RESEARCH ON THE COST METHOD OF HARBIN ELECTRIC COMPANY'S PROJECT - TAKING THE TURKEY SOMA THERMAL POWER PROJECT CONTRACTED BY THE COMPANY AS AN EXAMPLE

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ABSTRACT

Title: Research on the Cost Method of Harbin Electric Company's Project - Taking the Turkey SOMA Thermal Power Project Contracted by the Company as an Example

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In management process of project, the management on the cost control plays an important role in the successfully developing of the project. From the beginning of the Turkey SOMA project that is undertook by Harbin Electric International Engineering Company, the schedule and quality of the project are very smoothly. But some problems occur in the process of cost control and the costs surpass the plan too much. Thus, this paper starts to do the research on the cost control of Turkey SOMA project and the author hopes to provide reference for the cost control.

Firstly, this paper summarizes many literatures on the definition and methods of the cost control, and analyses the schedule situation of SOMA project, awareness of cost control, level of cost control and the situation of project information management. Secondly, the author also summarizes many problems during the cost control of the project. Although the administrative department of this project has tried to perfect the activities of the cost control, there are still many problems in the process of SOMA project cost control such as imperfective basis of cost control, unscientific method, and worse rules of systems and so on. The reasons of the problems are multiple. They are unreasonable cost budget planning, ignoring the relationship between project cost and schedule, no dealing well the relationship between project cost and quality. Furthermore, combining with the working schedule of the project, as to these problems, the paper designs some plan to promote the cost control of SOMA project, such as perfecting the

WBS systems, using the ABC cost control method and completing the rules of the systems. At last, the author points some supporting measures to make the plans smoothly. The measures are as follows: pushing forward the informational construction project of cost control, balancing the relationship between cost and schedule, adjusting the relationships between cost and quality.

Keywords: Turkey, thermal power plant project, cost control, project schedule, project quality

摘要

标题：哈尔滨电气公司项目成本方法研究——以该公司承包的土耳其 SOMA 火电项目为例

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在项目管理的过程中，成本控制对于项目的顺利开展起着十分重要的作用。哈尔滨电气国际工程公司的土耳其SOMA 火电项目，施工以来在工程进度和工程质量方面进行的比较顺利，但是在成本的控制方面却产生了较大的问题，出现了项目成本严重超出预算计划的情况。因此，本文对土耳其SOMA火电项目的成本控制情况展开了研究，以期为该项目的成本控制提供重要参考。

本文结合管理学理论，首先，针对土耳其SOMA 火电项目管理过程中的成本控制方面的实际情况，通过文献梳理、理论与实践相结合等研究方法对该项目的成本控制工作进行了全面、深入的分析，包括土耳其SOMA 火电项目的基本情况，该项目的成本控制方面的基本概况，如项目进展基本概况、项目成本控制意识、项目成本控制水平、项目信息化管理状况等方面的内容。其次，本研究还采用对比分析方法、系统分析、控制论等方面的管理学理论，提炼出了该项目成本控制过程中的问题，如成本控制的基础不完善，成本控制方法不科学，成本控制的规则体系不健全；而后，针对这些问题分析出了其产生的根本原因，有成本预算规划不合理，忽视项目成本与进度的关系，未能处理好项目成本与质量关系等等。针对这些问题及其产生的原因，论文设计出了土耳其SOMA 火电项目成本控制优化方案，如完善WBS 体系、合理运用ABC 成本法，以及优化项目成本控制规则体系。最后，为了能够保障这些设计方案全面实施，论文还提出了该项目成本控制的对策建议，如推进项目成本控制信息化建设，平衡项目成本与进度关系，调节项目成本与质量关系。

关键词：土耳其；火电项目；成本控制；项目进度；项目质量

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1. INTRODUCTION

1. 1 Research background

The General contracting mode originated in the US in the 60s of last century. Large-scale projects are constantly increasing and management is complicated. In order to effectively control the cost and progress of projects, "Engineering, Procurement, and Construction" (E P C) is a particular form of contracting arrangement used in some industries where the E P C Contractor is made responsible for all the activities from design, procurement, construction, to commissioning and handover of the project to the End-User or Owner (International Monetary Fund, 2011). The EPC general contracting model is created, and project management and risk control are passed on to the experienced general contractor, the owner or the professional consultant engineer hired is responsible for supervision. The project cost control and control management activities are the more important research contents in the project-related management process. In the background of ensuring high quality and safe progress of the entire project, investment in project costs can be saved, and the overall revenue of the project can be realized. Maximization has become a more important core issue in project management.

With regard to the issue of project cost control, PCM encompasses several specific functions of project management including estimating, job controls, field data collection, scheduling, accounting and design. PCM main goal is to complete a project within an approved budget. Beginning with estimating, a vital tool in PCM, actual historical data is used to accurately plan all aspects of the project. As the project continues, job control uses data from the estimate with the information reported from the field to measure the cost and production in the project. From project initiation to completion, project cost management has an objective to simplify and cheapen the project experience. This technological approach has been a big challenger to the mainstream estimating software and project management industries (International Monetary Fund 2012).

The large-scale project contracting companies in China have started late and have had relatively few research results. As a result, the project cost control problems are always in the initial development period, and the cost control mechanisms that are in line with the development of Chinese enterprise projects are lacking, especially for projects. The mastery of cost control principles and the understanding of the concept of project cost control have major obstacles. In the process of contracting foreign projects, many large state-owned enterprises in China also have many weaknesses in cost control. For

example, the management of project costs is not strong, there is no control over the entire process of project costs, and no more scientific and reasonable projects can be used. Cost estimation methods, insufficient economic and technical support for project cost control, etc. Based on these problems, many large international companies are making efforts to actively adopt improvement measures to improve the efficiency of project cost control, ensure the progress of the project, and improve project performance.

Harbin Electric International Engineering Co, Ltd. carried out cost control of the Turkish SOMA project. As the progress of the project progressed, there were many situations that were not considered in the project evaluation and there was a situation of cost overruns. The project has not been completed yet. In half of the cases, the capital expenditure has already passed half, which will affect the smooth development of the project in the next step. Therefore, the dissertation extracts a study on the cost control of the Turkish SOMA thermal power project, and can effectively implement cost control and related control for the implementation of the project. This study has comprehensively analyzed the current status of cost control of Turkey's SOMA thermal power projects, and put forward the core issues of cost control basis, cost control methods, and cost control rules. For the problems that hinder the smooth development of the project, a basic plan that is relatively consistent with the cost control and related control of the development of the power engineering project is designed, and related measures are also proposed to ensure that the project can be successfully implemented to ensure that the project can be successfully completed.

1.2 Research Objectives

Since Turkey's SOMA thermal power project was launched on January 7, 2014, the progress of the project has been relatively smooth. Each time node in the original plan has also been completed according to the plan, which has played an important role in the successful completion of the entire project. However, some problems have arisen in the cost of the project. Due to the unfavorable cost monitoring, there has been a large overspending. As of now, the project has not yet been completed in half, but the cost of capital expenditure has exceeded half of the budget. If this problem is not solved in time, the progress of the project will hinder the development and implementation of the project. Therefore, the core purpose of this project research is to find problems in the cost control process of Turkey's SOMA thermal power project through cost-related theory, and to design these issues in accordance with the project management and related actual implementation and development. The cost control plan includes the improvement of the

WBS (work breakdown structure) system, the adoption of the ABC cost method (work cost analysis method), the sound rules system and the corresponding cost control safeguard measures, which provide important guidance for the smooth development of the Turkish SOMA thermal power project.

1.2.1 Research Significance

Project cost control is a relatively complex system management. This paper has certain theoretical value and practical guidance significance for the study of the cost control of Turkish SOMA thermal power projects. On the one hand, based on the status quo of cost control of the project, this paper has designed the basic safeguards for the cost control programs and management related to the improvement of the WBS system, the adoption of the ABC cost method, and the improvement of basic rules and systems for cost control and related controls. The relevant management and control theories of various project costs can be summed up. It also lays down a certain theoretical basis for the research of junior scholars in this area, which reflects the theoretical significance of this article. On the other hand, the research of this article is based on Based on the development of the SOMA thermal power project in Turkey and the problems existing in the cost control of the project, a relevant level improvement plan for actual cost management and control that meets the progress of the project is designed, and basic measures for related safeguards are also provided. Turkey's SOMA thermal power project managers accurately grasp the cost of project inputs and have very important guiding significance for promoting the smooth development of the project.

1.3 Research status at home and abroad

Regarding the content of cost control and management aspects and management methods, whether domestic or foreign, scholars in this field have conducted in-depth research on this issue from different perspectives.

1.3.1 Research on the Connotation of Cost Control

Cost control, also known as cost management or cost containment, is a broad set of c ost accounting methods and management techniques with the common goal of improving business cost-efficiency by reducing costs, or at least restricting their rate of growth. Busi nesses use cost control methods to monitor, evaluate, and ultimately enhance the efficienc y of specific areas, such as departments, divisions, or product lines, within their operation s.

In the literature, large projects with a wide scope and complex deliveries are also called integrated projects (Hobday, Davies, & Prencipe, 2005), complex projects (Barlow, 2000), Complex Product Systems (Hobday, 1998), turnkey projects and simply large projects (Miller & Lessard, 2001). These projects involve integrating a wide scope of products and services into a total solution to meet the customer's complex and unique needs. To understand how complex projects differ from more standardized projects, suggest that they should be classified according to the project's breadth of the scope and technological uncertainty. Recent studies based on comprehensive systematic literature reviews (Bosch-Rekveldt, Jongkind, Mooi, Bakker, & Verbraeck, 2011; Geraldi et al., 2011) have extended our understanding of complex project. The characteristics of complex projects are related to size of a project, interconnectedness of various elements of a project, uncertainty and project uniqueness. A cost control theory system for the goal, and defines this important concept of "target cost" in the theory, and also strongly argues that the organization needs to pass its "target cost" for product design and product production processes. "And carry out cost control and control activities. The management method of this type of cost-related control is mainly based on the combination of scientific and rational prediction of the project operating costs that have been completed or realized beforehand to a certain extent and the control of the cost in the event, which is of great significance.

Paul (2006) and Magne (2013) believe that the traditional cost control method means that the cost control starts from the relatively passive after-accounting state to the production process and starts the cost control, so that the costs on the cost accounting process are integrated afterwards, which in turn makes the cost Control and control are more scientific and reasonable. That cost control mainly refers to the objectives of cost management that companies establish in advance according to a certain period of time, and that the cost-controlled subjects are within the scope of their duties, so that before the cost of production occurs or during the process of cost control, each Classes can influence a variety of factors of cost and a series of measures taken to prevent and adjust the relevant conditions, so as to ensure the cost control and control objectives to achieve a smooth management behavior. Hsiao (2006) pointed out that the relatively traditional management standards for enterprise project costs cannot meet the needs of the rapidly changing internal and external environments in the current corporate operation management. The standard of this cost operation and management mechanism is too stringent or too loose to encourage employees. The management aspects are all unfavorable. Marie and Rao (2010) in the four main aspects of the practice based on the company's routine management (design or engineering research mechanism, empirical

observation and determination mechanism for project commissioning, work research technology determination mechanism, and historical standard average determination mechanism) After analyzing and discussing the cost control mechanism, we pointed out that in order to promote the objective and feasible cost, the formulation of related management and control standards not only measures the management and control performance of the previous enterprise project cost, but also fully consider the future related expected costs. In terms of management and control of performance, a relevant set of cost management and control mechanisms for engineering projects that is more complete and in line with the actual operational needs of the company are formed on the basis of relevant.

1.3.2 Related Research on Cost Control Methods

In the 1950s, the prototype of cost control was a cost control method and management theory used by the US military in the research and development of weapons systems. G T. Staubus proposes and advocates that in the process of cost control, the ABC should be adopted, and that the ABC can supervise and record the implementation of all production activities in real time. The activity cost is used for more practical measurement analysis. The evaluation of performance and the evaluation of the practical efficiency of resources are used to complete the cost assessment and cost control of the activity. The source of resource consumption and the object of resource consumption are assessed and calculated in terms of cost analysis. ABC cost method is a cost accounting and management method that reflects the cost of an activity, the cost of operation, performance evaluation, and resource utilization through a dynamic tracking and measurement method. British scholar Simmon (1999) first published the idea of cost control of “strategic cost control management” and conducted a preliminary discussion on the feasibility of the theory in practice. The American scholar Michael Porter (1997) is mainly responsible for a relatively comprehensive theoretical analysis of the cost strategy, pointing out the necessity of establishing cost advantages in cost control. Shank, a management accounting expert from the United States, has conducted in-depth research on the basis of Simmon and Porter's theory and pointed out that the management of strategic cost control is an important foundation for the implementation and implementation of the company's development strategy. From a strategic point of view, the company the comprehensive improvement mechanism of the project's cost control measures is also a means for the entire company to form a more important competitive advantage.

Coopor (2000), a British scholar, is the chief systemic explanation of cost control

management. He believes that in order to cooperate with detailed data on various types of costs, using the method of operating costs, the responsibility for cost control of project activities can be implemented to everyone, thus reducing the cost of the enterprise, and to a certain extent, enhance the competitiveness of the enterprise. The internal reform of Toyota Motor Corporation of Japan is an important source of corporate cost planning. The basic connotation of cost planning refers to the previous cost control, which is a guiding or preventive method of cost control.

There are also some domestic relevant scholars who advocate the management methods of cost positions. This method is mainly composed of two aspects: the location accounting of costs and the control of costs. The location accounting of costs is an important basis for cost location management, and cost control is an important goal of cost location management. A dynamic cost control optimization model. The model mainly uses the principle of particle swarm as an important basis to implement the control of its dynamic costs. It analyzes the cost of the construction period in the construction project and analyzes the deviations of multiple factors, and optimizes it. The model carries out its dynamic cost control. Fen Yuan (2016) put forward a process performance evaluation model. This model mainly uses process management as an important basis to construct a system of performance evaluation indicators for the process. Through this model, a comprehensive comparison of multiple construction organization programs can be carried out, and finally the model can be selected, an optimal cost control scheme. Liu Ping proposed an optimization model for multi-objective cost control. This model mainly uses genetic algorithms as an important basis to optimize the content of the entire project in terms of construction period, quality, and safety before the implementation of the project. Calculations, in order to examine the results of the entire project cost control.

1.4 Theoretical Framework

The research on the cost control of the Turkish SOMA thermal power project in this project mainly includes the following four aspects:

(1) After the background of the research on the project cost control, the core issues to be studied in this project are extracted, and the relevant costs are controlled. On the basis of consolidating the content and literature on cost control methods, we have comprehensively grasped the application overview of related cost management and control theories at home and abroad in the corresponding enterprises and project management. This is the basic overview and development status of Turkey's SOMA thermal power project in this topic. The in-depth analysis and design of the project's cost

control program proposed a more substantial theoretical basis.

(2) Turkey SOMA thermal power project cost control overview and problems. Based on the basic overview of the project, the related content of the project's cost control field was analyzed, and the main problems of the Turkish SOMA thermal power project in its current project operation and management were found, and the most serious of these core issues was analyzed in depth. The two main reasons lay the foundation for the design of the project cost control plan.

(3) Turkey's SOMA thermal power project cost control program design. The cost control plan of the project is mainly composed of three parts: improving the WBS system, adopting the ABC cost method and a sound cost control system, and they coordinate and cooperate with each other.

(4) Turkey SOMA thermal power project cost control protection strategy. From the aspects of optimizing related information systems, handling the relationship between cost and progress, and the relationship between cost and quality, the corresponding management strategies and measures are extracted to ensure that the related programs of cost control of management projects can be implemented more smoothly and achieve and achieve The project plans out the expected results.

2. PROFILE AND PROBLEM ANALYSIS

2.1 Turkey SOMA Thermal Power Project Overview

The Turkish SOMA thermal power station project is a project of cooperation between Harbin Electric International Engineering Corporation and Kolin Turkey. The project is located in the SOMA area in the northern Aegean region, 175 meters above sea level and approximately 135 kilometers from the port city of Izmir. The construction party of this project is Harbin Electric International Engineering Co., Ltd. The owner of the project is Kolin Company of Turkey. Kolin owns real estate, agricultural irrigation, tourism and other businesses. It operates in Afghanistan, Jordan, Libya, Uganda, Serbia and many other countries. It is a well-known Turkish integrated company and has repeatedly been ranked among the top 225 countries in the world. The engineer is from the Belgian engineering company in Belgium. The total amount of the project contract was 390 million U.S. dollars. Owners own financing in Turkey and Harbin Electric Engineering Company needs to provide relevant documentation support. The contract was signed at the end of 2013 and the contract timing started in January 2014. The contract clearly stipulates that the construction period of Unit 1 is 36 months, and the construction period of Unit 2 is 39 months. The project's warranty period is 2 years.

As shown in the location map of Turkey's SOMA project as shown in Figure 1-1, the project construction area is a relatively important economic development area in Turkey. Based on the complexity and importance of the economic development of the site, the project will be constructed at the site. During the process, it will inevitably encounter various problems, including various aspects such as hiring labor, procurement and transportation. These problems will affect the development of the project to varying degrees. By observing the plan layout of the project in Figure 2-2, we can see that the project is a large-scale international engineering project. The construction scope of this project is relatively large and the construction complexity is high. Whether in terms of the design of infrastructure layout, installation of specific equipment, personnel scheduling, logistical support, or the complexity of cross-border engineering or differences in the living habits of workers of different races, Turkey’s SOMA Thermal Power The project is a major engineering project that is relatively complex, risky, and uncontrollable. These factors and conditions have brought great obstacles to the smooth development of the project, and have also created greater difficulties for the project's cost control management.

Figure 1-1: Location map of SOMA project in Turkey

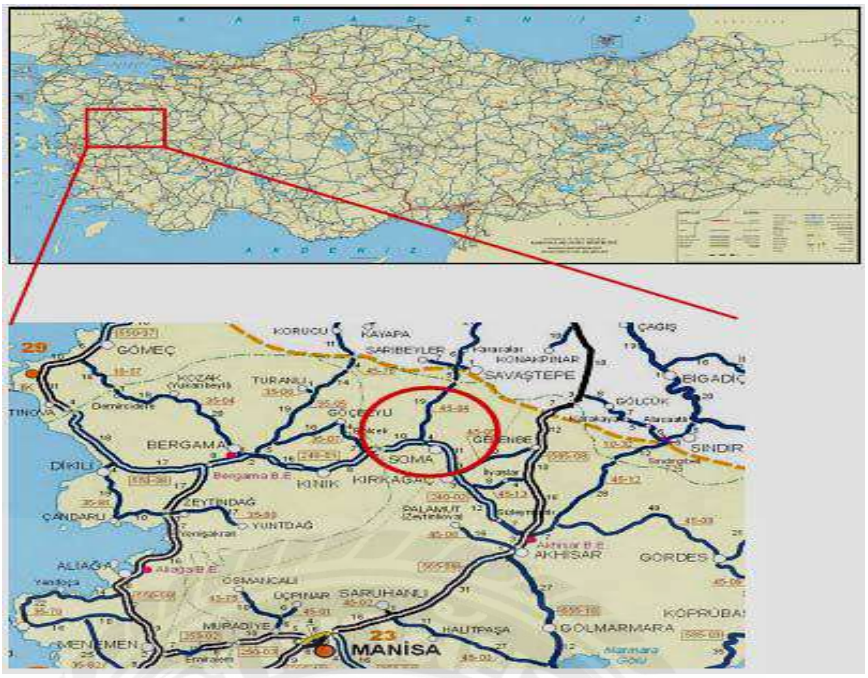
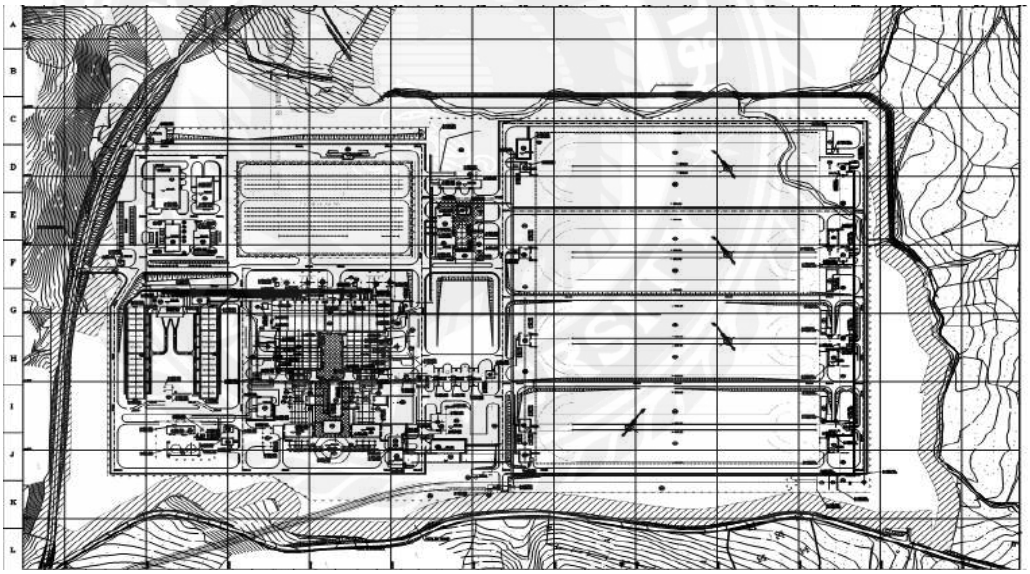


Figure 2-2: Plan layout of Turkish SOMA thermal power project



2.2 Overview of Cost Control of Turkish SOMA Thermal Power Projects

With the continuous development of Harbin Electric International Engineering Co., the cost control awareness of companies in operation and management is also gradually becoming stronger, but within the enterprise, these cost management consciousnesses are still only at the decision-making level of company management or this small portion of senior management has not been fully implemented in enterprises. The sources of staff involved in Turkey's SOMA thermal power project are relatively complex. There are great differences in the overall knowledge structure

of employees and related professional standards, and there is less participation of highly professional experts in the project.

In the cost control of the SOMA thermal power project in Turkey, the management paid more attention to the direct costs incurred by the project's material costs and labor costs. The employees of the company pay more attention to these costs, which, to a certain extent, ignores the hidden costs such as the cost of security, the cost of quality, and the time cost. After the completion of the project acceptance, there was a feeling of relief. However, the project audit work after completion of the settlement may be delayed for a long time. The construction materials that have not been exhausted after the construction and any related personnel or departments are properly cleaned up. , resulting in the waste of related materials. This is also a negative result of the weak awareness of project cost control.

2.3 Analysis of the Problems in the Cost Control of Turkish SOMA Thermal Power Projects

For the cost control of the project, it is first necessary to clearly define the object and scope of the control, and then to grasp the key points of control and use appropriate control methods. The cost control process of any project must include the core content of four major aspects. The absence of any one aspect will affect the cost control management effect of the project, and even hinder the smooth development of the entire project. Since the implementation of the SOMA thermal power project in Turkey to date, due to the mismatch between the project construction process and the cost expenditure, many problems have emerged in the control and management of its costs. The following are summarized in the following aspects:

2.3.1 The cost control basis is not perfect

The task for the cost management function is to produce information for internal users who need accurate, detailed and frequent economic information for making decisions (Belkanoui, 1993). Specifically, cost management “identifies, collects, measures, classifies, and reports information that is useful to managers for determining the costs of products, customers, and suppliers, and other relevant objects and for planning, controlling, making continuous improvements, and decision making” (Hansen & Mowen, 2006). Project cost management includes three major functions called cost estimating, budgeting and cost control. The goal of these functions is to “ensure that the project is executed in a cost efficient, profitable manner, according to business principles and from the perspective of the entire company” (Artto et al.,

2011). In the process of cost control and control of Turkey's SOMA thermal power project, due to various reasons, the cost control basis of the project was not perfect. The main imperfections of these cost control basics are:

(1) There is no explicit material quota and working hour quota. The so-called quota mainly refers to the enterprise project planning or organization personnel, to a certain extent, the production level and the organization's basic conditions, its human, material, financial and other related aspects of the consumption can achieve a clear demarcation line, For example, there is a quota for materials and a quota for working hours. However, in the construction process of this project, there is no clear material quota and working time quota. Under such a background, it will easily lead to an increase in the expenditure of materials during the construction of the project, as well as a large-scale increase in the cost of working hours, leading to costs, loss of control.

(2) There is no standardized data measurement. This leads to inaccuracies in the underlying data, which can affect all future work using the data for analysis, and may even result in a wrong decision.

2.3.2 The cost control method is not scientific

Some cost control proponents believe that such strategic cost-cutting must be planned carefully, as not all cost reduction techniques yield the same benefits. In a notable late 1990s example, chief executive Albert J. Dunlap, nicknamed "Chainsaw Al" because of his penchant for deep cost cutting at the companies he headed, failed to restore the ailing small appliance maker Sunbeam Corporation to profitability despite his drastic cost reduction tactics. Dunlap lay off thousands of workers and sold off business units, but made little contribution to Sunbeam's competitive position or share price in his two years as CEO. Consequently, in 1998 Sunbeam's board fired Dunlap, having lost confidence in his "one-trick" approach to management (International Monetary Fund 2011). Once the method is selected incorrectly, it may lead to invalidation of cost control. By analyzing the basic overview of the cost control of the SOMA project in Turkey, there is an unscientific situation in the cost control of the project in terms of cost control. The specific performance is as follows:

(1) The choice of cost control method lacks flexibility and pertinence. The management’s choice of project cost control method only recognizes the importance of using absolute cost control, and only looks at the absolute cost control method from the beginning to the end, and can't address the stage of the project and the various projects it faces. Class problems and adopt flexible and variable cost control methods.

It is easy to increase the chance of negative effects.

(2) The execution of the cost control method is not up to the standard. During the cost control process of the SOMA thermal power project in Turkey, although a more appropriate cost control method was chosen, when using this cost control method, errors such as calculation statistics or analysis often occur, which affects the result of cost control. . This is not because of the negative results caused by the wrong choice of cost control methods, but because of problems in the implementation and implementation of cost control methods that ultimately led to non-compliance of cost control results.

2.3.3 The system of cost control rules is not perfect

The cost control rule system plays an important role in the cost control process. The cost control rule system plays a very important role in guiding the project's cost control and ensures the orderly development of cost control in the direction. Without a sound system of rules, it is impossible to promote the orderly implementation of cost control, and it will affect the basic effects of cost control to a large extent. The inadequacy of the cost control rule system in Turkey's SOMA thermal power project is mainly reflected in the following two aspects:

(1) There are many gaps in many aspects of cost control. There is no effective constraint mechanism. A lot of cost control activities and links reflect the arbitrariness of the work, lack of standardized management of the system. The incomplete content of the project's cost control system is an important manifestation of the incompleteness of the project's cost control system, and it is also a very important core issue.

(2) The system of cost control related rules plays a minor role. The system of cost control related rules should be able to play an important role in guiding the cost control process. However, there is a problem that the role of the system of cost control related to the SOMA thermal power project in Turkey cannot be fully exerted. This makes the cost control-related rule system useless. Many cost control-related staff are blind to their rule system. In the course of carrying out cost control, they rarely follow the cost control-related rules and systems and act on their own wishes.

2.4 Analysis of the Causes of the Cost Control of Turkey's SOMA Thermal Power Projects

Through the various problems that have emerged in the cost control of Turkish SOMA thermal power projects summarized in the previous section, this paper combines the actual operation of the project and summarizes the three main reasons that contribute to the emergence of these problems.

2.4.1 Unreasonable cost budget planning

A budget segments the business into its components or centers where the responsible party initiates and controls action. Responsibility centers represent applicable organizational units, functions, departments, and divisions. Cost centers are accountable only for expenses, they do not generate revenue. The use of responsibility centers allows management to design control reports to pinpoint accountability, thus aiding in profit planning. A more accurate budget for the cost of a company or project can provide a clear basis for the management of costs in the project budget period and provide important relevant evidence for the related cost control work. The cost budget can also organize the employees' careful planning and control of costs, and encourage companies to effectively use their manpower, material resources, and financial resources to improve the entire project and the company's business and management work. It can minimize the cost of labor, and ultimately obtain better economic benefits.

Prior to the launch of the SOMA thermal power project in Turkey, the responsible department of the project was to carry out budget and estimation of costs. Although relevant cost calculations have been made, there are still problems such as cost overruns and imperfect cost control foundations during the construction of the project. This is mainly due to the fact that the project management unit is performing cost calculations. Inaccurate estimates and cost budget planning are also not very reasonable. This is precisely due to the unreasonable cost budget planning of the project. Moreover, the unreasonableness of this cost budget planning mainly has the following aspects:

(1) The unreasonable cost budget planning of the project. This is closely related to the previous research, the accumulation of experience in related projects, and the personal capabilities of leaders. The responsible unit of the SOMA thermal power project is Harbin Electric International Engineering Co., Ltd. The company has a lot of international engineering projects in the international scope, but there are relatively few engineering projects in Turkey and Central Asia, and the experience is lacking.

Therefore, the pre-cost budget is under consideration. In terms of formulation, there are great deficiencies that cause cost estimation problems.

(2) The project's cost budget is not detailed. In the process of setting up its cost control, the expenditures for each project are not elaborated. For example, the expenditure on labor costs only has a rough estimate on the total number, and it does not estimate the cost of human resources in different departments and modes of use. For example, the cost of translators, the cost of local hired personnel in Turkey, etc., are seriously underestimated. In particular, the relatively high cost of locally employed personnel is also a very important reason for the current cost overrun of the project. There are many cost overruns that result from such inconsequential cost budgets, such as the procurement of local construction materials, local food, transportation, and other cost overruns.

2.4.2 Ignoring the Relationship between Project Cost and Progress

In the signing of the contract for Turkey's SOMA thermal power project, Turkey’s enterprises have strict requirements on the progress of the project. In order to allow Harbin Electric Engineering Company to complete its tasks on schedule, the company in Turkey clearly lists the time nodes of the project's progress in the contract. These time nodes are carefully planned and each time node is very close. Once there is no scheduled completion at any of the time nodes, Harbin Electric Engineering Company must pay fines to Turkish companies, and even pay a large amount of liquidated damages. Although the requirements of the contract were stringent, Harbin Electric Co., in order to be able to open up the Turkish market, expand international business, and driven by interests, still agreed to the strict requirements of the other party.

In order to be able to carry out project construction according to the time node of the contract, in order to avoid fines, the construction unit has been working overtime during the construction process, and the progress has been always the most important goal, thus ignoring the construction cost of the project. Especially in some of the more important core expenses, affecting the time of the project progress, the leaders of related management will agree to pay the expenses first without affecting the progress of the project. Under the guidance of the concept of leading enterprise project management, it is obviously ignoring the project's cost control and management. Under the premise of guaranteeing the progress of the project, it caused excessive expenditure of costs.

The construction of the project so far has resulted in cost overruns. This is due in large part to the fact that the construction management department of the project failed to properly handle the relationship between the project cost and the progress of the project, pursuing the progress of the project blindly and neglecting the project. The cost control has led to a mismatch between the progress of the project and the payment of costs and has affected the development of the project.

2.4.3 Failed to handle the relationship between project cost and quality

Controlling project margins is one of the most important functions to ensure profitability. Margin control is done by project employees who are mainly interested in the total margin of the project and business segment. For them, margin control is one way to control the cost performance of the project. However, they play a vital role in ensuring the high quality of cost and margin-related data.

The Turkish SOMA thermal power project is a very important project for Harbin Electric Engineering Company. The project is the company's first large-scale project in Turkey and throughout the Middle East. In order to successfully complete this project and be able to get a good reaction from the other company, the company opened the power engineering project market in Turkey and the entire Middle East, with particular emphasis on the construction quality of the project. On the basis of originally meeting the requirements of the contract and basic quality and safety, the project construction party has further improved the quality of the project, thereby increasing the cost. However, in the process of pursuing the construction quality of the project, the relevant management personnel of the project did not fully grasp this measure, over-emphasizing the project quality and causing the project cost overrun.

2.5 Summary of this chapter

In the research of this chapter, the cost control of the SOMA thermal power project in Turkey was introduced from three aspects. Based on the introduction of relevant basic conditions, this paper also extracted the main existing relatively central issues in the process of cost control of Turkey's SOMA thermal power projects. Finally, in light of these problems, the main reasons for these problems are analyzed in depth.

3. RESEARCH METHODS

3.1 Improve the WBS System

The Work Breakdown Structure (WBS) WBS is a hierarchical and incremental decomposition of the project into phases, deliverables and work packages. It is a tree structure, which shows a subdivision of effort required to achieve an objective; for example a program, project, and contract (International Monetary Fund, 2001). In a project or contract, the WBS is developed by starting with the end objective and successively subdividing it into manageable components in terms of size, duration, and responsibility which include all steps necessary to achieve the objective.

The work-breakdown structure provides a common framework for the natural development of the overall planning and control of a contract and is the basis for dividing work into definable increments from which the statement of work can be developed and technical, schedule, cost, and labor hour reporting can be established.

The current WBS system of Turkey's SOMA thermal power project is shown in Figure 3-1. It can be seen from the currently planned cost control work breakdown structure system of the project that the classification of its structure is relatively simple. This system only sets the five elements of labor costs, material costs, mechanical fees, equipment costs, and other costs under the element of total cost. The design of such a project cost control WBS system is too coarse, and it is easy to see the occurrence of a situation that ignores detailed cost expenditures.

Figure 2-1 Current Cost Control WBS System for Turkey's SOMA Thermal Power Project

To better improve the WBS system of the project, it is not only necessary to improve the hierarchy of the project's cost control system, but also to improve the content of the project's cost control WBS system on the basis of improving the level. Because only the content is the core of the project's cost control WBS system, it is the most important basic guarantee that the cost control WBS system can fully play its role.

3.2 Reasonable Use of ABC Cost Method

Activity-based costing (ABC) is a costing methodology that identifies activities in an organization and assigns the cost of each activity with resources to all products and services according to the actual consumption by each. This model assigns more indirect costs (overhead) into direct costs compared to conventional costing (International Monetary Fund, 2018).

From the aspects of contact and difference, the WBS and ABC analysis methods are some of the management methods that can be used in the process of project cost control and optimization of project cost control. Different places show that the WBS system is mainly from a comprehensive perspective to manage the project's cost control work. The ABC cost rule is mainly to optimize the cost control of the project from the details of the content.

3.2.1 Clear ABC Cost Method Analysis Objects

In the process of using the ABC cost method in Turkey's SOMA thermal power project, it is necessary to fully specify that the ABC is not only a cost calculation method, but also an important organic combination of cost-related calculations and cost management. The objects of cost are:

(1) Resources are the original forms of products consumed by enterprises for production, and they are also important sources of costs. The human, material and financial resources involved in the corporate activity system are resources. The core resources that an enterprise consumes mainly include direct labor costs, materials consumed directly, and indirect manufacturing costs.

(2) The operation is mainly within the interior of any organization and can penetrate the entire process of production and operation of the product, including product design, raw material procurement, and production and processing until the product is shipped and sold. In such an important process, each link and every process must be regarded as an extremely important task.

(3) Cost drivers. Mainly refers to the various factors that cause the activity or production costs to occur, which is an important reason for the cost. The main driver of costs is usually measured by the cost of activities related to their operations and the resources that are more closely related. Under the guidance of the cost method of its operations, the main driver of cost is the basis for the allocation of costs.

(4) The center of operations is also called the cost database, which mainly refers to the important set of interrelated operations in the process of forming a business, and the main cost of the processes and outputs used to compile related businesses. The operation center is helpful for enterprises to more clearly analyze a set of related operations, and can carry out the management of operations and the design and assessment of enterprise organization and related responsibility centers.

3.2.2 Determine the ABC Cost Method Implementation Steps

In the process of using the ABC cost method in Turkey's SOMA thermal power project, it is necessary to determine the specific implementation steps in conjunction with the specific conditions of the project and the construction progress, so that the application of the method in the project can achieve the intended purpose. There are mainly the following seven steps:

(1) Set the implementation target of the ABC. First of all, it is necessary to clarify the main objectives of the cost control of Turkish SOMA thermal power projects, that is, how decision makers can make full use of the information provided by ABC's related calculations. The main scope of implementation refers to all relevant departments that implement and implement the entire ABC. It should be noted that the subject must be clear in the overall implementation process of the ABC. Overseas, the full implementation process of the ABC consists of internal and external personnel of the company and related professionals outside the company to jointly form a special cost management team.

(2) Comprehensively recognize the basic processes of business operations. The main goal of this step is to be able to explain the business management process in detail, to clarify the process that the entire company displays in the management of operating costs, and to identify the various types of factors that cause costs. Relevant responsibilities related to management costs can also facilitate the design of related operations and responsibility control mechanisms.

(3) Establish a basic model for cost accounting in enterprise operations. In understanding the operation process of the enterprise, a basic model of the related accounting of the enterprise's operating cost is designed. This model mainly includes the following contents: the classification of resources, operations and costs in various aspects of the enterprise, and the responsibilities in each computing object, the main body and so on.

(4) Development tool for the development of operating costs. It is mainly able to provide more abundant information than the traditional cost, and it is also based on a large number of calculations. The full implementation of the operating costs cannot be separated from the support of the relevant software tools, etc. The tools of this software can help the complex calculation work to be completed successfully, especially for the comprehensive analysis of information. The software system used in the ABC development process can provide tools for the construction of the operating cost method accounting system, etc. It can also help establish and manage basic computer systems for related operations and complete the basic accounting of related operations.

(5) Operational costs related operations. In the basic accounting system for the establishment of the operating costs, enter the more specific operational and management data before they can run the operating cost management method.

(6) Analysis of the results of operations related to operating costs. Combining with the actual situation of the cost control development of Turkey's SOMA thermal power project, a thorough and comprehensive analysis and explanation of the calculation results of the entire operation cost are made, especially the main reasons for the high operating cost of the project, and the cost structure during the project's development. Major changes occurred in

(7) Take concrete actions. Act on the actual issues reflected in the accounting content of the costs of the Turkish SOMA thermal power project. In particular, it is like how to improve the efficiency of its operations, assess its organization and related employee activities and performance, and change the basic methods of job execution to eliminate meaningless job roles. The specific development and implementation of the project is a highly variable process. Therefore, after operating under the normal conditions of the related project operating costs, it is still necessary to carry out a certain degree of maintenance on the basic operating cost accounting model, making this area Management can reflect the development and changes of the project.

3.3 Optimize project cost control rules system

3.3.1 Enhancing the project cost control rules system

Theoretically we draw from contingency theory, which suggests that there is no optimal strategy for managing projects and organizations and that managerial approaches have to be tailored to account for the specific context (Lawrence & Lorch, 1967; Shenhar, 2001).

Although the cost control of the SOMA thermal power project in Turkey was implemented and some of the cost control positions were also established, there was still no institutionalized, standardized and procedural project cost control rule system during the construction of the project. Therefore, in the project's cost control process, the project cost control rule system should be enriched, the strategic guidance for project cost control should be strengthened, the cost control strategy should be linked to the strategic objectives, and cost forecasting and decision making should be highlighted. To establish a set of scientific and standardized cost control procedures to achieve the ultimate goal of cost control. Therefore, the project's cost control rule system should be improved from the following three aspects.

(1) After the completion of the project, it is also necessary to do a good job of project filing and improve the relevant filing system. It is necessary to establish a management system within the filing mechanism for completion of construction projects. Based on the continuous improvement of the project engineering

record-keeping mechanism, a set of assessment standards has been formulated, and the basic work for the compilation of the entire project as-built drawings has been completed. It is necessary to carry out the work of collecting, collating and summarizing the engineering projects. In particular, it should be clear that each subcontracted unit can submit the basic name, quantity and time of more accurate completion data at different stages, and can ensure the completeness and accuracy of the various types of completion data delivered by the basic project of the project. We will implement the basic system for the basic record filing of its completion.

(2) Strengthen the management of basic project final accounts. In the management of project completion and final accounts, the main person in charge of project management must conduct a comprehensive check. The material management department of the project is mainly responsible for the guidance of the coordination and budget departments. It is also necessary to collect all kinds of data and submit it to the related budget department of the project. The leading management office of the project and the budget planning department of the project department must carry out in-depth and objective analysis and comparison of the management data concerning the bid budget, the specific consumption list of materials, and the payment amount of labor, etc., which may be found in the final accounts. The missing items will ensure the accuracy and completeness of the final accounts. In addition, it is necessary to collect the basic data stored in the relevant construction, such as construction diaries, correspondence, meeting records, and activity memos.

(3) Increase the intensity of the entire project recovery project. In the basic management process of the project, the more important leaders must also manage it in person, and the leaders in charge must also fully cooperate. This is an important basic guarantee for the project to ensure its goal of annual clearing. For related project projects that have already been completed, but still check the accounts receivable for the settlement project, eliminate the settlement plan, and achieve the full implementation of the time content and target mechanism. For those basic project funds that cannot be coordinated and resolved, relevant legal means must be fully utilized to safeguard their own legitimate basic income.

3.3.2 Strengthen the binding of project cost control rules

Behavioral management deals with the attitudes and actions of employees. While employee behavior ultimately impacts on success, behavioral management involves certain issues and assumptions not applicable to accounting's control function. On the other hand, performance evaluation measures outcomes of employee's actions by

comparing the actual results of business outcomes to predetermined standards of success (International Monetary Fund, 2018). In this way management identifies the strengths it needs to maximize, and the weaknesses it seeks to rectify. This process of evaluation and remedy is called cost control. In terms of strengthening the binding force of the SOMA thermal power project's cost control rules in Turkey; we can start from the following two aspects:

(1) Cultivate employees' awareness of the rules. Some employees may always be in a working environment without too many rules. They are accustomed to the work environment without rules. Even if they have rules, they do not pay attention. In particular, there is no awareness in the control of project cost, such as daily use. Related materials, such as unworthiness and waste, have occurred from time to time. Therefore, in response to these violations of cost control and management rules, the responsible person must fully cultivate awareness of the employees' compliance rules in the project, create a corporate culture that obeys the rules and regulations, and infect each employee by observing the rules of the corporate culture. , To develop a good habit of working discipline. In addition, more training should be organized to enhance employees' awareness of discipline through training and to increase the binding of project cost control rules.

(2) Identify the responsible person and strengthen the punishment violation mechanism. One trend in cost control has been toward narrowing the focus of corporate responsibility centers, and thereby shifting some of the cost control function to day-to-day managers who have the most knowledge of and influence over how their areas spend money. This practice is intended to promote bottom-up cost control measures and encourage a widespread consensus over cost management strategies. For the management of any department, the responsibility of each department must be clarified and the responsibility system must be strengthened. Once a problem arises, the responsibility of the accident can be clearly identified and the cause of the corresponding problem can be identified. If the position does not have a specific person responsible, then it is easy to have problems, perhaps because the responsibilities are not clear. For the work, people push each other and result in work problems or cost overruns, but they cannot find the responsible person, so there is no circumvention next time a similar situation occurs again. Regarding the situation in which costs are excessively overspend in disregard of the cost control rules, the relevant penalties for violations shall be strengthened to act as a deterrent, and the purpose of strengthening the binding force of the project cost control rule system shall be achieved.

3.4 Summary of this chapter

In this chapter, the main problems in the cost control of Turkey's SOMA thermal power projects in the previous chapter were designed. Three solutions to these problems were designed to increase the cost control capability and level of Turkey's SOMA thermal power projects. These three programs are: First, we must improve the WBS system, expand the cost control WBS system level, and improve the cost control WBS system; second, we must rationally use the ABC cost method, clarify the ABC cost method analysis object, and determine the implementation steps of the ABC cost method. Finally, it is necessary to optimize the rules and systems related to cost control of the project, to enrich the rules and systems related to the cost control of the project, and to strengthen the binding of relevant control rules on the costs involved in the project operation management process. Through these program designs, the cost control aspects of the project can be more targeted.

4. RESULTS AND SUGGESTION

In this chapter, the characteristics of the project itself, the progress of construction and the overview of cost control are combined, and three aspects of safeguard measures are proposed to ensure the smooth implementation of the above-mentioned plan.

4.1 Promoting Project Cost Control Information Construction Measures

During the cost control and management of the SOMA thermal power project in Turkey, the relevant cost control personnel need to use a large amount of data and data to monitor the cost expenditure in real time and carry out relevant cost analysis. Therefore, the processing of cost-related data must also be complete, accurate, uniform, and flexible. The relevant data processing technology must also have relatively extensive coverage and scope, including material cost expenditure, labor cost expenditure, and equipment cost expenditure, and completion, confidence and other aspects of data. The project currently does not have a complete cost control management information platform, providing relatively stable support for the data processing required for the related cost control analysis. Therefore, in order to further improve the cost control of project construction and strengthen the effectiveness of project data, project managers should vigorously promote the construction of information systems and standardize the data management of projects.

4.1.1 Construction Information Management System

Information management systems refer to the complementary networks of hardware and software cooperating to collect, process, store, and disseminate information. The SOMA thermal power project in Turkey still has problems in data collection, storage, processing, and utilization, such as incomplete data, unreasonable data, poor data objectivity, and inconvenient use of data. There is still much room for improvement in terms of usability. For such problems, an information management system that meets the actual needs of the project should be established. In order to guarantee the smooth implementation of the project's strategic transformation plan, the project should establish an information management system that includes the core content of project cost control. According to the actual situation of the project, its information management system must establish a material fee database, equipment fee database, labor service fee database, and other cost databases during the data collection process. After processing, storage, analysis, and presentation of data, the system collects valid data collected from the system to users related to risk

management in various departments and makes full use of relevant data.

In the process of establishing the information management system, in order to extend the effectiveness and efficiency of the information management system, reduce the failure rate, expand the storage scale of data, and improve data processing efficiency, project managers must first choose the advanced and quality of the current market, higher software and hardware facilities.

In terms of hardware, Turkish SOMA thermal power project managers should choose to build peripheral hardware related to the information management system according to the project situation, and strengthens the investment of the Turkish SOMA thermal power project in the hardware related systems of its cost control. We must do a good job in the construction of infrastructure in the areas of information, such as transmission networks and other communications. It is necessary to timely and effectively equips its corresponding office automation equipment, among which there are hardware devices such as computers, scanners, and printers. In the introduction of related equipment, it is still necessary to consider whether or not the devices are compatible with each other in terms of software, and ensure the relevant information. The system can integrate its related information and share resources.

In terms of software, the SOMA project's information management system should use high-quality data storage and analysis software suitable for the development of the company to ensure the establishment of project information bases and the storage of information can be comprehensive and complete, with as few failures as possible. Some of the more widely used applications in project management include Watson Analytics, Cloud CC, and other analysis software. The project manager must choose the software published by the large-scale brand companies in terms of the choice of software use, because the quality of the software issued by powerful large-scale companies is guaranteed, the after-sales service is perfect, and the daily needs of the project activities can be reasonably large, degree of satisfaction. Also specify the use of the information system specification. The norm plays a very important role in any field and plays an important role in restricting the development of any activity or activity. Similar to the development of other industries, the use of the project's information management system also needs to have a certain degree of formativeness. The information system is open to every cost management personnel of the company to the maximum extent, so as to maximize the use efficiency or work efficiency of employees.

The following are some of the benefits that can be attained using information management system:

(1) Companies are able to identify their strengths and weaknesses due to the presence of revenue reports, employees' performance record etc. Identifying these aspects can help a company improve its business processes and operations.

(2) Giving an overall picture of the company.

(3) Acting as a communication and planning tool.

(4) The availability of customer data and feedback can help the company to align its business processes according to the needs of its customers. The effective management of customer data can help the company to perform direct marketing and promotion activities.

(5) MIS can help a company gain a competitive advantage.

(6) MIS reports can help with decision-making as well as reduce downtime for actionable items (International Monetary Fund, 1995).

4.1.2 Regulatory Project Data Management

Through the establishment of an information management system, the SOMA thermal power project in Turkey is being systematically managed in terms of information management. It is also necessary to improve the efficiency and level of control over the cost of the entire project. Any information of the project can be embodied in the form of data. Through the collection, processing, and scientific and rational construction of the project's cost-expenditure during the construction process, the project cost control personnel can quickly and effectively obtain the required information when the project information data is in demand. . During the collection and use of management data, the following aspects should be noted:

(1) Ensure the accuracy and completeness of the input data. During the data entry process of the SOMA thermal power project in Turkey, most of the input work was done by the staff. However, many workers do not pay enough attention to data entry. In the process of data entry, they are prone to inaccurate data entry and incomplete data entry. In view of this situation, project managers should first train the data entry staff so that they can pay enough attention to the data entry work, and then strengthen the supervision and management of data entry work. It is necessary to conduct a random survey of data entry work and review it repeatedly. , Check whether the data

is accurately entered into the information management system.

(2) Ensure that the use of data is targeted. Through the use of relevant data in the information management system, managers can control the production scale, speed, and product type of the enterprise by analyzing the production data; financial personnel can analyze the past financial data and analyze the project in combination with the cost and expenditure conditions. The future cost of the situation; the company can also share part of the data with the subordinate suppliers to promote the smooth construction of the project construction from start to finish all aspects. By classifying the data, it can ensure that the use of data has a certain degree of specificity, thereby improving the efficiency of the project's cost control.

4.2 Measures to Balance Project Costs and Schedules

The basic core objectives embodied in the management process of various types of projects are mainly to ensure the optimal solution between the progress of the project and the project cost on the basis of ensuring the quality of the project. The cost management and control work is the main goal of all engineering project management work. According to the past situation, the split management of costs and schedules has caused a large gap between the two and lack of close relationship brought many problems. The balancing measures of the cost and schedule relationship of Turkey's SOMA thermal power project play a greater role in the cost control of the project.

4.2.1 The principle of coordination of project costs and schedules

From the perspective of relevant practical operations, any party to the project changes or takes control measures in relation to the changes that occur, and other aspects of the project will undergo important changes. The core purpose of this coordination is to find the best balance between the two so that the entire target system can be optimized. In this study, the actual situation of the cost control of the Turkish SOMA thermal power project was fully integrated with the actual situation, and six important principles for the coordination of the progress and cost of the international power project were proposed:

(1) The catch-up must be carried out at a critical time. If the construction that has delayed the progress but the construction content is not so important, the overall construction progress of the project will not be enhanced. Only the construction activities of the key lines can promote the progress of the entire project. For those who have already been involved in the relevant activities on the critical line, it is

possible to accelerate the progress of the project.

(2) It is necessary to clarify the priority of other project activities. When Turkey's SOMA thermal power project has already become a major bottleneck in a number of jobs for a certain engineering activity, this important basic activity is to shorten the construction period. If the time of this event can be shortened, other activities can be implemented.

(3) Engineering activities with long construction schedules. For an engineering activity, it is possible to obtain more potential basic benefits for the implementation of various types of activities with longer duration.

(4) All preparations for construction must be completed early in the project. If the relevant work activities of the activity are to be operated in the early stages of the entire project, once the failure of the work such as rushing to work, there is still a time buffer for the restoration of the project, and the resources required in the early stage of the project are relatively small. . If the catch-up activity fails, and the construction time exceeds the period specified in the plan, this is still the development phase of the entire project, so there is also the basic time for recovery.

(5) The overall labor intensity of the activity is low. When the project engineering labor intensity is low, it is an easy task to complete the task by increasing the relevant manpower in the short-term work of the entire project. However, when the project's construction activities have high overall technical requirements for human resources, it will be very difficult to find qualified people to complete these more difficult tasks in the short term.

(6) Select some types of activities that are more likely to have their regular problems. Shortening the work cycle of the project is equivalent to reducing the dangerous time during the construction process and also reducing the probability of problems to some extent.

4.2.2 Choosing Methods to Effectively Control Project Progress and Costs

In the contradictory unity of the project target control system, the progress and cost goals are two important factors in the construction process of the project activities. The complete unification, connection, and interdependence between the two are also under certain conditions, each other will be transformed.

The process of managing project costs is an activity for estimating costs,

developing project budget and controlling spending. The project cost management process includes the following key steps: Cost Estimation. It is the project cost management process step when the project manager cooperates with the financial department to estimate costs required for purchasing all necessary good/services and undertaking necessary activities to deliver the project. Project Cost Estimation is conducted at the planning phase. The project manager uses project cost management software to develop spreadsheets and make calculations. Budget Determination, at this step of the cost management process, cost spreadsheets is used to develop the budget framework and determine the budget. Spending Control, It is the step of the project cost management process when the allocated budget is reviewed and spending is tracked. The project manager takes responsibility for control spending and to ensure that the budget allocation is optimized and costs are fully covered with the planned and allocated budget.

Through the control of the integration of the progress and construction costs of the project, in the process of analyzing the actual costs and budget differences of the Turkish SOMA thermal power project, the relevant causes of the problems can be found by combining the construction progress of the project. In real time, it reflects the performance generated during the implementation of the project, and it also enables the construction of the project and the construction process, the indicators of cost and cost control to be paid can reach the basic state of optimization, and then can achieve the specific basic goals of the project.

4.3 Measures to Adjust the Relationship between Project Cost and Quality

The SOMA thermal power project in Turkey is a multinational power project with a wide range of processes. How to reasonably and effectively handle the entire project personnel organization and work coordination, but also to complete the highest quality major project work content with the least cost has become the current project management one of the more prominent issues in the process. Therefore, the measures to select a better relationship between project cost and quality control are particularly important for the cost control of the project, such as clarifying the relationship between project cost and quality, and harmonizing project quality and cost objectives.

4.3.1 Clarify the relationship between project cost and quality

The relationship between the construction cost and quality of large-scale projects is shown in Table 4-1.

Table 4-1: Interaction between Cost and Quality

Expert Opinion	Proportion of opinion
Increase or decrease in cost input will affect the quality level	29.5%
Higher quality requirements will increase costs accordingly	23.2%
Reasonable cost input guarantees the quality of the contract	15.7%

From the table, it is found that the basic objectives of construction quality of the project are opposite to the project's construction cost objective. On the one hand, there is an opposite aspect between the two major basic goals in the project management costs. The main performance is: if the project's main leaders have a relatively high overall quality of their construction projects. It is necessary to spend relatively more construction time and invest more in development funds. If we emphasize the basic goals of project quality, we must reduce the basic progress of the project's development goals and the basic objectives of cost; if relevant. The main managers greatly reduce the cost of project construction. With their workload unchanged, their quality will not be able to obtain the most basic guarantees. On the other hand, the basic relationship between the two core objectives has a relatively uniform one. The core performance is that the planning and formulation of the cost of large-scale engineering projects is feasible and relatively optimized, so that the progress of the entire project is certain. The development of continuity or balance not only obtains the basic quality of its better construction and development, but also shortens the duration of the project, and correspondingly improves its quality under the condition that its progress can be guaranteed. It will also reduce the related rework due to its quality problems, as well as the contents of maintenance, and thus also reduce the cost of project management and operation.

All in all, the basic cost of project construction is more or less, and its quality is also difficult to be fully guaranteed. Only when there is a reasonable project construction and operation cost, the safety and progress of the project construction process can be well managed and controlled. The supply of project expenditure costs must also be reasonable. When the cost of its related projects is lagging behind, effective corrective measures must be taken in a timely manner. In the process of project management, it is also necessary to strictly prosecute the quality standards of the project, to avoid causing the maintenance of its project or the rework to lead to waste of resources.

4.3.2 Coordinate Project Quality and Cost Targets

The control measures adopted in any one aspect of a large-scale engineering project can bring about change or conflict in other areas of the project. The basic objectives of the cost of the project and the basic relationship between the relevant objectives of the quality are clear. When it determines a more specific target value, it can also have an impact on another target to a great extent. Therefore, it is aimed at the Turkey SOMA thermal power project. The quality objectives in the construction process and the basic cost targets of related projects must also be coordinated accordingly. The relevant coordination purposes of the project are mainly aimed at Turkey's SOMA large-scale international power projects. A relatively balanced development status can be found between the two and the goal planning system can be optimized. Combining the current status of cost management and control of the construction of the entire Turkish SOMA thermal power project and fully coordinating the relationship between the quality of the project construction and the related construction costs should be carried out in the following aspects:

(1) Strengthen the training of relevant personnel in Turkey's SOMA project, improve the technical level of the members involved in the SOMA project, and strengthen the education, cost management, and construction process for the quality of the leaders at all levels of the SOMA project in Turkey and the relevant staff. In the comprehensive management and related business skills training in China, we must also establish the first-level quality management awareness of the project, improve the project construction management level, construction technology and operational skills development level, so that it can scientifically reduce its project the project cost.

(2) Strengthen the construction quality management of Turkey's SOMA international engineering project. Prior to the commencement of the Turkey SOMA International Project, it is necessary to break down the basic quality objectives of the project according to the basic characteristics of the construction project of this type, and to take direct responsibility for the construction and production. People sign each other's responsibility system for quality and related goals, thereby implementing a quality one-vote veto system.

(3) Determine the quality and cost standards of the more appropriate Turkish SOMA international project. The construction cost mechanism of the project is an important factor that affects the overall quality of the project, but it is not the quality of the project cost is high, but a relatively non-linear development ratio. In addition,

the optimal development level of an engineering project is not that the higher the project quality, the better, but that it meets the requirements of the owner. The overall development cost of the project construction is the lowest quality level. The relevant contractors that emerged during the construction of the SOMA international engineering project in Turkey must be able to determine their appropriate quality-related costs and not to increase the construction cost of the entire project due to the excess project quality.

(4) Guarantee the advanced nature of the construction technology of the SOMA international project in Turkey, the rationality of its use, and the balanced construction of the organization. Ensuring the project quality of SOMA International projects can shorten the project schedule, which is also a relatively effective way to control project construction costs.

4.4 Summary of this chapter

This chapter is mainly to guarantee the smooth implementation of the cost control program of Turkey's SOMA thermal power project in the third chapter, and put forward the cost control safeguard measures for the Turkish SOMA thermal power project. It mainly includes three aspects: promote information construction of project cost control, build an information management system, standardize relevant data management during project implementation, and balance the bilateral relationship between project-related management cost expenditure and project-related progress, so that clear The overall principle of the project's overall cost expenditure and progress coordination, choose the method of effective control of project schedule and cost, measure the relationship between project cost and quality, clarify the relationship between project cost and quality, coordinate project quality and cost objectives .

5. CONCLUSION

Mitchell (1998) went on to explain that every business reaches a point in its growth when management recognizes a need to cut costs, usually in the face of a crisis. "Over time, you get a cost cutting culture," consultant Paul Tuft told Mitchell. "Once you have the types of people who are good at building things— creating new values, new products, and new services — are driven out of the business because it is unpleasant for them to work there. Then, once boom time arrives again, the organization piles on capacity but doesn't solve the problem of creating innovative potential. It has to hire talented new people again." Many companies repeat this process of inefficient growth several times.

The issue of cost control has become one of the hot topics in project management. With the development of Turkey's SOMA thermal power project, there have been major problems in the cost control of the project. The construction of the project has not yet reached half, but the cost of the project has exceeded the budget. If you do not enter the appropriate cost control, it will affect the smooth development of the project. Therefore, this paper combines related management theories and conducts in-depth research on the progress of the Turkish SOMA thermal power project and various problems that arise in the cost control of the project, and proposes that the corresponding cost control and promotion programs can be successfully implemented Safety precautions. To sum up, through the relevant research of this paper, we have obtained the following results:

(1) The main problems in the cost control of Turkish SOMA thermal power projects and their causes. Through the analysis of the progress of Turkey's SOMA thermal power project, it has been found that this international large-scale power project has many problems in the ongoing cost control management. For example, the cost control is not perfect, and the method of project cost control and management is selected. There are also unscientific areas, and various types of systems for project cost control and related control rules are not sound. To solve these problems, this paper analyzes the main reasons that lead to these problems. There are irrational cost budget plans, ignoring the relationship between project costs and schedules, and failing to handle the relationship between project cost and quality.

(2) Design of the Turkish SOMA thermal power project cost control improvement plan. In order to further promote the smooth development of Turkey's SOMA thermal power project; this paper presents the project's cost control program

from three major aspects. It is necessary to improve the WBS system, improve the content of the cost control WBS system, rationally use the ABC cost method, clarify the ABC cost method analysis object, determine the implementation steps of the ABC cost method, optimize the basic rules and systems for project cost control and control, and enrich the cost of the entire project. Related rules and systems related to management control.

(3) Safeguard measures for cost control of Turkish SOMA thermal power projects. In order to successfully implement the cost control design scheme for Turkey's SOMA thermal power project, the safeguard measures for the cost control of the project were finally extracted. Promote the information construction of project cost control, build an information management system, and standardize the management of important project-related data; balance the various measures between the costs involved in project development and the progress of the project, and make clear the implementation cost of the project. The principle of project development process coordination, the choice of methods for effective control of project schedules and costs, measures for adjusting the relationship between project cost and quality, clarifying the relationship between project cost and quality, and harmonizing project quality and cost objectives.

There are also some deficiencies in the research process of this article. For example, due to the Turkish SOMA thermal power project being a key project of Harbin Electric International Engineering Company, and subject to the company's confidentiality mechanism for the project, during the introduction of the project, it is impossible to introduce all the information; in addition, it is subject to time and effort. Limitations, in the course of the study of this article, its theoretical depth still needs to be strengthened. The related research on cost control and control carried out in the future on the overall implementation of the international engineering power project can fully integrate the core characteristics of the international large-scale electrical project development process and summarize the cost of this type of project. Management and related control laws can ultimately improve the general applicability of all relevant theoretical studies in the field of basic management and control of the cost of related electrical projects to a certain extent.

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