Analysis on the Problems of Solutions of Water Conservancy & Hydropower Engineering Cost Management

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Abstract: With the continuous development of society and economy in China, the number of water conservancy & hydropower engineering in China increases unceasingly and China's water conservancy industry also enters into the stage of rapid development. The construction of water conservancy & hydropower engineering promotes social and economic development, so in order to safeguard the benefits of the engineering, cost management shall be done well, which is also an important channel for companies engaging in water conservancy & hydropower engineering to obtain economic benefits. Based on this the paper firstly investigates the problems in water conservancy & hydropower engineering cost management and then brings up relevant solutions.

Keywords: Water conservancy & hydropower engineering; Cost management; Problem; Solutions

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1. Introduction

In the new era, in order to promote social and economic development in a good and fast way, the number of water conservancy & hydropower engineering in China increases unceasingly. As for construction unit, market economy intensify the competition between different enterprises in the same industry, so that if the construction unit want to obtain more benefits in the engineering construction and occupy more market resources, it must have an advantage in bid prices, which puts forward a higher demand for water conservancy & hydropower engineering cost management.[1] Construction unit is required to have construction technology, conduct fund flow analysis, improve fund utilization rate and avoid wasting of resources, thus obtaining economic benefits on the basis of quality and price guarantee.

2. Existing Problems in Water Conservancy & Hydropower Engineering Cost Management

2.1 Problems in Design

Engineering design directly decides the construction engineering direction and trend, and also plays a significant role in construction cost of later period of the engineering. Under normal conditions, there are mainly two links in water conservancy engineering design, namely preliminary design and construction design of the engineering. In the water conservancy & hydropower market, the design mainly adopts the methods of bidding and quota. Construction unit determines the final plan through competitive bidding. Apart from satisfying the requirements of construction party, engineering design shall also ensure that construction cost is within reasonable range, thus actually controlling cost in design. The actual situation, however, is that construction enterprise only wants to control engineering cost in construction, and pays less attention to design, which causes difficulties in implementing cost management work fundamentally.[2]

2.2 Construction Materials Management Problems

As for water conservancy & hydropower engineering, construction materials will directly influence the construction cost and quality. In engineering budgeting, the cost is mainly composed of material cost, labor cost, construction equipment cost and other cost. But due to the operating mechanism of market economy system, the prices of construction materials and equipment may have big fluctuations, especially in the peak season of water conservancy & hydropower engineering construction. The situation of demand exceeding supply for materials is very easy to happen, which will cause the rise in price for construction

materials. Many engineering contractors don't predict the prices of construction materials, and blind purchasing also exists, so the prices of construction materials become hard to control.

2.3 Budget Quota Problem

In the construction of water conservancy & hydropower engineering, budget quota has a direct influence on engineering cost. Especially in the new period, a large amount of new equipment and new materials appear in the current building material market, and their application scope continuously extends. These factors make a tremendous impact on labor productivity and cost management. Quota shall be done in combination with design drawing with rational design, so as to ensure budget quota conform to real needs of engineering. But in real budget quota, construction enterprise's not conducting reasonable budget on construction materials, process cost, equipment price and labor cost, and merely referring to average price released by government as standard cause budget quota's deviation from market and difficulty to control cost.

2.4 Construction Factor

In order to ensure the successful construction of water conservancy & hydropower engineering, construction management work shall be done well to ensure every construction detail is done according to the preset plan. On the basis of ensuring the quality of the construction of the project, control the construction progress and construction cost of the project. In water conservancy & hydropower engineering construction, however, lots of construction enterprises pay less attention to construction management. In order to obtain more economic benefits, they try their best to simplify construction management, causing the construction management to exist in name only. In order to increase their profits, part of the enterprises even cut corners and operate in violation of regulations in construction, which causes the engineering quality doesn't meet the national criteria and reworking. Such method cannot improve the enterprise's economic benefits, but also increase construction cost and period.

3. Solutions to Problems of Water Conservancy & Hydropower Engineering Cost Management

3.1 Optimization of Design Plan

Construction enterprise needs to formulate perfect cost management system and ensure the comprehensiveness of system construction. At the same time, construction plan optimization shall be done well, which is the basis of water conservancy & hydropower engineering cost management and also an indicator of engineering cost quota. In design plan optimization, construction unit shall participate in design to ensure the conformity of design plan and cost management. The standard process shall be observed in reality is as follows: Predesign-research design-construction design-altered design. Meanwhile, layout shall also be optimized to simplify construction links as soon as possible, especially some unnecessary links shall also be eliminated, and thus ensuring engineering cost is controlled within a reasonable scope. At the same time, in order to guarantee the design plan's conformity to actual standard, design personnel and construction management personnel shall bring up opinions and suggestions on cost management, and cost budget scope in the early stage of design to conduct budget in every link of engineering, thus ensuring the rationality of design plan.[3]

3.2 Conduct Material Budget and Control Its Use

In the construction of water conservancy & hydropower engineering, construction cost shall, in combination with requirements of contract standard, strictly control the use of construction materials to avoid resource wasting and improve fund utilization rate. Meanwhile, new equipment, new process and new materials in current engineering field emerge in endlessly. If construction enterprise adopts new process, market investigation shall be done in advance to improve the mastering degree of new process, strengthen the communication with construction party and ensure the cost of application of new process is controlled within a rational scope. Meanwhile, in order to control the rationality of construction materials price, apart from analyzing the market reference price provided by government, the material price trend shall also be analyzed. Since the direct acting factor for commodity prices has been changed from productivity to supply-demand relationship (the market price of materials), so it is hard to conduct cost management and provide basis for cost control if the material cost cannot be controlled. Therefore, specially-assigned person shall be sent to conduct market investigation, analyze the rational price fluctuation domain of materials, and do well the material budget starting with the lowest price.

3.3 Strengthen Cost Budget

Firstly, in the budgeting of construction materials, specially-assigned person shall be sent by construction unit to follow engineering construction unit to enter into construction market and building material market. At the same time, cost management liability system shall also be constructed to record every item of content involved with capital for the basis of water conservancy & hydropower engineering completion settlement;

Secondly, the control on design stage shall be strengthened to adopt diversified method for participation in design. If there is any problem needing to be solved timely, design alteration shall be avoided to ensure the controllability of engineering cost. At the same time, the approval system of design alteration shall also be perfected. If it is necessary to alter the design, construction volume and construction cost shall be effectively analyzed in advance to bring up design alteration cost budget and conduct negotiation with construction party and design party;

Finally, if the engineering cost is uncontrollable in real construction, negotiation among three parties (contractor, construction party and design party) shall be conducted to avoid the situation of excessive cost due to design alteration, improvement of design standard and increase of construction link. Meanwhile, the contract content shall be clarified, and the project approval principle, pricing principle and approval process of projects not included in the contract and newly-increased engineering.[4]

3.4 Adopt dynamic Management Mode

In the control of water conservancy & hydropower engineering cost management, the control of design and construction alteration shall be comprehensively strengthened to ensure visa quality and avoid the situation of false certificate. Hidden certificate shall be noted with hidden project, process, and location with construction drawing as carrier. If the hidden content is not noted clearly, remarking or redrawing shall be needed. As to construction, the system shall be further perfected to effectively implement the relevant responsibility of construction management. The engineering construction cost shall be calculated and summarized every month. The comprehensive cost management is divided into installment cost control and periodically verifies construction process and construction cost to avoid uncontrollability of cost and conduct dynamic management mode. In addition, water conservancy & hydropower engineering investment control mechanism shall be done well, and project progress funds shall be verified every month to ensure the rationality of project investment.

4. Conclusion

In conclusion, since there are many factors influencing water conservancy & hydropower engineering cost management, so targeted at the existing problems in cost management and relevant solutions, advanced engineering cost management method shall be adopted and every link of engineering shall be grasped to continuously improve engineering cost management and safeguard the economic and social benefits of water conservancy & hydropower engineering.

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