

# The Problems and Countermeasures of Construction Management of Water Conservancy Project

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**Abstract:** The construction management of water conservancy project, with characteristics as wide range and multi-field, includes construction process management measures and completion inspection and acceptance management. There are a series of problems in the construction management of water conservancy project at the present stage, such as quality control and security administration; therefore, corresponding measures should be taken to solve the urgent problems. In the process of water conservancy project construction, the proprietor should supervise and monitor the contractor to establish and improve the system of safety management, formulate strict safety supervision system, strengthen the contract management and quality management of water conservancy construction.

## Introduction

With the development of China's economy, the level of water conservancy construction management is increasing. In order to strengthen the flood control and disaster relief work, China attaches great importance to the construction of water conservancy projects, striving to achieve effective flood prevention, protection of life and property of the people. This is a rare opportunity for the development of China's water conservancy construction management work. However, the composition of hydraulic engineering is very complex, and it is very sensitive to the effects of various factors. The management has a direct impact on the efficiency of water conservancy project and the normal operation of the project. Therefore, we should clearly recognize the importance and necessity of the water conservancy construction management, improving the quality of construction projects, making effective management of water projects, which is favorable for the national economy and sustainable development of water resources.

## Connotation and Characteristics of Water Conservancy Construction Management

Water conservancy construction management includes the management measures during the process of construction and the management of the completion work. The contract management is the main content of the project construction management, and it mainly refers to the control of the quality of water conservancy construction, the duration and investment in accordance with the contract. In the meantime, it involves coordinating the construction plan and the relationship between the parties. Finally, it will form a contract management pattern in which the formation of the contractor, the owner, and the supervision tripartite are mutual co-ordinations and restrictions, and the supervision part is the core of contract management. The construction process management includes: the project management staff should assist the legal person of the project do the pre-construction preparation work well; to determine the design drawings which should be reviewed comprehensively by the design department, the project management and the technical department; to carry out the qualification

examination and identify contractors and subcontractors; to monitor the progress and quality of construction, testing the safety protection equipment of the construction; to make construction schedule plan and make preparation for the project material; in strict accordance with the rules and regulations of the construction unit and the relevant national standards for the construction industry. After the project is completed, accept the relevant competent department's inspection and actively cooperate with relevant departments to do the final acceptance of the work. The management of water conservancy construction projects has always been the main features of complex and influencing factors. But to recognize this is not enough, in order to make the project management more scientific and reasonable we should have a more profound understanding of the water conservancy construction management features. Compared with other water conservancy construction management, the project management has its own characteristics: it is involved in a wide range of fields, mainly relating to environmental protection, urban construction, roads, power, industrial, mining and many other fields; it has large regional differences for the reason that the geological conditions and construction environment of different projects or different sections of the same project are very different, resulting in different water conservancy project construction also has significant differences; lack of unified quantitative standards, the construction management performing in various forms; it is characterized by a high level of uncertainty because the water conservancy construction is influenced by the natural environment and other human factors, what's more, the occurrence of these factors has a significant unpredictability; it is involved in multi-subject and multi-field, including legal, gardens, meteorology, economics, geology, management and other disciplines. <sup>[1]</sup>

## **Problems in the Construction Management of Water Conservancy Project**

### **Safety Management Problems**

First of all, there are a lot of security risks in the water conservancy project construction site, such as the inadequate security staffing, the insufficient safety testing equipment and other facilities, not enough financial investment in safety and technical aspects in the construction process, and the imperfect construction safety management system. All these restrict the smooth development of the safety management work.

Secondly, in the process of the construction of water conservancy project, some enterprises ignore the construction safety. In order to pursue progress and save time, a considerable part of the security measures are cut as an unnecessary part. This makes a lot of staff's life and safety exposed to danger and cannot guarantee the safety of water conservancy project itself, damaging the quality of the project itself. All these greatly increase the incidence of accidents. Once an accident occurs, it will cause the project to be extended. In addition, the assessment criteria of hydraulic engineering safety technology are not yet mature. Many technologies which cannot meet the safety needs are being used in a large number of water conservancy project constructions, burying hidden dangers for the whole project.

### **Engineering Quality Problems**

First of all, the quality problems of water conservancy projects can not be ignored. Due to the lack of a sound management system in the construction units, they are not fully aware of the importance of project quality management. At the same time, the means and level of management is relatively backward, and then the supervision of the relevant regulatory authorities is inadequate. What's more, the quality of the project in the final acceptance stage is not strictly controlled. All these increase the difficulty of engineering management.

Secondly, shoddy work and use of inferior materials phenomena exist in some construction enterprises in the process of construction. Low costs mean the late great interest. Driven by interests, some staff ignore the engineering quality and skimp the project funds privately. In addition, part of the construction business does not pay much attention to the internal management system and not form sound internal management mechanisms which are not conducive to the commencement of

construction work safety supervision. Since the responsibility of some main government departments is not strong, showing a constant neglect of duty in the acceptance of the project, without strict control of the quality of the project, so a lot of bean curd residue project are put into society.<sup>[2]</sup>

## **Countermeasures of Strengthening Construction Management of Water Conservancy Project**

### **Strengthen the Safety Management in the Construction Process**

The responsibility of safety supervision should be weightier than Mount Tai, so the owner shall supervise and urge the contractor to establish a sound safety management system and make a strict safety supervision system in the construction process of water conservancy project. The Contractor shall clear the responsibility for security, establish a clear system of rewards and punishments and increase the intensity of the responsibility for the accident. In addition, the safety management responsibilities should be clear according to the position of the management personnel step by step. What's more, the safety management personnel should make clear their personal responsibilities and do a good job of safety management. Through these measures it can restrict the project safety management personnel and then the safety management work can be improved and put in place. Security management personnel should make strict demands on themselves; meanwhile, they must strengthen safety education for employees uninterrupted throughout the construction process, so that everyone is well educated. We must frequently keep firmly in mind that safety is first and the construction workers should be armed with a comprehensive knowledge of safety, generally improving the safety awareness of employees. All these will escort the safety management work smoothly. Safety management is an important link in the construction of water conservancy project. In order to ensure the quality and efficiency of the project construction, the construction safety management should be put in the first place. Only to reduce the engineering accident, the loss can be reduced to a minimum, so as to realize the maximization of economic benefits of water conservancy construction enterprises.<sup>[3]</sup>

### **Strengthen Contract Management Of Water Conservancy Project Construction**

As an important subject of construction contract, the owner should have certain knowledge of contract law. When signing a contract, the owner should analyze the contract carefully to prevent contract fraud and contract loopholes. In the contract, on the construction of water conservancy project scope, project costs, the parties' obligations, breach of contract responsibility and other aspects of the money should be paid more attention. In particular, the terms of the contract should be carefully considered, the exclusion of the owners of the adverse terms of the contract, so that the content of the contract can be scientific and reasonable, and the fairness of both parties can be taken into account<sup>[4]</sup>. In addition to the careful handling of the content of the contract, if the owners find that the construction unit is in violation of the contract in the process of construction, they should safeguard their rights in accordance with the provisions of the contract and do not lose the best time to claim.

### **Strengthen Quality Management Of Water Conservancy Project Construction**

In the process of water conservancy construction, there are many factors linked to the quality, such as personnel quality, mechanical factors, environmental factors, etc. These factors need to be strengthened to ensure the quality of construction. The main requirements are the following:

First, water conservancy construction enterprises should strengthen personnel training. The construction of water conservancy construction is different from the general construction. It is related to the national economy and the people's livelihood, which has important significance for the national infrastructure construction. Therefore, strengthening water conservancy construction personnel training is the most important thing. Not only to promote their quality awareness, but also continue to improve their professional skills, reduce their operational errors, and thus improve the efficiency of construction and the quality of construction.

The second is to ensure the smooth operation of mechanical equipment which is the most prone to failure factors, affecting the smooth construction. In this regard, the construction enterprises should strengthen the maintenance of mechanical equipment and carry out timely maintenance to the malfunction mechanical equipment to ensure the quality of water conservancy project construction.

The third is to strengthen the environment control. The relatively large consumption of waste construction resources, the large amount of generated noise, the long construction period and other characteristics determine the necessity of "green construction". The owners should choose the construction programs which embody the spirit of sustainable development, try to minimize diffusion of air pollution, water pollution, noise pollution, the amount of solid waste piling up, and harmful chemicals in the process of construction, aiming at not to affect the surrounding residents and the construction process<sup>[5]</sup>. By strengthening the environmental control, it can effectively reduce the environmental pollution and its impact on construction. This is of great significance to enhance the efficiency of water conservancy construction.

## Conclusions

Water conservancy construction is an important foundation for the national economy and the people's livelihood, for the promotion of the level of China's comprehensive development is of great significance. The importance of water conservancy project construction management work is not only reflected in the construction process but also after the completion of the operation. The good development of the work requires the joint efforts of the owner, the contractor, the government supervision and the management department. Among this, the owner's role is the largest. The owners should not only strengthen the learning of the management of engineering construction and related knowledge, but also coordinate the relationship between the contractor and the government departments, continuously improving the management level of water conservancy project construction. And then the quality of water conservancy project is guaranteed, the operation efficiency of the project is high, contributing to the construction of China's water resources. Therefore, strengthening the construction management of water conservancy project can not only improve the economic benefits of the construction enterprises, but also bring huge economic benefits and social benefits to the development of China's social development and people's living standards.

## References

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