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A Brief Discussion on Problems Identified in the Audit of Water Conservancy Construction Projects and Their Solutions

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Abstract

Water conservancy construction projects involve the use and management of natural water resources through artificial means to meet the needs of human society for water use and security. These projects encompass flood control and disaster mitigation, water supply, irrigation, hydropower generation, navigation, ecological protection, and other aspects. They are a vital part of national infrastructure, significantly contributing to socio-economic development and safeguarding people's lives and property. With the continuous increase in national investment, the management level of these projects is also improving. Auditing water conservancy construction projects involves reviewing and supervising their authenticity, legality, and effectiveness. It is a crucial component of project management. This paper draws on years of practical experience in auditing water conservancy projects, clarifying the audit methodologies and addressing common issues. It conducts in-depth research and analysis of typical problems and proposes a series of countermeasures and suggestions. These aim to enhance audit verification capabilities, better fulfill audit supervision duties, and promote the high-quality development of water conservancy construction project audits.

Keywords: Water conservancy construction; Audit methodology; Project management; Infrastructure development.

1.Introduction

Water conservancy is the lifeblood of the national economy and a vital strategic resource for the sustained and stable development of society. In early 2011, the State issued the "Decision

on Accelerating the Reform and Development of Water Conservancy" as the Central Government's No. 1 document, highlighting the critical role of water conservancy in flood control, water supply, food security, economic security, ecological security, and national security. Water conservancy construction projects involve the use and management of natural water resources through artificial means to meet human needs for water usage and security. These projects typically encompass flood control and disaster mitigation, water supply, irrigation, hydropower, navigation, and ecological protection. As a key component of national infrastructure, they play a significant role in supporting socio-economic development and ensuring the safety of people's lives and property.

With increasing national investment, the management level of water conservancy construction projects has also been improving. Auditing these projects involves reviewing and supervising their authenticity, legality, and effectiveness, making it a critical aspect of project management. This paper draws on many years of practical experience in auditing water conservancy engineering projects. It clarifies the audit methodologies and addresses common issues through in-depth research and analysis of typical problems. Finally, it proposes a series of countermeasures and recommendations to enhance audit verification capabilities, better fulfill audit supervision duties, and promote the high-quality development of water conservancy construction project audits.

2. Water Conservancy Construction Project Audit: Content and Main Ideas

(1) Management and Supervision by Competent Authorities

The audit assesses whether the competent authorities have established appropriate systems or regulations for fund allocation, project construction, and project completion and acceptance. It also examines whether regular inspections and supervision are conducted. The focus is on identifying issues such as incomplete systems, poor implementation, and negligence in oversight responsibilities.

(2) Fulfillment of Capital Construction Procedures

The audit examines compliance with all necessary construction procedures, including project application reports, approval documents, environmental impact assessments, land use planning permits, building construction permits, contract signing, bidding and tendering, special acceptances, and project completion acceptances. It ensures that projects adhere to these required procedures.

(3)Project Bidding and Tendering

This aspect reviews the compliance of bidding procedures for each section of the project, the preparation and scientific validity of bid evaluation methods, and the division and selection methods for bidding sections. It evaluates whether the bidding procedures comply with regulations, whether projects improperly bypass the bidding process, and whether contract terms are consistent with the bidding documents.

(4)Management of Project Contracts

The audit evaluates the standardization and timeliness of contract signing, as well as the authenticity and reasonableness of contract payments (including advance, progress, and settlement payments), along with fees for surveys, design, supervision, consulting, monitoring, and testing. It ensures that contracts are genuine, properly signed, and strictly adhered to by all parties.

(5)Internal Controls of the Project:

This involves reviewing the establishment and implementation of the construction unit's internal control systems. It assesses whether organizational control, progress control, quality control, and investment control are in place and operating effectively, and whether there are any management irregularities. The audit also examines the construction unit's oversight of the performance of third-party entities such as bidding agents, supervisors, and auditors. This comprehensive approach ensures thorough oversight and compliance throughout the lifecycle of water conservancy construction projects.

3.Problems Identified in the Audit of Water Conservancy

Construction Projects and Analysis of Their Causes

(1)Inadequate Implementation of the Project's Proxy System

Although relevant national laws and regulations have long stipulated the "proxy construction system," its essence is rarely understood and operational provisions are weak. The development of the "construction management mode" in China is quite slow, with many construction units directly rejecting the "proxy construction system" management mode. The most significant problems identified in the audit include unclear positioning, undefined responsibilities, and lack of a clear boundary of duties. Additionally, there is an absence of a comprehensive responsibility assessment mechanism. Most water conservancy projects do not implement the proxy system, leading to a failure in delineating the responsibilities of investors and applicable parties. As a result, the management advantages of the proxy system are not realized. When risks arise, parties involved can easily shirk their responsibilities, dampening the enthusiasm of the proxy construction party and hindering the smooth implementation of the proxy system management mode.

The primary reasons for these problems include imperfect laws and regulations and unclear definitions of the rights and responsibilities of all parties. Additionally, changing the mindset of the construction parties, who are accustomed to traditional management modes and lack trust in the system, is challenging. Furthermore, the incentive and constraint mechanisms are weak, lacking effective supervision and punitive measures. Lastly, communication and coordination mechanisms are inadequate, with untimely and inaccurate communication between the proxy construction unit and the project construction units, design units, and construction units.

(2) Violations of Capital Construction Procedures

Water conservancy project capital construction procedures encompass the entire project lifecycle, from initiation to completion and acceptance, including design, bidding, construction, and acceptance. Given the large scale, high cost, and numerous constraints of water conservancy construction projects, it is crucial to adhere strictly to these procedures. For instance, flood control and mitigation projects require preliminary work like "three passes and one leveling," which can disturb the surface and damage vegetation, leading to soil erosion and environmental pollution. Therefore, laws mandate that construction units prepare soil and water conservation programs and environmental impact reports for approval before commencing work. However,

the audit revealed that some projects began construction without these approvals, increasing the risk of soil erosion, ecological pollution, and other damages.

The main causes of these issues include a lack of understanding and a biased perception of the importance of these procedures. Some construction units are in a hurry and focus solely on speed. Additionally, supervision is ineffective, with penalties for violations not stringent enough to deter non-compliance. There is also insufficient implementation of laws and regulations, with inadequate publicity and education. Finally, project management capacities are insufficient, with chaotic internal management, lack of effective organization, and coordination within construction units.

(3)Irregularities in the Preparation of Project Tender Control Prices

The project bidding control price is crucial in the bidding process, ensuring reasonable project costs, regulating market behavior, guaranteeing project quality, and improving bidding efficiency. Proper preparation and use of the bidding control price can mitigate risks of excessive or insufficient project costs. However, the audit found that some construction units did not follow the bill of quantities pricing specifications, instead directly referencing the approved budget estimate. This lack of a pricing basis undermines the scientific reasonableness of the control price, posing hidden risks of uncontrolled investment costs and compromised project quality.

The primary reasons for these problems include a lack of professionalism among preparers and insufficient understanding of relevant laws, regulations, and pricing specifications. Time pressure often leads to hasty preparation of control prices. Moreover, internal audit mechanisms are imperfect, with a lax audit process that leaves loopholes.

(4)Laxity in Project Contracting

Contracts, reflecting the true will of both parties, are essential legal documents. However, some contracts are signed hastily, based on long-standing partnerships rather than careful consideration. This results in contracts that are poorly studied, non-standardized, incomplete, and full of loopholes. The audit found significant deficiencies in contract terms, such as a lack of total control over work volumes and prices, unclear obligations, subcontracting provisions, price

adjustments, progress payments, settlement, and acceptance details. These issues often lead to settlement disputes and economic conflicts.

The main reasons for these problems include low legal awareness and insufficient understanding of the importance of contracts. Additionally, contract templates are flawed, lacking clarity and completeness. Professional guidance is often missing, with no participation from legal and contract management experts. Finally, the auditing process is lax, with formalized internal audits and weak accountability for auditing personnel.

(5) Inadequate Project Internal Control Management

Internal control management issues manifest primarily in the absence of effective on-site management by construction units. The audit found instances where raw materials and semi-finished products, such as rebar, were not properly covered, leading to corrosion and affecting construction quality. Additionally, third-party agencies often fail to perform adequately, with audit firms not thoroughly verifying measure fees. Some supervisory units did not fulfill their duties, failing to strictly review and control changes, visas, progress payments, and material usage proposed by construction units. This includes issues like construction materials lacking factory certificates of conformity or not being inspected according to regulations, incomplete records of concealed works, and overpayment of progress payments.

The main reasons for these problems include an inadequate internal control system, with loopholes and deficiencies that cannot adapt to the dynamic changes and complexities of projects. The supervision mechanism is also weak, with insufficient internal audit supervision and a lack of effective assessment and accountability mechanisms. Additionally, the quality of personnel is uneven, with involved parties lacking necessary professional knowledge, skills, risk awareness, and responsibility.

4. Countermeasures and Recommendations for Addressing Problems Identified in the Audit of Water Conservancy Construction Projects

Based on the problems identified in the implementation of water conservancy construction projects, this chapter proposes high-quality countermeasures and audit recommendations in the areas of top-level design, management systems, legal education, and professional training.

(1)Implementing Relevant Policy Requirements and Improving the Construction Management System

Strictly enforce relevant policies and regulations on the construction management of water conservancy projects, and enhance organizational leadership and business guidance. Improve the project construction management system and related laws and regulations. Strengthen the primary responsibility of the project legal entity, clarify construction concepts and management standards, and delineate the rights, responsibilities, and benefits of the involved parties, including the construction side, operation side, and other participants. This will enhance the effectiveness of construction management in water conservancy projects.

(2)Strict Implementation of Capital Construction Procedures and Promotion of Standardized Construction Works

Construction units should engage in early planning, strictly adhere to the fundamental construction procedures, and timely apply for the necessary approvals during the initial stages. Competent departments should strengthen supervision and ensure that construction units follow the required procedures and fulfill approval formalities in accordance with national laws and regulations. Penalize construction units that commence work before obtaining the necessary approvals, in accordance with relevant laws and regulations.

(3)Standardizing the Bidding System and Strengthening Investment Cost Control

Enhance cost-related professional training to improve the qualifications of preparation staff. Establish a strict audit mechanism, conduct multi-departmental collaborative audits, and introduce third-party professional audits. Strengthen market research to accurately assess material prices and other market information. Adhere strictly to the bill of quantities pricing specifications to control investment costs and reduce waste. Implement a system of accountability to hold relevant personnel responsible for irregularities that lead to adverse consequences.

(4)Strengthening Contract Management and Enhancing Awareness of Legal Risk Prevention and Control

Enhance professional training in contract management and conduct comprehensive legal education to improve the operational levels of contract management departments and personnel. Utilize the expertise of legal advisors and leverage legal tools for contract management. Conduct thorough contract evaluations to avoid risks and manage the entire contract execution process proactively to prevent disputes and improve investment performance.

(5)Strengthening Supervision of Project Implementation and Strict Accountability

Enhance performance control of participating units and third-party organizations by clarifying work requirements and responsibilities, and implementing supervision, assessment, reward, and punishment mechanisms. Enforce the accountability system strictly. Ensure adequate staffing in accordance with contract and bidding document requirements. Manage construction quality and safety rigorously to improve the overall quality and safety management of the project.

5.Conclusion

The audit of water conservancy construction projects plays a crucial role in managing these projects, ensuring construction quality, controlling costs, and enhancing investment efficiency. By examining and analyzing the issues identified in water conservancy project audits, appropriate corrective measures have been proposed to guide future audits effectively. It is essential to strengthen audit supervision across all stages of project management, including planning, bidding, contract execution, construction, and final settlement. This approach is aimed at ensuring the smooth implementation of water conservancy construction projects and maximizing investment benefits.

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