to time dependency, it is sometimes possible to show that the productivity at an impacted location is worse than the productivity at a non-impacted location, demonstrating that the impact caused productivity loss. The work in the locations should be substantially similar in type, nature and complexity, and the crews that performed the work at the different locations should be comparable.

Failure to Understand the Premises of Existing Procedures to Determine the Measured Mile Could Lead to Unreliable Results

In some cases, identifying a measured mile through a cause and effect analysis is not readily observable. In order to aid the identification of a measured mile or

Proving Lost Productivity, continued

baseline, construction researchers and professionals, including Zink,[5] Thomas,[6 7 8 9 10 11 12] Gulezian and F. Samelian,[13] Ibbs and Liu[14] and Zhao and Dungan,[15] have developed various procedures. Each of the methods has its underlying premises and assumptions. Applying these procedures without considering the underlying premises and assumptions may lead to an erroneous measured mile calculation.

Zink's Measured Mile Procedure

The procedures Zink proposed include:

- Plot the actual labor hours expended versus corresponding percentage of completion for the work;
- Exclude the first and last 10% from the analysis because the productivity during them may be impacted by "build up" and "tail out" effects; and
- Identify a linear or near linear portion showing the most efficient rate of progress in the 80% of the curve as the measured mile.

The measured mile selected by Zink's procedure is a continuous period of time in which the most efficient productivity is uniform or nearly uniform. In many projects, however, a measured mile period or segment with uniform or nearly uniform productivity may not exist due to the pervasive disruptions.

Thomas's Baseline Method

The original measured mile method requires the measured mile to be free or essentially free of disruptions and continuous in time, which limits its application. The baseline concept was introduced by Thomas and his collaborators in order to overcome this limitation. They asserted that a baseline period is a period of time when the contractor performs at its best, and it does not have to be a continuous, non-impacted time frame. The steps to determine a baseline proposed by Thomas and his collaborators can be summarized as follows:

- Determine the total number of reporting periods;
- The size of the baseline subset is selected as 10% of the total number of reporting periods and should not be less than five;
- The contents of the baseline subset are the reporting periods that have the highest production or output; and
- The baseline is the median of productivity value per period or the productivity average in the baseline subset.

Note that Thomas's procedure uses production instead of productivity to identify the baseline, and when the baseline is intermittent, a regression analysis may be necessary to quantify the influence of multiple disruptions. Thomas's procedure is more applicable when the input in each reporting period is uniform or almost uniform and when the reporting periods with highest production would be among the ones with best productivity. When the input in each reporting period is not uniform or the reporting periods with highest production happen to be heavily impacted, Thomas's approach could fail to determine a viable baseline or could generate a baseline that includes significant productivity loss. This could generate results that are unfair to the claimant. In addition, Thomas's procedure has also been noted for the subjective 10% size of the baseline set.

Gulezian and Samelian's Control Chart Based Method

Gulezian and Samelian proposed a statistical approach based on a process control chart for establishing a productivity baseline that reflects a contractor's normal operating performance. A control chart consists of:

- Points representing a statistic of measurements in samples taken from the process at different times;
- The mean of this statistic using all the samples is calculated;
- A center line is drawn at the value of the mean of the statistic;
- The standard deviation of the statistic is also calculated using all the samples; and
- Upper control limit (UCL) and lower control limit (LCL) that are drawn typically at three standard deviations from the center line.

To use the control chart to determine a productivity baseline, the metric on the vertical axis is productivity value, and the metric on the horizontal axis is time. The individual productivity values in corresponding reporting periods are plotted on the chart to create a time-series plot of productivity values for corresponding report periods. Since a portion of the data points may fall out

Proving Lost Productivity, continued

of control with respect to the control limits, they are eliminated and the control chart is reapplied with a recalculated center line and control limits. The process repeats until no points fall out of the control limits. Then the mean productivity of the points falling within the control limits after the last iteration is used to define the baseline productivity level.

This method returns a very conservative baseline that may not reflect the attainable sustained productivity, especially when the disruptions are pervasive, and thus it would diminish the productivity loss claim. When the majority of the data points are in disruption sections, this method is not likely to determine the baseline because all data points may fall within the control limits.

Ibbs and Liu's K-Means Clustering Technique Based Procedure

K-means clustering is a method of cluster analysis that aims to partition observations into K clusters in which each observation belongs to the cluster with the nearest mean. Using the K-means clustering technique, the productivity data can be divided into two clusters, good productivity cluster and bad productivity cluster. The good productivity cluster, which may not be continuous in time, is the baseline subset determined by Ibbs and Liu's method, and the mean of the baseline subset is then selected as the baseline productivity.

One issue with the K-means clustering technique is that it does not guarantee a unique solution for baseline productivity. Another drawback of this method is the complicated calculation process, which renders it impractical for general construction professionals with no access to commercial statistical software packages.

Zhao and Dungan's Improved Baseline Method

In order to address many of the weaknesses in the above methods, Zhao and Dungan proposed an improved baseline method. In the improved baseline method, the basic principle of labor productivity loss calculation, i.e., comparing the attainable and sustained labor productivity during the non-impacted or lightly impacted periods to the productivity in the impacted periods, is central to the analysis. The baseline subset is defined as the periods in which the productivity reflects the contractor's normal attainable and sustained operating performance, which is not necessarily continuous in time. The proposed approach for determining baseline productivity comprises the following general steps:

- Segregate the data into a "good" productivity group and "bad" productivity group using the overall average productivity; and
- Determine the baseline subset from the good productivity group using basic statistical techniques, such as process control chart, and then the baseline productivity is calculated as the average productivity of the baseline subset.

An advantage of the improved baseline method is that the underlying assumption is very straightforward and easy to communicate, i.e., the more severe the disruptions, the worse the productivity. The data points

Proving Lost Productivity, continued

with good productivity are normally encountered when no disruptions or light disruptions are experienced. It is reasonable to infer that the productivity observed in the sections of the work without any assignable disruptions or with light disruptions should be better than the overall average productivity, the impacted and non-impacted combined. The method can also be implemented to determine the baseline/measured mile that does not need to be continuous or non-impacted, relies on productivity and not production, does not rely on a subjective data set, generates consistent results and is relatively simple to communicate.

Conclusions

Proving and quantifying lost labor productivity in construction claims is a difficult and challenging task. As recognized by AACE International and SCL, measured mile study is the most preferred approach for estimating lost labor productivity in construction claims. In order to implement the measured mile method properly, due diligence needs to be performed to address flawed data, to select correct productivity measurement, to avoid comparing "apples to oranges," to determine a convincing measured mile and to establish causation by demonstrating a causal nexus between lost productivity and the asserted disruptions. When data availability and other constraints make a measured mile study or other project specific studies inapplicable for a given project, the expert should try to find the most preferred method from the remaining methods listed by AACE International.


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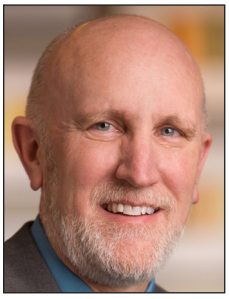
J. DUNGAN

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