

# EPC vs. EPCM in Construction Projects:

*Limiting Costs, Assessing Risks, and  
Determining Contractor Involvement*

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# Scott Cahalan



Scott is a partner in the construction practice at Smith Gambrell Russell LLP in Atlanta. He represents owners, developers, contractors, and others in the construction industry. His practice primarily consists of drafting and negotiating construction contracts, providing advice during construction, and litigation, arbitration, and mediation of construction disputes.

Scott was the primary drafter of the Associated Owners and Developers' AOD 2002 fixed price form construction contract, and AOD 2003 GMP form construction contract.

Scott is an instructor at the Georgia Institute of Technology where he has taught either Design and Construction Law, and Real Estate Development Law to graduate students for the last 12 years. He has also spoken at more than 55 seminars and webinars on construction contracts and a wide variety of construction law topics.

Before law school, Scott was an engineer with an ENR top-50 general contractor. He has experience in estimating, scheduling, cost accounting, and project management.

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# Rob James

Rob is a partner in and co-leader of the Energy & Infrastructure Projects team at Pillsbury Winthrop Shaw Pittman LLP, resident in both San Francisco and Houston. He has a construction practice focused on transactions and counseling for clients creating industrial, energy, infrastructure and public works of improvement.

Rob has published guidelines for EPC contract risk allocations and for developing fee, general condition and contingency percentages in fixed price and GMP bidding for major projects. He has served as a Lecturer at UC Berkeley Law on international investment projects, as well as speaking in international business and energy courses at UC Davis, Stanford, and the University of Hawaii law schools.

Rob combines his work with private developers and contractors with his longtime representation of public entities, such as the San Francisco Bay Area Rapid Transit District (BART), school districts, and universities, including on public-private partnership (PPP) project structures.

<https://www.pillsburylaw.com/print/content/12889/robert-james.pdf>

# Disclaimer

**This webinar will cover EPC and EPCM contracts in general. Our presentation does not constitute legal advice. Nor do we endorse one project delivery method or risk allocation clause over another.**

**We recommend that you either consult with—or become—an experienced lawyer licensed in the state where your project is located.**

# EPC, meet EPCM

- The engineering, procurement and construction (“EPC”) delivery method has long been the favored delivery method for complex infrastructure, innovative/state of the art manufacturing, and energy projects.
- The EPC contractor is the single point of responsibility for achieving an agreed upon level of performance, at a set price, within a set period of time.
- The engineering, procurement, and construction management (“EPCM”) delivery method has become a frequently proposed and adopted alternative.
- This webinar will explore uses, advantages and disadvantages of each delivery method.

# Learning Objectives

At the end of this program, participants will be able to:

- **Identify** typical roles and risks owners and contractors assume under each delivery method
- **Discuss** the advantages and disadvantages of using the delivery methods
- **Recognize** how the scope of work and price provisions can be varied to mitigate risks
- **Appreciate** factors that construction counsel and parties should consider in tailoring an EPC or EPCM contract for a particular project

# What is an EPC Contract?

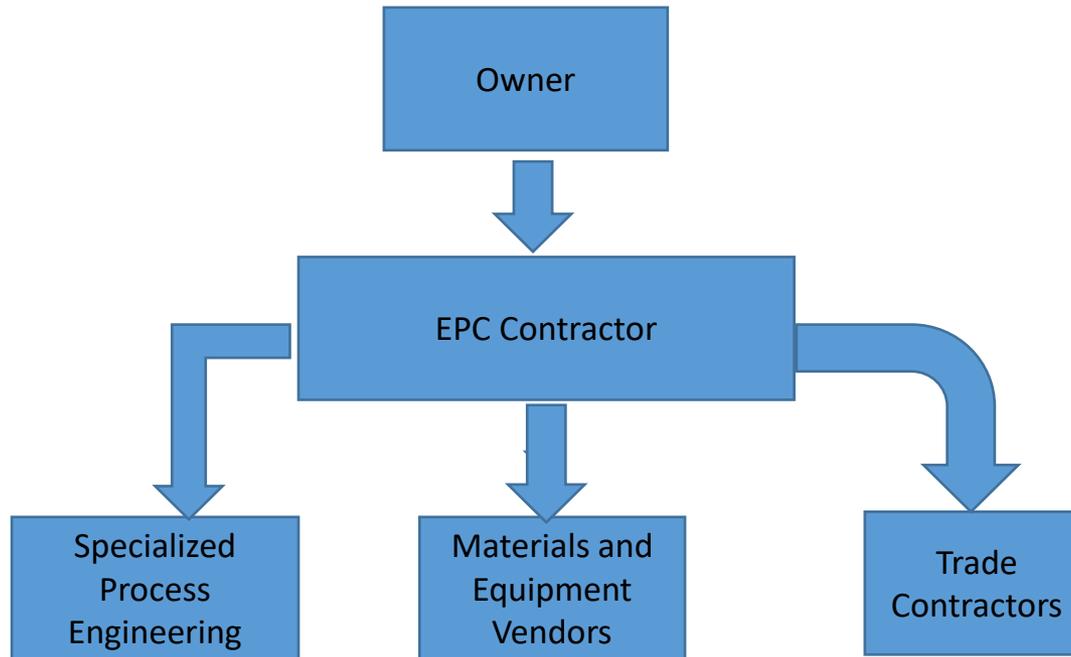
- An EPC contract is an engineering, procurement, and construction contract.
- Here, the “C” stands for *construction*—an undertaking by the contractor to modify real property.
- *Watch that “C”!*

# Fundamentals of EPC

An EPC contract is a type of design-and-build contract that typically obligates the EPC contractor to

- Engineer and design a facility,
- Procure and purchase all materials and equipment for the facility, and
- Construct and deliver to the owner a fully functioning facility on a “turnkey” basis that meets or exceeds the specified performance requirements, for an agreed upon price, within an agreed upon time period.

# EPC delivery method



# Potential Owner Benefits From EPC

- Single point of responsibility
- Selection of contractor on basis other than price
- Efficiency, innovation, and speed
- Price and time certainty
- Less administration and monitoring
- Less risk for owner to manage
- Performance guarantee
- Fewer changes and claims, *in principle*
- Satisfaction of financier/stakeholder requirements

# Potential Owner Drawbacks from EPC

- Completion of design is out of owner's control
- Higher upfront price due to contingencies
- Limited pool of qualified contractors
- Relying upon contractor for QA/QC
- Loss of checks and balances during design and construction
- Liabilities usually capped
- Consequences of default heightened
- Change disputes tend to be complex

# Potential Contractor Benefits From EPC

- Reduced competition
- Dealing with local licensing requirements
- More control over design and construction, less micromanagement by owner or engineer
- Efficiency, innovation, and faster delivery
- Higher profit potential
- Fewer changes and claims, *in principle*

# Potential Contractor Drawbacks from EPC

- Over-selling contractor capabilities
- Single source responsibility
- More design and construction risk
- Performance guarantees
- Long-tail surety bond or financial guaranty
- Delayed final payment
- Change disputes tend to be big and complex

# What is an EPCM Contract?

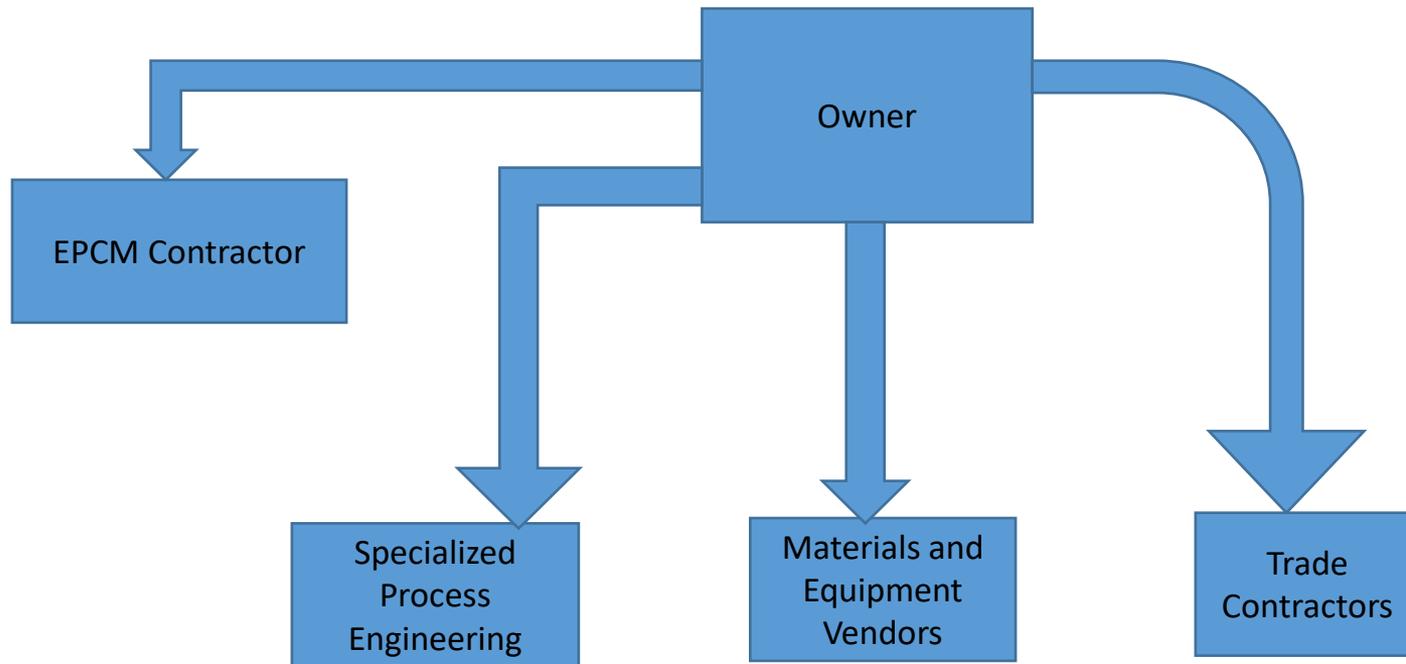
- An EPCM contract is an engineering, procurement, and construction management contract.
- Here, the “C” and “M” stand for construction management—a professional service, not an obligation to modify real property.

# Fundamentals of EPCM

An EPCM contract is a professional services contract that typically obligates the EPCM contractor to

- Provide the front-end and detailed engineering of the facility;
- Procure materials and equipment on behalf of the owner; and
- Negotiate, manage and administer the owner's purchase orders and construction contracts for an agreed upon fee.

# EPCM delivery method



# Independent Contractor vs Agent

“With respect to general principles of agency, ‘the line between an agent and an independent contractor is not really a line but a ‘twilight zone,’ with the answer inevitably revolving around the idea of control . . .

**The most characteristic feature of an agent's employment is that he is employed primarily to bring about business relations between his principal and third persons . . . .”**

*Aladdin Constr. Co., Inc. v. John Hancock Life Ins. Co.*, 914 So.2d 169 (Miss. 2005)

# Aladdin Constr. Co., Inc. v. John Hancock Life Ins. Co., 914 So.2d 169 (Miss. 2005)

- Owner contracted with CM to provide design and project management services for project to renovate a shopping mall
- Contract provided that (1) CM was an independent contractor and (2) CM was obligated to act in Owner's interests
- CM entered into trade agreements with four contractors
- Owner routed all payments to the contractors through CM, who failed to pay the contractors
- CM filed for bankruptcy
- The contractors sued Owner, alleging that CM was an agent to the Owner. Owner alleged that CM was a general contractor

# Aladdin Constr. Co., Inc. v. John Hancock Life Ins. Co., 914 So.2d 169 (Miss. 2005)

- Trial court granted summary judgment to Owner, finding that there was no disputed issue of fact that the CM was a general contractor because the Owner and CM contract said that the CM was an independent contractor with sole control over the performance of the Work
- The Supreme Court of Mississippi reversed, explaining that:
  - Despite the independent contractor language in the contract, the “...law recognizes that a person may be an independent contractor as to certain work and a mere agent as to other work for the same employer”
  - CM was an agent of the owner for purposes of paying the contractors because CM acted as a conduit for payment of the contractors.

# EPCM Contractor's typical independent contractor duties include ...

- Analyzing Owner's program and budget
- Providing advice on site use and improvements, and selection of materials, building systems, and equipment
- Production design
- Preparing schedules
- Determining availability of materials and labor, sequencing and phasing of work, and time for procurement of materials, installation, and construction
- Preparing cost estimates
- Determining costs of alternative designs and materials, preliminary budgets, life-cycles, and possible cost savings
- Obtaining building permits and special permits

# EPCM Contractor's Typical Duties as Agent Include ...

- Determining scopes of work and bid packages
- Receiving bids, preparing bid analyses and making recommendations to the owner for awarding contracts
- Negotiating contracts with contractors
- Making recommendations about contractor selection
- On-site administration of construction contracts
- Coordinating schedules of multiple contractors
- Coordinating sequence of construction and assignment of space in areas where the trade contractors will perform work

# EPCM Contractor's Typical Duties as Agent Include ...

- Coordinating safety programs
- Conducting meetings
- Monitoring/evaluating costs for work in progress; forecasting costs for incomplete work; and advising the owner as to variances between actual and budgeted or estimated costs
- Negotiating change orders
- Advising owner about claims, breaches, and default
- Scheduling and conducting tests and inspections

# Agent's Duty to Third Party MUST Be Independent of the Contract

“An agent's breach of a duty owed to the principal is not an independent basis for the agent's tort liability to a third party. **An agent is subject to tort liability to a third party harmed by the agent's conduct only when the agent's conduct breaches a duty that the agent owes to the third party.**”

Restatement (Third) of the Law of Agency, § 7.02 (2006 ALI)

# Potential Owner Benefits Using EPCM Delivery Method Include ...

- More control over design and construction
- Contractors acts in the owner's best interest
- Owner right to select trade contractors
- Lower upfront price than EPC delivery method
- Efficiency, innovation, and faster delivery
- Use of agent allows for more checks and balances during design and construction, including QA/QC

# Potential Owner Drawbacks Using EPCM Delivery Method Include ...

- No single source of responsibility
- Limitations of liability
- Liability for design defects within standard of care
- Greater risk of changes and claims
- More contract administration
- Liability for EPCM contractor's non-negligent acts and omissions within scope of agency
- No performance guarantee

# Potential Contractor Benefits Using EPCM Delivery Method Include ...

- Specialization
- Reduced competition
- May avoid local contractor licensing laws
- Less risk than EPC delivery method
- Not tied to performance guarantee or warranty
- Efficiency, innovation, and faster delivery

# Potential Contractor Drawbacks Using EPCM Delivery Method Include ...

- Over-selling specialization
- Cannot completely avoid risk
- Perception that the EPCM is expert
- Lower profit potential than EPC contract
- Disputes involve more parties, inherently complex

# Comparison: EPC and Design-Build

## Similarities

- Single point of responsibility
- More risk to contractor/design-builder than other structures

## Differences (also industrial vs. commercial origins)

- EPC closes out with mechanical completion, startup, and commissioning; design-build closes out with substantial completion and turnover
- EPC contractors are given performance requirements; design-builders are typically given project program and design basics
- EPC contracts usually transfer more risk to the EPC contractor, including site conditions, changes, and claims, for a higher price

# Comparison: EPCM and Construction Manager

## Similarities

- EPCM or CM acts as an agent of Owner
- EPCM or CM negotiates and manages the Owner's separate trade contracts

## Differences

- EPCM contractor has design responsibility
- EPCM contractor procures materials and equipment on behalf of Owner (as agent or as principal?)

# Variations: Performance Incentives

- Early completion bonus
- Shared savings
- Performance and efficiency bonus
- Cost, schedule, quality and safety—the “four horsemen”
- Detailed metrics and weightings of maximum bonus, or at owner’s discretion, or a hybrid

# Variations: Owner option to convert from EPCM to EPC

EPCM contract can give owner an option at the end of the front-end engineering phase to:

- Continue with EPCM through completion;
- Convert to EPC model with same contractor; or
- Replace EPCM contractor with a new EPC contractor.

**Hybrid option:** owner right to convert some work to EPC while leaving rest as EPCM (e.g., if a trade contractor defaults or just isn't working out)

# Benefits of option to convert EPCM Contract to EPC Contract

## Owner

- More control over design with EPCM than with EPC
- Single source of responsibility during construction with EPC

## Contractor

- Not locked into price before the design is complete
- More control over construction

# EPC guarantees and warranties

- Firm price and time guarantees in EPC contract
- Mechanical completion and commissioning tests
- Performance guarantees
- Design, procurement and construction warranties
- Parent cross-guarantees

# Mechanical Completion and Commissioning

- **Mechanical completion** when the facility is mechanically and electrically sound and is ready for initial start-up (RFSU), adjustment and testing.
- **Commissioning** when facility and its systems are verified to have been planned, designed, installed, tested, operated and maintained to meet the Owner's project requirements.
- These definitions trigger liquidated damages for delay, performance guarantees, and transfer of risk and insurance; not lien exposures or final work closeout.

# Performance guarantees

- Capacity
- Output levels (units/hour)
- Efficiency, emissions
- Energy usage
- Uptime levels
- Maintenance expense
- Determined over extended time period, or during a short controlled test

# Example of Performance Guarantee

**Guaranteed Power Delivery:** In the event that the actual metered power generated by the Facility fails to equal or exceed the Guaranteed Power Delivery for each of the first two years of operation, Owner shall be entitled to reduce the final payment by an amount equal to the actual metered power generated by the Facility and the Guaranteed Power Delivery at the rates established in Owner's power purchase agreement. Owner will pay Contractor any remaining balance of the final payment two years after the commercial operation date. Contractor will pay Owner within thirty days of its demand in the event that the final payment is not sufficient to cover the Guaranteed Power Delivery set-off.

# Example of Mechanical Warranty

Contractor represents and warrants that it is and will be at all times fully qualified and capable of performing every phase of the Work to complete the Facilities in accordance with the terms of this Agreement. Contractor warrants that all Work will be performed in accordance with all requirements of this Agreement. **Contractor shall design, engineer, and construct the Facilities to satisfy all applicable Legal Requirements, and the requirements of this Agreement and to produce a fully functional facility.** Contractor warrants that the Work, including each item of Equipment incorporated therein, will be new, will be of suitable grade of their respective kinds for their intended use as specified herein, will be free from defects in materials, construction, and workmanship, and shall conform in all respects all applicable Legal Requirements, the plans and specifications prepared in accordance with this Agreement, and all descriptions set forth herein, applicable construction codes and standards, and all other requirements of this Agreement. Contractor further warrants that it will repair, replace, or correct any failures or defects or deficiencies in the Work that occur during the Warranty Period including, where required, re-engineering any deficient systems at no cost to Owner. Contractor shall, at Owner's request, assign all Subcontractor, supplier and manufacturer warranties to Owner after Substantial Completion.

# Cross-guarantees

- The EPC contractor's parent or affiliate guarantees the EPC contractor's performance of the contract because of consequences to the owner of the EPC's contractor's default.
- The owner's parent or affiliate (or JV member) guarantees the owner's timely payment to the EPC contractor because of the financial risk of performing an EPC contract. Often, this is an exception to a "non-recourse" project finance structure.

# Contractor Parent Guaranty

**Contractor Security:** Within ten (10) days of both Parties signing this Agreement, as a guarantee in full of its payment and performance obligations hereunder, Contractor shall cause the Contractor Parent to provide to Owner a guaranty in the form set forth in Exhibit N-1 (the “Contractor Parent Guaranty”) to Owner to be maintained in full force and effect in accordance with the terms thereof. Except for pending claims, the Contractor Parent Guaranty shall terminate upon the earlier to occur of (i) the date of indefeasible payment or satisfaction by Contractor of all of its obligations due and payable, or required to be performed, under this Agreement, in each case on, prior to, or in connection with the Final Completion Date, except that only with respect to claims under any Warranties, indemnities or other obligations that survive the termination of this Agreement, such termination date shall be the date of expiration of the applicable Warranty Period, indemnity obligation, or such other surviving obligation, as applicable, or (ii) the termination of this Agreement (other than a termination by Owner as a result of a Contractor Event of Default).

# Owner Parent Guaranty

**Owner Security:** Within ten (10) days of both Parties signing this Agreement, as a guarantee in full of its payment and performance obligations hereunder, Owner shall provide to Contractor a binding guaranty from its parent company or investors, as reasonably approved by Contractor, in a form to be determined and set forth in Exhibit N-2 (the “**Owner Parent Guaranty**”) to be maintained in full force and effect in accordance with the terms thereof. Except for pending claims, the Owner Parent Guaranty shall terminate upon the earlier to occur of (i) the date of indefeasible payment or satisfaction by Owner of all of its obligations due and payable, or required to be performed, under this Agreement, (ii) the termination of this Agreement (other than a termination by Contractor as a result of an Owner Event of Default), (iii) the date on which Owner ceases to own one hundred percent (100%) of the Facility, or (iv) the date on which Owner Parent ceases to own, directly or indirectly, one hundred percent (100%) of the equity ownership interests of the Owner; provided, however, that with respect to the immediately preceding clauses (iii) and (iv), such Owner Parent Guaranty shall remain in effect until Owner or Owner Parent notifies Contractor that Owner has obtained debt commitments and equity capital sufficient to enable Owner to cover Owner’s remaining payment obligations under this Agreement (which notice shall be accompanied by written evidence reasonably demonstrating the same)

# Mitigating the EPC Contractor's Risk

- Restrictions on changes
- Limitations of Liability
- Waiver of Consequential Damages
- Limitations on Performance Guarantees
- Exclusive Warranty Remedies

# Restrictions on Changes

*8.2 Changes.* Either Party may submit a written Change Request to the other Party for additions to, deletions from, or other revisions to the Work. Contractor will evaluate each Change Request in terms of price, time, and scope to determine if it:

- (a) adds value, without increasing the cost, delaying Mechanical Completion, or impacting performance of the Project, in which event it will be approved;
- (b) adds value, at an increased cost, without delaying Mechanical Completion or impacting performance of the Project, in which event it will be approved with the cost allocated as set forth below;
- (c) adds value, but will either delay Mechanical Completion or impact performance of the Project, in which event it will be denied, unless the Parties mutually agree otherwise; or
- (d) does not add value, but it will decrease the cost without delaying Mechanical Completion or impacting the performance of the Project, in which event it will be approved if the Change Request was submitted before approval of the design, otherwise it will be denied.

# Limitations of liability

**Aggregate Limit of Liability.** Contractor's total liability for Delay Damages shall not exceed 20% of the Contract Price. Except as otherwise specifically set forth herein, Contractor's total aggregate liability to Owner, from the sum of any and all causes (including all Delay Damages and Contract Capacity Damages payable hereunder and all claims under the warranties described in this Agreement), whether based on contract, tort (including negligence), strict liability or any other cause of action, shall in no event exceed ten percent (10%) of the Contract Price; provided, however, that the foregoing limitation shall not apply to acts of gross negligence, willful misconduct, or fraud by Contractor.

# Waiver of Consequential Damages

**Waiver of Consequential Damages:** Neither Party shall be responsible to the other Party for special, indirect, exemplary or consequential damages of any nature for any and all causes, whether liability arises as a result of breach of contract, tort liability (including negligence), strict liability, by operation of law or in any other manner and whether arising before or after the Substantial Completion Date. Contractor's liability for indemnities and third-party claims, Delay Damages, or Contract Capacity Damages shall not be considered special, indirect, exemplary or consequential damages under this Agreement.

# Limitation on Performance Guarantee

**Guaranteed Capacity:** If based on the results of the Capacity Test, the Facility has satisfied the Minimum Guaranteed Capacity, but not the Guaranteed Capacity, Contractor shall pay liquidated damages to Owner of Three Hundred Thousand US Dollars (\$300,000) per MWAC for the difference between the actual capacity and the Guaranteed Capacity.

# Sinclair Wyoming Refinery Co. v. A&B Builders, Ltd., 989 F.3d 747 (10th Cir. 2021)

- In year 1, Owner purchased and moved a refinery unit (the “Unit”) from California to Wyoming.
- In year 2, Owner entered into an EPC contract with Contractor to field engineer and install the Unit in conformance with process design documents (the “Process Design”) provided by Owner.
- In year 2, Contractor subcontracted the field engineering to Designer, and the construction to Subcontractor. The Process Design required that a control valve be manufactured out of stainless steel; it was made of carbon steel instead.
- In year 9, the Unit caught fire and exploded when the control valve fractured and released flammable hydrogen gas, causing Owner to incur damages of \$117.35 million

# Sinclair Wyoming Refinery Co. v. A&B Builders, Ltd., 989 F.3d 747 (10th Cir. 2021)

- Owner attributed the failure of the control valve to two causes:
  - The control valve was made from carbon steel instead of stainless steel, making it more susceptible to high temperature hydrogen attacks (“HTHA”), a chemical reaction; and
  - The control valve’s welded-on flanges had a wall thickness thinner than that required by the original design of the Unit.
- Owner sued Contractor for breach of contract and it sued Contractor, Designer, and Subcontractor for negligence.
- The trial court dismissed the claims against Contractor, Designer, and Subcontractor because the warranty provision in the EPC contract provided an exclusive remedy to Owner for claims relating to the quality of the Work that precluded liability outside the warranty period.

# Sinclair Wyoming Refinery Co. v. A&B Builders, Ltd., 989 F.3d 747 (10th Cir. 2021)

The warranty provided that:

All warranties of any nature made in connection with the work are limited to those set forth in this Article 1. Contractor disclaims all statutory, oral, expressed or implied warranties, including warranties of merchantability or fitness for a particular purpose, and warranties arising from course of dealing or trade usage. Owner shall allow Contractor to perform tests and/or remedial services at a mutually agreeable time . . . . *The remedies of Owner set forth in this Article 1 constitute Owner's sole and exclusive recourse with respect to the quality of the work, and Owner shall release Contractor from any liability in excess thereof, regardless of Contractor's fault, negligence or strict liability.* Such exclusive remedies shall not be deemed to have failed for their essential service so long as Contractor is willing and able to repair or replace the defective work as prescribed above. **Contractor shall have no liability unless notified in writing of a defect within 12 months of Mechanical Completion consistent with the conditions stated in Article 1.0.**

# Sinclair Wyoming Refinery Co. v. A&B Builders, Ltd., 989 F.3d 747 (10th Cir. 2021)

The United States Court of Appeals for the 10<sup>th</sup> Circuit affirmed, explaining that “Article 1.7’s unambiguous language bars the breach-of-contract [and the negligence] claim. Article 1.7 contains (1) an exclusive-remedies clause and (2) a limitation-of-liability clause. It states that “[1] the remedies of [Owner] set forth in this Article 1 constitute [Owner’s] sole and exclusive recourse with respect to the quality of the work, and [(2)] [Owner] shall release Contractor from any liability in excess thereof, regardless of Contractor’s fault . . . .”

# Questions and Answers

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# **EPC VS EPCM IN CONSTRUCTION PROJECTS: LIMITING COSTS, ASSESSING RISKS, AND DETERMINING CONTRACTOR INVOLVEMENT**