Research on the Analysis of Core Clauses and Risk Prevention in EPC Turnkey Contracts

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Abstract: The EPC (Engineering, Procurement, and Construction) Turnkey contracting model, leveraging its advantages in integrated management, has been widely adopted in the engineering construction sector. However, contracts under this model encompass multiple legal relationships involving design, procurement, and construction, where poorly designed clauses are prone to triggering various disputes. Based on the core characteristics of EPC Turnkey contracts, this paper focuses on analyzing the legal implications and practical essentials of key clauses concerning contract validity, joint venture liability, payment settlement, change management, and claim procedures. It examines potential legal and commercial risks associated with these clauses and proposes targeted risk prevention strategies informed by industry practice, aiming to provide references for construction entities to standardize contract management and mitigate performance risks.
***Keywords*:** EPC Turnkey contract; core clauses; risk prevention; contract management

1. Introduction

With the deepening of market-oriented reforms in the engineering construction field, the EPC Turnkey model has become a mainstream contracting method in infrastructure construction, energy projects, and other sectors due to its ability to facilitate coordinated control across design, procurement, and construction phases, effectively shortening project duration and controlling costs. EPC Turnkey contracts possess a dual nature, combining elements of civil contracts and administrative regulation. Their clause design must balance technical standards, legal norms, and commercial interests. Currently, issues such as inconsistent understanding of core contract clauses and inadequate risk prevention mechanisms within the industry are prominent, leading to frequent disputes in practice, including contract invalidity, payment controversies, and unclear division of responsibilities. Therefore, systematically analyzing the core clauses of EPC Turnkey contracts, accurately identifying underlying risks, and establishing a scientific prevention framework hold significant theoretical and practical importance for promoting the healthy development of the EPC model and safeguarding order in the engineering construction market[1].

2. Analysis of Core Clauses in EPC Turnkey Contracts

2.1 Fundamental Clauses on Contract Validity

Contract validity is the prerequisite for performance. Determining the validity of an EPC Turnkey contract requires meeting both the general conditions for the effectiveness of civil contracts and the special regulatory requirements specific to the construction sector. According to Article 40 of the Urban and Rural Planning Law, EPC contracts for projects lacking a Construction Project Planning Permit are invalid. Judicial practice confirms that although EPC contracts include design and procurement components, their essence remains construction project contracts; thus, the absence of a planning permit results in fundamental invalidity. Furthermore, Article 10 of the Administrative Measures for Engineering General Contracting of Building and Municipal Infrastructure Projects requires the general contractor to possess “dual qualifications” (both design and construction qualifications) or to employ a qualified joint venture. Incomplete qualifications of the contractor or non-compliance of the joint venture can directly cast doubt on contract validity. Therefore, fundamental validity clauses must clearly stipulate responsibilities for providing project compliance documents (planning permits, construction permits, etc.) and qualification requirements, which is the core prerequisite for ensuring contract legality.

2.2 Joint Venture Liability Clauses

Due to high technical complexity and wide professional scope, EPC projects often employ a joint venture contracting model. Article 31 of the Tendering and Bidding Law explicitly states that all parties of a joint venture shall jointly sign the contract with the tenderee and bear joint and several liability for the awarded project. Core clauses must clearly define the internal division of rights and responsibilities among joint venture members and the manner of external liability assumption.

In practice, the primary risk lies in vague internal division of duties, potentially leading to buck-passing or assumption of unintended liability. Therefore, contract clauses should systematically detail the scope of work, responsibility proportions, and dispute resolution mechanisms among joint venture parties, while clarifying the boundaries of external joint liability and internal recourse paths. This approach helps prevent internal joint venture disputes at the clause design stage[2].

2.3 Payment Settlement Clauses

Payment settlement clauses are the core economic terms of EPC Turnkey contracts. A lump-sum fixed price model is commonly used in practice; however, this price is not absolutely "fixed." According to Article 16 of the Engineering General Contracting Management Measures, under a lump-sum fixed price model, the contractor may claim for price adjustment under circumstances such as changes to basic project data provided by the owner (e.g., erroneous geological data) or adjustments in laws and policies (e.g., upgraded environmental standards). Contract clauses must explicitly define the triggering conditions, calculation methods, and approval procedures for price adjustments, which is crucial for balancing the interests of the owner and the contractor. Failure to specify adjustment mechanisms in the clauses can easily lead to payment disputes when statutory or agreed conditions for adjustment arise. Therefore, precise clause design is needed to define the boundaries and operational rules for price adjustments, ensuring fairness and smoothness in payment settlement.

2.4 Change Management Clauses

Given the long implementation cycles and numerous uncertainties in EPC projects, engineering changes are often unavoidable. Change management clauses must clearly specify the triggering conditions for changes, written confirmation procedures, and associated time limits. According to Judicial Interpretation (I) of Construction Project Contracts (Article 19), if the contractor fails to submit variation order documents within the agreed time limit, it is deemed that no price change is involved. Procedural compliance is central to change management. Failure by the contractor to submit documentation in the required form and timeframe may result in forfeiture of the right to price adjustment. Consequently, contract clauses should detail the entire process timeline for change application, review, and confirmation, specify the basis for calculating change-related costs and payment methods, and strictly stipulate the written form and signing requirements for change documents to ensure standardized management and protect contractual rights[3].

2.5 Claim Procedure Clauses

Claims are an essential means for safeguarding rights during EPC project performance. Claim procedure clauses must adhere to "timeliness" and "written form" requirements. Clause 16.2 of the Model Text for Construction Project General Contracting Contracts specifies that a claim notice must be submitted within 30 days after the occurrence of the claim event; overdue submission is considered a waiver of rights. Judicial practice often does not support claims submitted beyond stipulated time limits. Therefore, the "timeliness" and "written form" requirements must be clearly defined in the contract. Clauses should precisely define the scope of claim events, specify submission deadlines, required content, review processes, and objection handling procedures for claim notices, and standardize the submission criteria for supporting evidence. This provides a clear basis for the lawful exercise of claim rights.

3. Risk Prevention Strategies for Core Clauses in EPC Turnkey Contracts

3.1 Strengthen Pre-Signing Compliance Review

First, conduct thorough pre-contract compliance checks, focusing on verifying the status of the project's key permits ("Four Certificates") and the owner's funding proof, ensuring the project has a legal basis for implementation. Second, strictly review contractor qualifications. Under a joint venture model, verify that each party's qualifications match project requirements to avoid qualification gaps or mismatches. Third, standardize contract text by prioritizing the use of the Model Text for Construction Project General Contracting Contracts, tailoring special conditions based on project specifics to ensure clauses comply with legal provisions.

3.2 Refine Clause Design to Build a Risk Firewall

At the clause design level, optimize stipulations targeting core risk points: First, clearly define the internal responsibility ratios and recourse mechanisms within a joint venture to mitigate joint liability risks. Second, adopt a hybrid pricing model like "partly fixed, partly adjustable" (e.g., design fee fixed, main material price adjustable if fluctuation exceeds 5%) to reduce price volatility risk. Third, detail change and claim procedures, specifying time limits and evidentiary standards, and implement a "dual-signature system" (requiring signatures from both the owner's representative and the supervisor) to formalize change documents. Fourth, pre-agree on the valuation basis and asset disposal plan for contract termination liqui-

dation to prevent settlement disputes.

3.3 Enhance Evidence Management During Performance

Establish a robust evidence documentation system during contract performance: First, for critical documents like change notices and claim reports, use EMS mail with notarized delivery records and simultaneously send emails with read receipts to ensure complete delivery documentation. Second, regularly organize project progress records, quality acceptance documents, payment vouchers, etc., to form a complete evidence chain. Third, for claim events, promptly collect evidence such as force majeure certificates and third-party inspection reports to substantiate claims.

3.4 Employ Reasonable Risk Transfer Mechanisms

For risks difficult to avoid, utilize contract clauses and insurance mechanisms for risk transfer: First, explicitly allocate specific risks (e.g., material price fluctuations, certain construction risks) to subcontractors or suppliers through contract terms. Second, purchase insurance products like Construction All Risks Insurance and Third-Party Liability Insurance to cover risks from natural disasters, accidents, and other force majeure events. Third, for high-risk projects, introduce third-party guarantee mechanisms to reduce performance risks.

4. Conclusion

The core clauses of EPC Turnkey contracts are pivotal for regulating project execution and balancing stakeholder interests. The scientific rigor and compliance of their design directly impact project success. In practice, focused attention should be given to the six core areas: contract validity, joint venture liability, payment settlement, change management, claim procedures, and termination liquidation, with precise identification of potential risks related to compliance, responsibility allocation, and payment settlement. By strengthening pre-signing compliance reviews, refining clause design, enhancing evidence management during performance, and reasonably employing risk transfer measures, contract risk prevention capabilities can be effectively improved. As the EPC model continues to gain traction, it is necessary to further optimize contract management systems by integrating industry practice and legal updates, thereby promoting high-quality development in the engineering construction sector.

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