

### **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.