

Problems and Strategy of Construction Safety Management

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Abstract. In recent years, many accidents have happened in the progress of construction and the number of the accidents has an upward tendency, so we have to try best to comprehend the safety management system from a new perspective. We should use new ideas to alter the passive situation. Because of construction engineering with great investment project, the construction period long, human material and equipment consume more, technology high quality requirements, the terms of the contract is board by political, economic, social, legal and natural conditions affect the larger, under this underground, the difficult of construction safety production management is intangibly enlarged. This paper describes the status and analyzes the characteristics and the difficulties of safety management of construction projects and use the experience of the safety management in developed countries for reference. Using qualitative analysis method discourse the necessity and urgency of the construction safety production management. In order to analyze and study how to raise the level in construction safety management and guarantee the goal of construction safety.

The situation of the work safety of construction projects

The construction industry is an important pillar industry of our national economy, almost undertake 60% of total fixed assets investment, and output value of the construction industry increased year by year. The construction has made great progress, but the safety accidents have occurred frequently, which has caused a serious impact on the individual, society and enterprises. According to statistics, only in 2012, 272 fatal accidents happened in the national construction, which killed 384 people. Although the state attaches great importance to the construction of safe production and promulgates relevant laws and regulations, the death toll is still high, so it is very necessary to study and discuss the reason.

Problems in construction safety production management

Existing problems of safety production management at the state level

First of all, due to the engineering construction investment system has changed in China, leading to the old construction of safety production management system has not adapted to the current construction mode of production, so the production safety management led by the government has many loopholes. Safety production management system of advanced foreign countries is generally "supervision by state, responsibility system in enterprise, insurance control, industry consulting", [1-3]from which we can see that the foreign mode of production safety management is mainly by market constraints, so it is more suitable for the development of market economy. Safety production management in China is based on the administrative supervision,[4-5] in fact, the human factor plays a leading role in the regulatory process, the result is far less than a Lasting good system management, so we must rely on institutional constraints.

Secondly, construction and related safety laws and technical standards system should be further improved. According to statistics, the quantity of main legal laws and regulations related to safety production, labor protection is more than 280 since the founding of our country, but only two are

specifically for the construction industry, one is the "Construction Law of the People's Republic of China" promulgated in 1997, another is "Construction Safety Management Regulations" promulgated in 2004. Although these laws and regulations once got positive effect on standardizing the construction market in China and strengthening the safety in production of building of our country, it must be admitted that, with the development of society, it has exposed many defects and problems. Maneuverability of these laws are not strong enough; some laws exist the repetition and overlapping.[6]

Finally, with the deepening of the reform of political system, local enterprises gradually freed from bound industry administration, become an independent subject in the market economy system. Some project should be supervised but it did not. For instance, some areas still remain in the level of unannounced safety production investigation, lack of daily supervision system and measures. The departments to implement the punishment right changed from the project supervision departments to Urban Law Enforcement Bureau in some areas, which weaken the supervision efforts, resulting in potential safety hazard that cannot get effectively rectification.

Existing problems of safety production management at the enterprise level

First of all, The Contractor jobbed out the contract to a number of small outfits or even illegal individual contractors, leading to lots of problems, such as a not strict construction management, not timely safety training, and a lack of safety investment. And the contractor will eliminate all the nonessential costs in order to pursuit of profit maximization, resulting in potential safety and security incidents; the construction units maybe do not provide a complete building data, and it may cause crack of underground pipeline and damage in the construction.

Secondly, designing institutes do not work on the basis of design specifications, which cannot guarantee the safety of the buildings and construction personnel; Project supervision unit has not found the hidden danger in the construction process and not put security measures on the construction unit.

Finally, as the main part of production and construction, disorganized safety management of the construction units will inevitably lead to accidents in production. Many private enterprises have no safety management organization, and full-time safety inspector general is nominal, usually not go to the scene, only up to cope with the higher level examination. The number of technical management personnel in the industry is less, and the comprehensive qualities is not high, even some project manager lack a full understanding of the construction laws, regulations, standards, specifications. [7]In fact, there are few construction enterprises have a new technology training program for new employees.

Countermeasures of Construction Safety Management Based on PDCA

PDCA cycle is the basic quality management method proposed by an American quality management expert named Deming. Through the process of PDCA management, the construction enterprise could establish self-discipline, self-improvement and continuous improvement of the management system, to enable enterprises to find methods and complete standardization system of safety management mode.[8] In recent years, building construction enterprises in our country advocate for safety standardization. However, we must see, the passive safety production management method is still exists in most enterprises. To change the situation of the serious accidents, in addition to strengthen government supervision, more important is to completely change the passive into an active type.

In order to ensure the effective operation of production safety management, managers should adopt the method of PDCA circulation management, reduce the probability of safety accidents.

(1) Stage P (Planning)

In order to draw up an action plan to construction safety management, first we should analyze the current situation start from the safety production situation of construction enterprise, finding the reasons in some safety problems and analysis it, providing a foundation of the construction safety management objectives; secondly, according to the laws and regulations of the state and local

government, we can determine practical safety management objectives based on the previous analysis of the current situation, and choose a scientific target prediction method to select objects.

(2) Stage D (Do)

It means execute countermeasure plans and measures strictly. In order to implement of construction production safety, all relevant departments and individuals shall check the implementation of security measures in accordance with the established plan and schedule based on the plans and standards clearly.[9] After a phase of implementation of the plan, project principal shall summary of the plans of various subordinate divisions, so as to prepare to coordinate the next phase of the implementation process. Here, the project principal should delegate the specific work to the staff to wake up their enthusiasm and sense of responsibility.

(3) Stage C (Check)

Check if the progress and effect in application meets the requirements, which aims to predict the unsafe factors in the construction, so as to take effective measures to prevent the occurrence of various types of accidents. When the security plan was implemented for a period of time, the departments of enterprise have taken appropriate corrective measures on the weak of their security management, and achieved initial results. But the final effect is still need to test in the production process, evaluation content includes: the degree of implementation, completion Performance etc.

(4) Stage A (Action)

Summary experience is a key link in PDCA cycle, but also a way of improving safety level. After the evaluation implementation of inspection, the manager of safety management hold a meeting with all units to conduct a systematic discussion, and summing up the successful experience, and add these experience into the relevant standards, the rules and regulations; the lessons of failure are summarized as a warning. Unresolved issues would enter a next PDCA cycle.

Conclusion

Safety management is not a a work participant by minorities and security agencies, but all related institutions. Without the full participation, security management does not have vitality. Of course, this does not negate the role of the directly responsible person and safety watchdog. Security concerns from the start to the completion of delivery of the whole process, the production time and production elements. Therefore, we must adhere to a full range of construction all safety management process. We should always be vigilant in peace time and keep safety first to guarantee a safe construction site.

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