

Research on Construction Safety Management Measures for Building Site

Zhuang Miao

Shaanxi Coal Group Shenmu Ningtiaota Mining Co., Ltd., Yulin 719000, Shaanxi, China

Abstract:

With the rapid development of Chinese construction industry, the scale of construction engineering is more and more large, and the degree of specialization is constantly improving. In order to gain competitive advantage in the market, construction enterprises must pay attention to construction safety management and optimization of construction technology. In addition, in order to promote the long-term and stable development of the project, the project contractor must also pay attention to the quality, efficiency and safety of the construction environment to ensure the safety of workers' lives and property. Therefore, construction safety management has become an important part of construction. It is an important strategy to conduct a comprehensive analysis of construction safety hazards, strengthen the construction of safety management system, improve workers' safety awareness and skill level, and adopt scientific construction technology and equipment.

Keywords:

Construction Engineering; Construction Safety Management; Engineering Quality; Safety Awareness; Safety Management System

Preface:

Construction engineering is an important part of the national economy, and the improvement of its scale and level is directly related to the level of national economic and social development. With the rapid development of China's economy and the acceleration of urbanization, the construction industry has developed rapidly. At the same time, the safety hazards involved in construction projects are also increasing, and the safety of construction sites has attracted much attention. Therefore, construction safety management has become the key to ensuring the safety of workers' lives and property and the long-term stable development of the project. The purpose of this paper is to conduct an in-depth study on the safety management of construction projects, analyze the existing problems and improvement directions of existing management measures, and provide reference and reference for improving the safety level of construction projects.

I. Analysis of the importance of construction safety management of construction projects

The construction safety management of construction projects is indeed one of the important safeguard measures for construction enterprises to achieve safe production, protect workers' life and property safety and ensure project quality. By strengthening construction safety management, enterprises can improve the safety awareness and skill level of employees, reduce the incidence of safety accidents, ensure the safety of workers' lives and property, and also ensure the quality of the project to avoid construction quality problems. Therefore, the construction safety management of construction projects is of great significance for the long-term and stable development of enterprises.

1.1 Ensuring the safety of workers' lives and property

There are a variety of safety hazards in the construction process of construction projects, such as falling from high places, electrical safety, mechanical equipment safety, etc. These safety hazards may pose a threat to the life and property safety of workers. In order to protect the life and property safety of workers, construction enterprises must strengthen construction safety management. By establishing a sound safety management system, strengthening safety education and training of workers,

improving the safety awareness and skill level of managers, and adopting safety technology and equipment and construction techniques, the risk of loss of workers' lives and property can be effectively reduced and the safety of workers' lives and property can be guaranteed. Therefore, the construction safety management of construction projects is a necessary means to ensure the safety of workers' lives and property.

1.2 Ensure the quality of the project

Safety accidents have a great impact on the construction process and quality of construction projects. For example, accidents may cause damage to some equipment, tools and materials at the construction site, thus affecting the construction progress and quality of the project. By taking scientific and reasonable safety management measures, the occurrence rate of safety accidents on the construction site can be reduced, and the impact of these accidents on the quality of the project can be reduced. To ensure the compliance of the construction process, safety management requires construction enterprises to strictly abide by national and local safety production laws and regulations, for example, the construction site of construction projects must establish a sound safety management system, and supervise and inspect the safety production status of the construction site. These safety management measures can effectively ensure the compliance of the construction process and avoid the impact of illegal acts on the quality of the project.

1.3 Compliance with laws and regulations

In China, the construction safety management of construction projects is an important measure for enterprises to comply with laws and regulations and protect the rights and interests of employees. China's relevant laws and regulations require construction enterprises to implement the construction safety management system and strengthen the safety management and supervision of the construction site. The following is the relationship between construction safety management and laws and regulations of construction projects: The "Construction Law" is the basic law in the field of construction engineering in China, which stipulates the quality and safety management of construction projects. The law requires construction units to implement a safety production management system, establish a safety production responsibility system, and strictly implement national and local laws, regulations, and standards for production safety. Therefore, the construction safety management of construction projects is an important measure for enterprises to comply with the Construction Law.

If the enterprise cannot effectively implement the construction safety management system, it will face serious legal liability. For example, if a safety accident occurs during the construction process, resulting in worker casualties or property damage, the enterprise will bear the corresponding civil, criminal or administrative liability. Therefore, the construction safety management of construction projects is not only an important measure for enterprises to comply with laws and regulations and protect the rights and interests of employees, but also a necessary means to avoid legal risks.

1.4 Improve the competitiveness of enterprises

Strengthening the construction safety management of construction projects, improving the level of enterprise safety production management, and improving the level of construction technology and technology can enhance the market competitiveness of enterprises. In the market, safety, quality and efficiency are important competitive factors for enterprises. Therefore, by strengthening construction safety management, ensuring the safety of workers' lives and property, improving the quality of the project, and improving the market competitiveness of the enterprise, it provides strong support for the long-term development of the enterprise.

II. Analysis of existing problems in construction management of construction projects

2.1 Inadequate security management

Safety management is not in place is a common problem in the construction management of construction projects. The lack of safety management is mainly manifested in the following aspects: the implementation of safety production responsibility is not in place, and the safety production responsibility system is the basis of construction management. However, some enterprises

have problems such as inadequate implementation of responsibilities and unclear allocation of responsibilities, resulting in unclear responsibilities and difficult implementation of safety management. Safety management system is not perfect, safety management system is an important means to ensure safe production. However, in some enterprises, the safety management system is not perfect, no one is responsible for the implementation and implementation, resulting in the safety management can not be effectively implemented and implemented. Safety facilities are missing or do not meet the specifications, construction projects need to use a variety of safety facilities, such as safety nets, safety belts, protective supplies. If these facilities are missing or do not meet the standards, it will pose a threat to the safety of workers' lives and property. Safety education and training is not in place, safety education and training is an important measure to ensure the safety of workers. However, in some enterprises, safety education and training work is not in place, resulting in a lack of safety awareness and safety skills of workers, which increases the incidence of safety accidents.

2.2 Construction personnel lack of awareness of safety risk control

The lack of safety risk control consciousness of construction personnel is a common problem in the construction management of construction projects. This situation is mainly manifested in the following aspects: lack of professional training, many construction personnel lack of professional training, can not correctly understand and respond to construction safety risks, do not know how to use protective equipment, lack of sufficient understanding of construction safety accidents. Operation error, construction personnel in the construction operation is easy to make mistakes, because the lack of safety awareness and risk prevention awareness, ignoring the existence of security risks, resulting in the occurrence of safety accidents. In order to quickly meet the number of construction personnel target, some project contractors often lower the selection standards, so as to recruit construction personnel without professional skills and safety awareness.

2.3 Unreasonable project plan

The project schedule is unreasonable. Some enterprises may ignore the actual situation and pursue the schedule excessively when making the project schedule, resulting in unreasonable project schedule and unable to meet the actual needs. The allocation of project resources is not reasonable, and the allocation of various resources (human, material and financial) is one of the key factors in the construction management of construction projects. However, some enterprises may be unreasonable in the allocation of resources, resulting in construction quality and progress cannot be guaranteed. Budget estimation is not accurate. Budget estimation is a very important link in project planning. However, some enterprises may not estimate the budget accurately enough, resulting in project cost overruns, affecting the economic efficiency of the enterprise.

2.4 Unstable quality of materials

Material procurement is not standardised, some enterprises may have the problem of material procurement is not standardised when purchasing materials, and they do not make scientific procurement plans or choose reliable suppliers, which leads to the unstable quality of the purchased materials. Material inspection is not in place, in the construction management of building projects, the inspection of materials is one of the key links. However, some enterprises may not be in place in material inspection, resulting in unstable quality of the procured materials. Improper storage of materials, improper storage of materials is also one of the reasons for the unstable quality of materials. If the material storage environment does not meet the requirements, or the storage time is too long, it will lead to the decline of material quality.

2.5 Construction personnel quality is not high

Skills are not skilled enough, some construction personnel are not skilled enough, the operation is not standardised, and it can not meet the actual needs, which leads to unstable construction quality and even safety accidents. Safety awareness is not strong, the cultivation and improvement of safety awareness is very important in the construction management of building projects. However, some construction workers may lack awareness of safety awareness and fail to form safety awareness, resulting in frequent safety accidents. Inadequate training and management, some enterprises may neglect the training and management of construction personnel, resulting in the quality of construction personnel can not be improved, and the quality

and safety of construction is difficult to be guaranteed.

2.6 The responsibility of the supervision unit is not fully implemented

Supervisors are important management personnel in the construction process, they need to play the supervision function and urge the implementation of safety management. However, in actual work, some supervisors have insufficient attention to details. Although safety problems were found in the construction process, they failed to timely warn and prevent them, resulting in deteriorating safety hazards and frequent safety accidents. In addition, some supervisors failed to combine the actual work requirements to do a good job of supporting records and supervision, resulting in unreasonable application of on-site materials and mechanical equipment, which increased the construction cost and maintenance difficulty. When a safety accident occurs, the communication between the supervision unit and the construction unit is insufficient, and the best solution is not selected through negotiation, which leads to the delay of the construction period and the increase of construction costs, and affects the overall economic benefits of the project. Therefore, the responsibility of supervision personnel in construction management is not in place, which has become a big problem.

III. Strengthen the standardized management of construction site safety

In order to standardize the safety management of civil engineering construction site, a series of measures should be taken. First of all, all construction personnel must be licensed to work, in strict accordance with the relevant provisions of the qualification review, to eliminate the occurrence of unlicensed operations. This can ensure that the quality and skills of construction personnel meet the requirements, thereby improving the quality and safety of construction.

Secondly, the safety management personnel should regularly check the construction site, check the use of construction equipment, the transportation of construction materials, the wearing of safety protective equipment of construction personnel and the storage of construction waste, etc., and rectify the existing safety hazards in time to ensure the safety of the construction site. In addition, according to the actual situation of construction, the use of appropriate technologies and methods to evaluate and forecast the construction safety risk level, in order to develop targeted safety management measures.

At the same time, set up a safety inspection team, and formulate a safety inspection schedule, record and rectify the non-standard construction behavior, and carry out on-site safety training for the construction personnel with problems, inform them of the consequences of their behavior, and disseminate criticism through broadcasting and other means, and impose appropriate fines and other measures, so as to improve the safety construction awareness of the construction personnel. Standardize civil engineering construction site safety operation.

Finally, in order to further strengthen the safety management of civil engineering construction sites, other standardized management measures need to be taken. For example, all construction personnel are required to wear safety protective equipment that meets the standard, such as hard hats, safety shoes, protective gloves, etc., to ensure the safety of construction personnel at the construction site. In addition, safety warning signs must be set up at the construction site, and safety publicity and education must be strengthened to improve the safety awareness of construction personnel. At the same time, we should establish and improve the safety management system, clarify the responsibilities of safety management, improve the safety management process, strengthen the supervision and inspection of safety management work, and ensure the safety of civil engineering construction sites.

IV. Implement the production safety responsibility system

The safety management personnel shall carry out regular inspections on the construction site, investigate potential safety hazards, and conduct risk assessment to ensure the safety of the construction site. This requires companies to equip professional security managers and ensure that they have the necessary skills and knowledge to be able to apply modern security management techniques and methods proficiently. Safety management personnel should check the construction site in time, including the use of construction equipment, the transportation of construction materials, the wearing of safety protective equipment of construction personnel and the storage of construction waste, etc., to investigate the existing safety risks, and use

the corresponding technology and methods to evaluate and predict the construction safety risk level to ensure the safety of the construction site.

In addition, the implementation of the safety production responsibility system is also an important measure to ensure the safety management of the construction site. Enterprises should fully implement the safety production responsibility system and implement the safety management responsibility to individuals. The project management department shall carry out organized and planned safety management activities in accordance with the established plan. The management team shall regularly inspect the key elements of the project construction site, such as personnel, equipment and materials, to eliminate potential safety hazards to the greatest extent. The construction of the safety production responsibility system can make the safety management work develop in the direction of systematization and standardization, establish and improve the management constraint mechanism, clarify the safety responsibilities of managers and construction personnel, improve their safety awareness, and prevent the occurrence of problems such as neglect of management and illegal production.

The enterprise shall reasonably plan the safety facilities at the construction site, including the setting and use of safety warning signs, protective nets, safety belts, safety hooks and other facilities to ensure the safety of construction personnel. At the same time, enterprises should carry out regular inspection and maintenance of security facilities to ensure their normal operation and use.

V. Establish construction site safety grade evaluation and risk prevention

Construction site safety grade evaluation and risk prevention is an important part of modern safety management, it can help enterprises better understand the safety status of the construction site and the existing safety risks, and formulate corresponding prevention and response measures, so as to ensure the life and property safety of workers and construction quality.

Firstly, the establishment of safety grade evaluation mechanism is an important means to ensure the safety of construction site. Before construction, the enterprise should conduct a comprehensive safety assessment on the construction site, including fire protection facilities, safety protection facilities, etc., assess the safety and risk of the construction site, and issue a complete and true safety quality grade assessment report. The report should clarify the safety management objectives of the construction site, point out the existing problems and shortcomings, and urge the relevant units to correct them in time. For the safety quality level assessment does not meet the standards, before the completion of rectification will not start. By establishing a safety grade evaluation mechanism, enterprises can fully understand the safety situation of the construction site, discover and solve safety hazards in time, and ensure the safety of the construction site.

Secondly, the establishment of emergency management mechanism is an important means to ensure the safety of the construction site. In the construction process, sudden safety accidents are difficult to avoid. Therefore, enterprises need to establish an emergency management mechanism, regularly organize emergency simulation rescue, and improve the ability to respond to sudden safety accidents on the construction site. Enterprises should develop detailed emergency plans and conduct regular drills in order to respond quickly and deal with accidents in emergencies. In addition, enterprises should also predict and prevent safety risks on the construction site, and take timely measures to eliminate and reduce safety risks, so as to ensure the safety and stability of the construction site.

VI. Strengthen the quality and safety awareness of construction personnel

In the safety management of construction site, strengthening the quality and safety consciousness of construction personnel is an important means to ensure the safety and quality of construction site. The construction period of the project is long, the construction scope is wide, and the construction personnel are required to coordinate and cooperate with each other to complete the project construction. Therefore, it is necessary to strengthen the training and education of construction personnel, improve their safety awareness and prevention awareness, and enhance the safety awareness and responsibility awareness of construction personnel.

First, a technical disclosure. Secondly, professional training. Thirdly, it is necessary to establish a sound reward and punishment mechanism and an assessment mechanism. Finally, it is necessary to strengthen safety education and training

for construction personnel. There are many hidden dangers of safety and quality in the construction process, some of which are predictable and some of which are unforeseeable. In order to ensure the safety of life and property of on-site construction personnel and steadily carry out project construction activities, it is necessary to enhance the awareness of production safety of construction personnel, so that they can accurately identify various risks and hidden dangers in the construction process, and take timely and effective countermeasures in the face of emergencies to ensure the smooth development of project construction.

References:

- [1] Hui Chang. *Discussion and Research on the Problems and Control Measures of Building Construction Safety Management* [C]// *Civil Engineering Academic Conference of Central and Western China*. 2011.
- [2] Bing Ye. *Research on Safety Management Measures of Construction Sites* [J]. *Urban Construction Theory Research: Electronic Edition*, 2015,000(015):5836-5836.
- [3] Yan Fang. *Research on Solving Measures of Construction Safety Supervision Management Problems* [J]. *Urban Construction Theory Research: Electronic Edition*,2014,000(013): 10407-10411.
- [4] Yang Zhang. *Research on Solving Measures of Construction Safety Supervision Management Problems* [J]. *Engineering Technology (Abstract edition)*.
- [5] Guoan Wei, Zhiyong Ma. *Research on Current Situation and Control Measures of Safety Management in Construction Site* [J]. *Time Report: Academic Edition*,2014(6):1.
- [6] Dongjiang Zhao. *Research on Construction Safety Production and Management Measures* [J]. *Urban Construction Theory Research: Electronic Edition*,2012(16).
- [7] Liqing Dong. *Research on Existing Problems and Countermeasures of Construction Safety Management* [J]. *Global Markets*, 2019.