

The Art of Allocating Risk in an EPC Contract to Minimize Disputes Dr. Patricia D. Galloway¹

Owners often to the EPC Contractor to be the one stop shop and the last stop for all the costs to be incurred for a project - from inception to project close-out. However, as is true for all construction projects, uncertainty will always exist as to the future conditions under which the project will be executed. What does uncertainty mean for the EPC industry? Factors such as labor supply restrictions; loss of intellectual knowledge and fund availability for infrastructure projects has shrunk considerably from previous years. Recent project experience and recent trends within the construction industry, including the increase in mega project construction indicate that executing projects will be more difficult and more risky in the future. Understanding what the risks are, how to allocate these risks and their legal implications will be critical for both the Owners and the EPC Contractors to ensure their project execution is successful.²

The late Dr. Kris R. Nielsen, in his presentation on risk management to the Deutsche Bank Global Oil & Gas Conference in 2006, described the current stakeholder's perceptions of success as follows:

“Certainly, as an industry we can point to amazing technological successes. Every day we are pressing the technology envelope and moving the technology bar higher, even for mature developments or regions. Yet, our industry grumbles and rumples in the commercial reality behind many of these successes. A reality is that in the last decade we have concentrated the number of Owner “Players” at all levels and sectors. A co-reality today is that many of the key Contractor “Players” of a decade ago no longer exist, are combined, or are no longer willing or capable of “playing.” There are many reasons, but query: has there been a significant change in the way we have handled these increasing risks as we execute today’s projects? The answer is partially ‘YES. But we must ask: are we achieving success from the perspective of the both the project itself and its execution stakeholders? Clearly, the answer is ‘NO.’

Although there are examples of successes (commercially and otherwise) to which we can all point, there are also many near or actual commercial disasters that are still in the throes of resolution. There is, as a result, extensive mistrust between the Owners and the Contractors. This mutual mistrust leads Operators to claim the Contractors want too much for the work. The Contractors claim all the Owners want to do is shift their risks to Contractors without compensation. Much of the mistrust has evolved from the manner in which we are accomplishing project execution coupled with the conditions and contexts that are created or result there from.

Today, the commercial risk in offshore and frontier regions is huge. Projects are often packaged as a single mega-project requiring a long development period. Then as an industry, we try to control risk contractually, with non-negotiable terms, and generally through lump sum pricing. These are exacerbated by contracting approaches that are driven by transparency requirements of national oil and gas companies or the financial community funding many of the projects. To further create commercial complexity, local content requirements have been handed down to the lowest tiers of the execution hierarchy, where there is the least capability.

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² Dr. Patricia D. Galloway, “Design-Build/EPC Contracting Heightened Risks-Changes in a Changing World”, *ASCE Journal Legal Affairs and Dispute Resolution in Engineering and Construction*, February 2009, Vol.1, No.1,p. 7

What then is the commercial reality we face now: Risk in project execution in all forms is not being effectively managed. Execution is delayed, costs of execution soar, and parties' must protect their commercial status. Owners must minimize CAPEX impacts. Contractors must recover real out-of-pocket costs and some profit. Risk shedding has become everyone's game. Owners are forced to reduce exposure through even transfer of even equity risk to entities whose business model is based on near term execution profits and slim capitalization. Needed return on investment requires maintenance of production timing and production cost requirements. In reality, Contractors can and should only accept risk that can be reasonably defined. The reality is that Owners are not achieving their risk management needs and Contractors have a fraction of shareholder value of a decade ago. Out of commercial necessity then, both Owners and Contractors are employing "hardball" project management / contract administration that further breeds mistrust and further exacerbate the conditions and context that bred the mutual mistrust in the first place.

The oil and gas industry is not handling efficiently or effectively project execution risk. The projects are suffering and the stakeholders are not meeting goals, especially perceived and actual commercial goals. We are turning into groups of "risk accepting" and "risk adverse" stakeholders – both on the sides of Owners and Contractors. As the project execution risks are growing almost exponentially, the challenge is to seek joint methods to enable both Owner and Contractor stakeholders to manage risk appropriate to their corporate and project needs while achieving the very technological marvels our executed projects represent. No industry is viable over time if the stakeholders are not viable."³

The observations of the late Dr. Nielsen hold true today, especially for the oil & gas, power and transportation industries. It is not surprising that the amount of EPC contracting is enormous. The surprise is the conditions under which Owner's expect EPC Contractors to execute the projects including shedding all the risk to the EPC Contractor.

This paper explores the nuances of EPC contracting in regards to allocating risk and limiting its exposure to minimize disputes and increase the probability of a successful project that is completed on-time, on-budget, and meets the expectations of the parties.

1 THE EPC CONTRACT STRATEGY

EPC contracts are, by their nature, different to traditional or design/build forms of contract and are intended for entirely different types of projects.⁴ In the EPC model, the Owner typically retains an engineer to develop the design criteria, in-service date requirements, performance targets, and other operational criteria for the project. The Owner then contracts with a single-entity, often a consortium, to provide all aspects of detailed engineering, procurement, scheduling, and construction of the project.⁵ The EPC model typically involves around a "fast track" project, in which major equipment procurement and civil construction precedes final design completion. The EPC contract is typically a fixed price, target price, guaranteed maximum price, or some other variant of a lump-sum contracting methodology. It is laden with

³ Nielsen, Dr. Kris, R. "Risks Must be Managed More than Ever in Today's Oil and Gas Industry", Deutsche Bank Global Oil & Gas Conference, 28 September 2006, London

⁴ Al Tamimi & Co., "Risk in EPC Contracts", Al Tamimi & Co. Newsletter, Issue 241, June 2011, www.tamimi.com/.../section-7/june-5/risk-in-epc-contracts.html

⁵ Albert Bates, Jr., "Strategic Considerations in North American Megaprojects", Ch. 18, *Managing Gigaprojects*, ASCE Press, Reston, VA. 2013, p. 352

incentives for the Contractor, but for which the Owner generally insists that the Contractor accept the risks of executing the project as per the standards and conditions set forth in the contract.⁶

The EPC contract presents advantages and disadvantages to both the Owner and the Contractor.⁷ Advantages to the Owner include:

- Shifts risk to the Contractor for integrating the performance of all package contractors, including designers,
- Shifts the risk to the Contractor for supply chain solvency risk,
- Provides early cost certainty,
- Sizes remedies such as liquidated damages, liability caps and bond amount to the total cost of the works, thus covering a significant portion of the Owner's losses,
- Minimizes the administration burden on the Owner, and
- Provides for flexible financing options.

Disadvantages to the Owner include:

- Inheriting a risk premium paid to the Contractor for its contingency and risk,
- Limiting the Owner's ability to make design changes without an onerous change order process,
- Minimizing the Contractor's incentive to aim for a higher than minimum compliant standard for quality,
- Limiting the Owner's ability to intervene or influence how the Contractor will execute the works,
- Limiting risk transfer due to express liability limits imposed by caps and by balance sheet and bonding limitations of Contractors, and
- Increasing the probability of Contractor claims to alleviate risk transfer.

Advantages to the Contractor include the potential to receive high margins commensurate with the risk it assumes, ability to reduce its competition due to the limited number of Contractors that can assume that risk and avoids Owner intervention in how it wants to prosecute the work. However, as with the Owner, the disadvantages to the Contractor is it assumes the maximum risk strategy and is exposed to market demand and escalation which is difficult to predict and outside of the Contractor's control.

An EPC contract transfers more risk to Contractors than do other project procurement methodologies.⁸ This fact and the possible consequences are likely to result in high contract

⁶ 24 April 2008, "*Repositioning the 'Risk Pendulum'*", Oil Service Contracts, Deutsche Bank in conjunction with Pegasus Global Holdings, Inc., page 6

⁷ Patrick Lamarre, Presentation, "Risk Allocation in Construction Contracting", October 2009, www.thinkingpower.ca/PDFs/NuclearPower/NP_2_2_Lamarre.pdf; Tracy London, David Metzger, Tim Steadman, Presentation by Clifford Chance, "EPC and EPCM Procurement-Issues for Owners," www.cliffordchance.com/content/dam/cliffordchance/PDF/Construction

⁸ AON power point presentation, "Risk Allocation and De-Risking Projects", Specialty Broking, Construction Power & Infrastructure, Asia, PowerGen Asia, KL, September 10, 2014, www.pennwell.websds.net/2014/kl/pgs/slideshows/T5S2O4-slides.pdf

prices which include the above aforementioned contingencies and mark-ups to hedge again risks such as performance, cost increase, time extension and potential loss.⁹

Reviewing the advantages and disadvantages to the EPC contracting strategy, the Owner must realize that on lump sum, fixed price EPC contracts, if it attempts to shift all the risk to the Contractors for a firm fixed-price and date certain completion, then the Contractor is forced to add contingencies into its tender price to accommodate for a worst case scenario should those risks manifest. If the tender is successful, the contingency costs cannot be removed by the Owner even if the risk event(s) in question do not occur.¹⁰ Contingency can represent up to 15 percent or more of the asking price depending on the risks assumed. The Contractor is forced to add large contingency because in the best case scenario if the risks do not materialize and it can obtain additional profit on top of the base price / margin. In the worst-case scenario, risks exceed the contingencies put in place and erode the base margin to an extent that the Contractor loses money on the project.¹¹

Megaprojects are executed over several years, have a limited number of qualified and financially capable Contractors and Consortiums that have the financial capability to execute, and are often executed under strict regulatory regimes, including environmental, governmental regulatory restrictions or regional regulatory drivers. As a consequence, one of the largest sources of disputes between Owners and Contractors has occurred under a Lump Sum or Fixed Price EPC contract. With a more rigorous risk allocation process, these disputes can be minimized.

2 IDENTIFYING RISK AND ITS OWNERSHIP

Before risk allocation can take place, risks need to be identified with some thought as to ownership. Risks are best identified prior to the development of the contract through a risk profile exercise at the feasibility stage of the project. By identifying the risks at an early stage in the project and assessing their potential impact, decisions can then be made as to how best to reduce and allocate those risks to either control them or absorb them should those risks manifest over the course of project execution.¹²

Once risks are identified, one of the most debated issues among the project participants is “Who owns that risk?” In the past, it was believed that the Owner of the project owned the risk on the project until such point at which a particular risk element was allocated to another project participant. It was also assumed that if an Owner contractually allocated a risk element to another party to the project that that risk element somehow disappeared from the Owner’s risk profile because it had become someone else’s responsibility. One need only look at the claims, disputes, and litigation histories of projects to discovery the fallacy of this assumption. The real answer to who owns the risk is that risk elements are inherent in the project itself, regardless of the party to whom management and control of a specific risk element may have been allocated.

⁹ Carolin Schramm, Alexander Meibner, Gerhard Weiddinger, “Contracting Strategies in the Oil and Gas Industry”, *3R International, Special Edition*, January 2010, p. 33

¹⁰ AON power point presentation, “Risk Allocation and De-Risking Projects”, Specialty Broking, Construction Power & Infrastructure, Asia, PowerGen Asia, KL, September 10, 2014, www.pennwell.websds.net/2014/kl/pgs/slideshows/T5S2O4-slides.pdf

¹¹ 24 April 2008, “*Repositioning the ‘Risk Pendulum’*”, Oil Service Contracts, Deutsche Bank in conjunction with Pegasus Global Holdings, Inc, page 6

¹² Rahul Bali, Prof. M.R. Apte, “Risk Management in EPC Contract-Risk Identification”, *IOSR Journal of Mechanical and Civil Engineering, (IOSR-JSME)*, e-ISSN: 2278-1684, p-ISSN: 2230-3334X, Volume 11, Issue 1, Ver. IV (Feb 2014), p. 10-11, www.iosrjournals.org

What this situation means is that every party directly or indirectly involved in the project to some extent “owns the risk” inherent in that project.¹³

One question that an Owner should ask, however, in determining who should “own” the risk is to ask itself what it would pay to avoid a risk. If that amount is less than the Contractor’s risk premium, then the Owner should take ownership of that risk.

What a contract actually allocates is some level of responsibility to manage and control a particular risk element and some amount of liability should an allocated risk affect the project. The fallacy is in believing that an Owner can simply “allocate and then forget” a risk via a contract with another party. More and more often, neither responsibility to manage nor liability for a risk element is decided until after the project is completed, at which time the courts, arbitrators, or mediators decide the extent to which each of the parties shares responsibility to manage a risk and shares the liability for the effect of a risk element.¹⁴

3 THE ALLOCATION OF RISK

Risk ownership must translate into risk allocation. As the Owner of the project and the ultimate user of the project, unless there is an express provision within the contract that clearly transfers or reallocates a risk to another party to the contract, the risk will always remain with the Owner. With megaproject construction on the rise, contract risk allocation becomes even more critical. Risk allocation, however, must allocate the risk to the party most capable of managing that risk and balance the risk allocation to ensure alignment between the Owner and Contractor on project objectives.¹⁵ Risk allocation should essentially allocate risk that delivers the most efficient result.¹⁶

There have been multiple individuals who have attempted to simplify the allocation of risk within contracts. In 1973, Max Abrahamson published an article in the *Journal of the British Tunnelling Society*, in which he discussed five main steps to the allocation of risk in contracts:¹⁷

- The risk is within the party’s control
- The party can transfer the risk, e.g. through insurance
- The preponderant economic benefit of controlling the risk lies with the party in question
- To place the risk upon the party in question is in the interests of efficiency, including planning, incentive and innovation, and
- If the risk occurs, the loss falls on the party in the first instance, and it is not practicable, or there is no reason under the above principles, to cause expense and uncertainty by attempting to transfer the loss to another.

Nael Bunni on the other hand, notes that these principles do not deal with all the risks to which a project could be exposed, for example, Acts of God or force majeure, which are not under the

¹³ Kris R. Nielsen and Jack L. Dignum, “The Importance of Risk Management”, *Managing Gigaprojects*, ASCE Press, Reston, VA. 2013, pp. 46-47

¹⁴ Kris R. Nielsen and Jack L. Dignum, “The Importance of Risk Management”, *Managing Gigaprojects*, ASCE Press, Reston, VA. 2013, p. 47

¹⁵ Patrick Lamarre, Presentation, “Risk Allocation in Construction Contracting”

¹⁶ Damian McNair, “EPC Contracts in the Power Sector”, DLA Piper Asia Pacific Projects Update, 2011, www.dlapiper.com, p. 6

¹⁷ Nael Bunni, “The Four Criteria of Risk Allocation in Construction Contracts”, *International Construction Law Review*, 2009, Pt. 1, p. 8-9

control of either party. Bunni states further that while there are situations where both parties are in control of a certain risk, neither can be allocated that risk.

Thus, Bunni suggests that there are four principles that fit into the following maxims:

- Which party can best control the risk and/or its associated consequences?
- Which party can best foresee the risk?
- Which party can best bear the risk?; and
- Which Party ultimately most benefits or suffers when the risk eventuates?

At the end of the project, when disputes arise, as noted by Bunni, it will be these four maxims, either individually or in combination, that will be used by the arbitrators and judges to allocate the risks to the parties when the contract is silent on the subject or when the answer is not clear. Essentially, it is the maxim of foreseeability of the risk follows control followed by the ability to financially bear the risk when and if it materializes.

Risk allocation cannot be prescriptive as to what risks should be allocated to specific parties since each project possesses its own unique circumstances. Rather, parties need to address risk allocation based on a sound allocation methodology.

Using the questions raised by Bunni, there are essentially four basic principles to risk allocation methodology:¹⁸

- Control: Risk should be allocated to the party in the best position to control and manage the variables relevant to the identified risk. Allocating risk to a project participant who is not in a position to technically, legally, or otherwise control and manage the occurrence or impact of that risk will lead to significant frustrations, conflicts, and disputes from a fundamental sense of unfairness.
- Clarity: The allocation decisions should be clearly articulated and defined in the relevant project contract and contract documents. The contractual arrangements, the legal rules of the governing law of the contract between the parties, and the technical documentation, including the specifications and drawings must be clearly stated and explicitly stated so that they can be fully understood.¹⁹ As a matter of general principle, all parties will be held to the actual words of the contract if the terms are clear and unambiguous.²⁰
- Consistency: Risk allocation decisions need to be expressed in all relevant contract documents in a consistent manner.
- Fairness: Achieving the first three principles will go a long way in achieving the fourth, fairness, which simply means risk allocation should be conducted in a balanced, clear and consistent manner.

For those risks that present significant uncertainty, the parties should consider negotiating a reasonable baseline that would clearly define the parameters of what risk is to be assumed by the Contractor and how risk would be measured when actual events exceed that baseline.

¹⁸ David J. Hatem, "Risk Allocation", *Mega Projects, Challenges and Recommended Practices*, American Council of Engineering Companies, Part II, Ch. 15, pp. 328-329

¹⁹ Nael Bunni, "The Four Criteria of Risk Allocation in Construction Contracts", *International Construction Law Review*, 2009, Pt. 1, p. 6

²⁰ Dr. Donald Charrett, "The Avoidance of Disputes By Contractors in Design and Construct Contracts", *The International Construction Law Review*, Pt. 4, 2008, p. 441

Innovative contract drafting can assist in how risk is allocated in the various contract clauses, especially as it pertains to:

- Differing Ground Conditions,
- Severe Weather Conditions,
- Unusual or technically challenged portions of the work,
- Change of Law or Regulations,
- Currency Fluctuations,
- Cost of Materials,
- Cost and Availability of Labour,
- Force Majeure, and
- Failure to Perform Obligations.²¹

Some standard forms of contract have recognized the presence of uncertainties and have attempted to look at risk allocation in EPC contracting delivery approaches and define what party would be in the best position to assume that risk. For example, in 1999, FIDIC published its Conditions of Contract for EPC/Turnkey Contracts (The Silver Book). The purpose of the Silver Book was to transfer certain risks to the Contractor which would have otherwise fallen to the Owner in order to achieve a higher degree of time and cost certainty, with an understanding that Contractors will price the risk they are expected to bear.

Examples of risks transferred from the Owner to the Contractor under the Silver Book from those contained in the FIDIC Red and Yellow Books include:

- Unforeseeable Ground Conditions
- Design
- Extensions of time for exceptionally adverse weather or unforeseeable shortages in the availability of personnel or goods caused by epidemic or governmental actions
- Use or occupation by the Owner of any part of the permanent works, except as specified in the contract,
- Design of any part of the Works by the Owner's personnel or by others for whom the Owner is responsible, and
- Any operation of the forces of nature which is unforeseeable or against which an experienced Contractor could not have reasonably have been expected to have taken adequate preventative measures.²²

Risk liability can also be limited by allowances, placing a monetary or percentage value cap on the amount to which one party will be liable to the other, and limiting certain categories of loss. Most EPC contracts do cap the Contractor's total liability at a specific amount, regardless of cause and often there are different caps of exposure for particular risks.²³ Thus, it may be prudent to specify precisely the types of loss intended to be excluded to achieve the clarity recommended in the contract.

²¹ Tracy London, David Metzger, Tim Steadman Presentation by Clifford Chance, "EPC and EPCM Procurement-Issues for Owners"; Nancy Wodka, "Risk Allocation in Nuclear Construction and Supply Contracts", Presentation at U.S. WIN Conference, July 20, 2010

²² Al Tamimi & Co., "Risk in EPC Contracts", Al Tamimi & Co. Newsletter, Issue 241, June 2011, www.tamimi.com/.../section-7/june-5/risk-in-epc-contracts.html

²³ Charles M. Sink, "Mega Project Construction Contracts: An Owner's Perspective", 55 *Rocky Mt. Min. L. Inst.* 21B-12 (2009)

4 LIMITING EXPOSURE OF ALLOCATED RISKS

In consideration of how to limit exposure on allocated risks, the Owner should analyse which of the identified risks if manifested are most likely to result in a dispute. By determining those risks that have a high probability of resulting in a dispute, decisions can be made not only how to best allocate those risks, but whether there are methods to limit the exposure of those risks. Methods to limit risk exposure include contract allowances and funds, liability caps, financial securities, cost escalation formulas, baseline expectations from which to measure an unusual occurrence (e.g. severe weather), and insurance.

The primary categories to limit risk exposure include those dealing with:

- Pricing issues,
- Laws and regulations, and
- Performance Risks

Pricing Issues

Pricing issues concern line item contingency, increased quantities, escalation, and cost of materials and availability of labour. As previously discussed, the larger the uncertainty, the larger the project contingency the Contractor will build into its tender price. On those areas of the project where high probabilities exist for uncertainty, the Owner can include shared contingency allowances to reduce the amount of contingency the Contractor may otherwise include in its tender price. For example, the Owner with or without the assistance of the Contractor could estimate what the risk contingency could be for discovery of a differing site condition (DSC) beyond what would be reasonably expected and agree to a specific dollar amount to be placed in a contingency fund should a DSC be encountered. Tunnel projects are prime candidates for this concept as they exhibit a significant amount of uncertainty in the underground conditions. Thus, Contractors will assume there will be a high risk of encountering differing site conditions and will typically build in large contingencies to account for that uncertainty and high risk. A shared contingency allowance provision might state:

[Owner] will use the Shared Contingency Allowance to pay amounts owing to the Contractor for Differing Site Conditions under this Section X, but if the Shared Contingency Allowance is fully consumed, Owner shall remain responsible for the costs of Differing Site Conditions as described in this Section X. Unused amounts in the Shared Contingency Allowance shall be shared by the Contractor and Owner in accordance with the provisions of Article Y.

Article Y would then define the cost sharing mechanism. Typical cost sharing allocation might be 75% to the Contractor and 25% to the Owner should the shared contingency allowance not be used in its entirety at Substantial Completion.

Fund accounts are another method to limit exposure and can help offset Contractor risk premiums which might otherwise be included in the tender price. For example, the cost of bonds and insurance can be costly to the Contractor when attempting to offset risk should it manifest, or which may be required by the contract. By establishing a bond and insurance fund, such a fund will cover premiums for bonds and insurance cost and incentivize the Contractor to reduce costs of such premiums and costs. Funds typically reimburse the Contractor dollar for dollar with any excess cost not used to be paid to the Contractor on achievement of Substantial Completion.

Unusual situations in a project may also be appropriate for establishment of a fund. For example, tunnelling under a major city might raise concerns as to any building deformation. Thus, with specific monitoring devices for measurement and monitoring during tunnelling, a deformation and mitigation and repair fund could be established to cover any property damages. Like other funds established, should the funds not be depleted prior to Substantial Completion, the Contractor either participates in some sort of cost sharing or is entitled to receive any remaining dollars in the fund.

Estimated quantities can also be a source of increased risk to the Contractor on large EPC contracts where design concepts are defined but the detailed design has not yet been done. Thus, should quantities exceed what might be reasonably estimated at tender consequently may translate into increased costs on top of potential cost escalation. Exposure due to quantity fluctuation can be limited by providing for a renegotiation of the commodity price for a portion of the final adjusted quantities in excess of 1.25 (or some other agreed percentage) of the original quantities.

Due to the lengthy construction periods typical of large EPC contracts, the risk of commodity price increases during the construction performance. As such, suppliers are unlikely to hold fixed prices over the time period needed. When Contractors bid a fixed-price EPC contract, they would typically assume an escalation on materials that may exceed the actual cost. This is yet another area where an escalation fund in the contract can limit risk exposure. The escalation fund at an agreed amount is for the explicit purpose of reducing the level of contingency contained in the total tender price for projected inflation in construction costs over the course of the project. Another way of limiting the escalation risk exposure is by sharing that risk through cost escalation based on a formula or pass through.²⁴ The formula could be based on a single index, a compendium of indices or a composite index such as the Handy-Whitman index[®].

Similarly, there is a high risk that a large pool of highly skilled labour may not be available at any price. Thus, many EPC contractors are not willing to fix the labour cost, but only assume the risk of the labour hours needed and the labour productivity.²⁵ Thus, in order to minimize risk exposure, the Owner and Contractor might consider other mitigation techniques such as early identification of labour resources, specialized training programs and other specialized recruitment techniques.

Changes in Law and Regulations

Common in international EPC contracts is the risk of new or amended laws and regulations and/or the risk of changes in judicial or administrative interpretation of the laws. These risks are typically viewed as outside the Contractor's control and therefore allocated to the Owner through a change order provision. The question becomes who bears the risk of interpretation of the law where there is no prior precedent? One course of action would be for the parties to discuss specific scenarios that could be anticipated from the contract and to address these possibilities within the contract so as to avoid disputes.²⁶

Performance Risks

²⁴ Nancy Wodka, "Risk Allocation in Nuclear Construction and Supply Contracts", Presentation at U.S. WIN Conference, July 20, 2010, www.winus.org/winus/files/meetings/National/2010/11c-Wodka.pdf

²⁵ Nancy Wodka, "Risk Allocation in Nuclear Construction and Supply Contracts", Presentation at U.S. WIN Conference, July 20, 2010

²⁶ Nancy Wodka, "Risk Allocation in Nuclear Construction and Supply Contracts", Presentation at U.S. WIN Conference, July 20, 2010

There are several different types of performance risks that can affect the successful outcome of the project and can be limited in the risk exposure to the parties with the proper risk allocation and risk exposure limitations. These include:

- Force majeure
- Labour Strikes
- Weather
- Failure to Perform

Force Majeure

Force Majeure events can be a risk to either party. However, typically force majeure is not clearly identified and defined in the contract, thus left subject to interpretation. Typical force majeure risks include “Acts of God”, fires, explosions, war, terrorism, acts of government, embargo, blockade, quarantine, etc. In order to avoid any interpretation issues, all force majeure events should be clearly identified including any limitations on recovery, such as time extensions but no compensation.

Strikes

As with force majeure, strikes should likewise be clearly defined. Strike risk is often delineated by industry wide strikes whose risk is typically borne by the Owner and site wide strikes, typically borne by the Contractor. One method to limit exposure due to labour action is through Project Labour Agreements (PLAs) that are established on the onset of the contract.

Weather

Weather risks can similarly be limited in exposure by also clearly defining and defining what constitutes a ‘severe’ or ‘extreme’ weather event. Baselines for measurement such as the National Oceanic Atmospheric Administration (NOAA) in the United States which provides expected weather conditions over a quantified the period of time for measurement, i.e. 10-year, 20-year, 100-year, etc. provides both parties with a clear expectation of how the project may be effected from both a time and cost standpoint due to weather events exceeding these baseline definitions as well as clear direction that only events affecting the critical path of the project would be entitled to any time extension as the result of a severe weather impact.

Failure to perform

The most common way to limit the exposure of an allocated risk is with a cap on the cost exposure for a liability. Typically an overall cap on liability is agreed to be no more than 100% of the contract price. When negotiating the EPC agreement, there are other negotiated terms that both the Owner and the Contractor will see relative to liability caps. The Owner will seek to carve out from the overall liability cap for matters such as death, personal injury, monies received under insurances, gross negligence and fraud.²⁷ The Contractor will look to limit its liability for liquidated damages for imposed delay and for failure to meet performance criteria, generally capped at 20% of the contract price. Typically each of these are limited to a

²⁷ Damian McNair, “EPC Contracts in the Power Sector”, DLA Piper Asia Pacific Projects Update, 2011, www.dlapiper.com, p. 5; Mary Anne Roff, “Risk Allocation in Major Construction Projects-The Use of Indemnities”, Eversheds, www.eversheds.com

percentage of the contract price with an aggregate cap for both, generally at 30% of the contract price.²⁸

In addition to a cap on liability, the parties can also consider waiving certain classes of damages including lost profits, indirect costs of delay, or of opportunities forfeited by poor performance.

When liability caps and waivers are discussed, most Contractors want that cap and/or waiver to be as low as possible thinking that they are bearing all the risk. While it is true that no caps or caps that limit to the cost of the project as well as waivers shifts a potentially large cost risk to the Contractor, it is also true that if a project that gets cancelled or seriously delayed, can have just as significant impact on the Owner. For example, lost profits on an oil platform delayed a year or a power plant that misses the high summer demand season can dwarf the consequences to the Contractor. Thus, both parties should mutually agree as to the caps and waivers as liability limitations nearly always impact the Owner disproportionately.²⁹

To protect the Owner against the Contractor's ability to perform, Owners will typically require financial security from the Contractor in the form of a bank guarantee or letter of credit, retention or withholding of a percentage of each payment, a parent company guarantee, and/or a performance bond. The bank guarantee generally is for a percentage of the contract, typically in the range of 5-15% of the contract price depending on a number of factors including other security available to the Owner. Retention typically ranges from 5-10% of each payment and a parent guarantee is a guarantee from the ultimate parent of the Contractor that provides it will perform the Contractor's obligations if, for whatever reason, the Contractor does not perform.³⁰

A common method of limiting exposure to a party for risk is through insurance. Partnerships Victoria states, "Insurance is a primary method of risk mitigation. A party bearing a risk may, through insurance, pass the financial consequences of the risk to a commercial insurer, effectively managing the risk for the price of the insurance policy."³¹

However, in order to ensure that insurance provisions are enforceable and recoverable, there are several factors that must be considered to achieve the most effective contractual risk allocation and insurance solutions:

- The treatment of risk by contractual allocation needs to be carefully coordinated with the transfer of risk by insurance so that they are consistent and complimentary
- The terms of the contract can affect the recovery available under insurance
- The trigger for the contract's risk allocation provisions needs to be carefully drafted to minimize costly demarcation disputes, in terms of both cost and schedule delay, between the contracting parties and/or their insurers.³²

Many Owners are also deciding to minimize the cost impact of insuring risk by electing to front the cost of liability insurance through an Owner Controlled Insurance Program (OCIP) or a

²⁸ Mary Anne Roff, "Risk Allocation in Major Construction Projects-The Use of Indemnities", Eversheds, www.eversheds.com

²⁹ Charles M. Sink, "Mega Project Construction Contracts: An Owner's Perspective", 55 *Rocky Mt. Min. L. Inst.* 21B-14 (2009)

³⁰ Damian McNair, "EPC Contracts in the Power Sector", DLA Piper Asia Pacific Projects Update, 2011, www.dlapiper.com, p. 5

³¹ Paul Tobin, "The Allocation of Construction Risks on a Mega-BOT: The Taiwan High Speed Rail Project", *The International Construction Law Review*, Pt. 4, 2008, p. 494

³² Paul Tobin, "The Allocation of Construction Risks on a Mega-BOT: The Taiwan High Speed Rail Project", *The International Construction Law Review*, Pt. 4, 2008, p. 494

Contractor Controlled Insurance Program (CCIP), where the project-wide insurance is priced openly and competitively.³³

Yet even another way to limit risk exposure is to use a “knock for knock” or “mutual hold harmless” indemnity. Parties assume liability for their own consequential losses regardless of fault, negligence or breach of duty.³⁴ Consequential losses, however, must be clearly defined and parties will in many cases be wrong to assume that claims for loss or revenue/profit will be excluded by many commonly worded exclusions. The parties’ intentions to exclude all liability for financial loss may not be given effect by the working frequently incorporated into their contracts. An example of how to clearly define consequential losses is included in the LOGIC’s Standard Conditions for the UK Offshore Oil and Gas Industry, General Terms, which provide:³⁵

“Consequential Loss” shall mean:

- (i) Consequential of indirect loss under English law; and*
- (ii) Loss and/or deferral of production, loss of product, loss of use, loss of revenue, profit or anticipated profit (if any), in each case whether direct or indirect to the extent that these are not included in (i), and whether or not foreseeable at the effective date of commencement of the Contract.*

The indemnity essentially comprises a financial obligation to reimburse the costs, expenses, etc. which another party has suffered as a result of a specific event along with other obligations including:

- “hold harmless”-releases the other party from legal liabilities’ by not suing it or otherwise pursuing it for payment; and stop or prevent others from bringing actions so far as the party is able to do so; and
- “Defend”-prevents third parties from causing hard to the other party, through litigation or otherwise.³⁶

Indemnities, however, are no different in what must be considered before inserting such clauses into the contract. As with other risk allocation clauses, they must be clearly and consistently written so as not to construe a different meaning should the wording be drafted differently in a separate section of the contract. In addition, the parties must decide and agree whether the indemnity covers any incident arising out of the contract, or only incidents arising from a specific range of services.³⁷ It is best not to use broad forms of indemnity provisions that make the Contractor responsible for the Contractor’s sole negligence as well as joint and Owner’s sole negligence. Such clauses are not cost effective and can hinder quality, timely compliance and the Owner-Contractor relationship.³⁸

³³ Charles M. Sink, “Mega Project Construction Contracts: An Owner’s Perspective”, 55 *Rocky Mt. Min. L. Inst.* 21B-12 (2009)

³⁴ Mary Anne Roff, “Risk Allocation in Major Construction Projects-The Use of Indemnities”, Eversheds, www.eversheds.com

³⁵ Mark Errington, “Allocation of Risk Issues in Offshore Construction Contracts”, Presentation, October 24, 2013, www.asiaoec.com/wp-content/uploads/pdf/downloads/2013/5Allocation_of...

³⁶ Mary Anne Roff, “Risk Allocation in Major Construction Projects-The Use of Indemnities”, Eversheds, www.eversheds.com

³⁷ Mary Anne Roff, “Risk Allocation in Major Construction Projects-The Use of Indemnities”, Eversheds, www.eversheds.com

³⁸ “SD-44-Impact of Risk Allocation and Equity in Construction Contracts”. Construction Industry Institute

5 SUMMARY OBSERVATIONS

The new construction environment is dictating that the Owner and the Contractor re-evaluate how they do business under an EPC contract. Every risk has an associated price, whether that be visible or hidden. Visible risk cost appears in the project tenders as contingency or insurance costs and can be compared. It is the onerous contract clauses that promote hidden costs. How risk is allocated will have a significant determination on how a project is financed. Owners can certainly transfer risk to the Contractor but need to recognize that in doing so, there is a cost to that risk premium. Allocating risk to the party most able to control and manage it is always a starting point, but there are caveats in doing so.

Innovative risk sharing arrangements have become the best method of allocating risk and reducing the total contract price. Careful thought out contract clauses relative to risk allocation and risk exposure limitation as so discussed herein that do not grossly and inequitable allocate all the risk to the Contractor positively impacts overall project performance and the Owner-Contractor working relationship.³⁹ In return, disputes can be minimized.

³⁹ "SD-44-Impact of Risk Allocation and Equity in Construction Contracts". Construction Industry Institute