

Discussion on Implementation Measures for Safety Responsibilities in Construction Engineering Supervision

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Abstract: With the rapid development of China's construction industry, the scale of engineering construction continues to expand, and construction safety issues have become increasingly prominent. As a key link in ensuring engineering safety, the implementation of safety responsibilities in construction engineering supervision is directly related to the smooth progress of engineering construction and the safety of personnel and property. This article analyzes the main content of safety responsibilities in construction engineering supervision and proposes specific implementation measures, aiming to enhance the effectiveness of implementing these responsibilities and providing theoretical reference and practical guidance for promoting the safe and healthy development of the construction industry.

1. Introduction

At present, China's urbanization process is but in the ascent; development projects are expanding as quickly as possible; building structures are getting more mind boggling, and development troubles ceaselessly ascends at a convenient time. As a result, construction safety hazards have dramatically increased. The supervision unit is an independent third-party institution that is established by the construction unit to carry out supervision and management of the whole process from construction stage, according to laws and regulations, engineering construction standards, and contract agreements. Safety inspection is an important content of the whole supervision work. It is based on this that it has important practical significance for extensively studying the core content of safety responsibility in supervision and exploring scientific, feasible implementation measures.

2. Main Content of Safety Responsibilities in Construction Engineering Supervision

2.1 Safety Review Responsibility in the Pre-construction Phase

The pre-construction phase itself is the cornerstone of the engineering construction safety assurance. Supervising unit assume all responsibility for safety review. The first is that the supervision unit must thoroughly examine the qualification conditions of the construction unit, primarily reviewing the legitimacy and validity of its qualification certificates and work safety permits. Once relevant problems such as incomplete qualifications or expired certificates are found, the supervision unit shall give feedback to the construction unit in time and request rectification by the construction unit within a limited time. If these points do not pass the inspection, you are never allowed to proceed with construction. Second, safety compliance of construction plan must be strictly controlled by supervision unit. In the construction organization design, professional personnel shall be arranged to review whether safety technical measures comply with mandatory standards for project construction and whether they adapt to project characteristics and site environmental risk factors. The special construction plan of high-yield risk components and sub-projects, including deep foundation pit support and high-formwork support, must be reviewed rigorously, and expert demonstration shall be organized when necessary. No construction would be permitted before the plan is approved ^[1]. Lastly, the on-site implementation of safety preparation work should be checked including the temporary electricity plan compliance, acceptance status of construction machinery and equipment, allocate of safety protection devices as well as quality

compliance of safety protection appliance. The supervision unit shall also review the construction unit to establish a work safety management system, implement a work safety responsibility system, requiring that the construction unit clarifies the safety responsibilities for all positions and is fully staffed with full-time staffing work safety management personnel with corresponding professional capabilities (as required).

2.2 Safety Supervision Responsibility During the Construction Process

The above fashion safety hazards are mostly concentrated in the construction process. The supervision unit is required to carry out its supervision responsibilities in a sustainable manner and prevent safe hazards. Supervision staff need to conduct daily or irregular safety inspections of construction site according to the supervision plan and detailed supervision rules. Most important, is whether construction personnel carry out work in strict accordance with safety technical measures and special construction plans, on-site work safety regulations. Such as wearing safety protection equipment, illegal command and using a machine against the instruction with respect to operating it etc. The construction of units must be ordered to correct these violations within a time limit if any violations are found. If it is a serious violation of work safety regulations that may lead to safety accidents, the supervision unit has the right to suspend production. Only after the construction unit has made corrections and passed re-inspection by the supervision unit can work be resumed. However, the supervision personnel are required to actively find out the safety hazards at site and monitor their rectification. For common types of risks, such as deep foundation pit collapse and scaffolding instability, we must discover problems in a timely manner, issue written rectification notices, write clear rectification requirements and completion deadlines, and assign specific responsible persons. It is necessary to record the whole process of rectification and organize re-inspection, so as to completely eliminate hidden dangers of accidents. If the construction unit is reluctant to remedy or does not meet the remedial management request, the supervision unit should timely report to the construction unit and within ^[2] of its own site by thea Construction Superintendent according to, blockweight as required. Supervision personnel also should supervise the construction unit to implement safety education and training, verify that new personnel and special operation personnel in vocational attitude are sincere with the actual effect doing special training, check mount guard certificates of special operation personnel, a strict prohibition on unlicensed personnel carrying out special operations. They should also supervise the construction unit to carry out regular emergency drills, exercise the rationality and pertinence of emergency plans, improve the safety accident handling ability of construction personnel.

3. Measures for Implementing Safety Responsibilities in Construction Engineering Supervision

3.1 Strengthen the Construction of the Supervision System

The supervision system is the basis of the entire framework for standardizing supervision behavior, implementing safety responsibilities. Therefore, it is necessary to strengthen construction from two dimensions: system construction and execution guarantee. Supervision units on the one hand according to current industry norms based on their own business practices, formulate a coverage of the entire process of safety supervision system ^[3]. This includes a work process system for safety supervision, post responsibility system and risk prevention and control systems citation makercitation marker. The operating standards for pre-construction review, whole-process supervision and accident handling at each stage need to be clarified among them; Such as: refine the review time limit requirements and process nodes of special construction plans, clarify frequency standards and recording norms of safety inspections, etc. The safety responsibilities of the chief supervision engineer, professional supervision engineers and supervision personnel shall be further decomposed on the basis of the post responsibility system, so as to avoid responsibility overlap or regulatory blind spots; It is required that each post has clear safety supervision objectives. On the contrary, create a system-level dynamic optimization process. With the continuous development of

technology, policy barriers in construction and constant changes in safety risk types, supervision units should regularly evaluate their enforceability. They should revise and improve the system content in time based on problems discovered in engineering practice, newly issued laws and regulations, lessons learned from typical safety accidents to ensure that the supervision system from beginning to end conforms with industry development trends and safety supervision needs, providing stable and scientific system support for continuous implementation of a whole-process supervision safety responsibility^[4].

3.2 Innovate Supervision and Management Methods

However, with the continuous development of construction industry as well as the gradual increase of bearing capacity in science and technology, traditional supervision and management approaches cannot meet the practical needs of implementing responsibility for safety responsibilities on construction safety issues. Technological innovation and mechanism improvement must be relied on to further improve supervision efficiency and horizontal overall.

The information platform of construction engineering safety supervision can be built by relying on the supervision units and taking full advantage of their unique management model, integration advantages from management to work process. The platform is used by supervision personnel to make data storage of key supervising work trace in real time, such as uploading safety inspection records, rectification notices, and work suspension orders^[5]. The construction unit and the construction administrative department can access engineering safety supervision data in real time through the platform, which realizes breaking information communication barrier and dynamic monitoring and remote management of supervision work meanwhile, based on the data analysis function of the information platform to systematically collect and in-depth analyze construction engineering safety data, initially identify common problems or potential vulnerabilities in safety management.

Second, deploy the intelligent monitoring equipment at the construction site comprehensively for key risk areas such as deep foundation pit, high formwork and lifting machinery as well as on-site working environment. It can realize 24-hour continuous real-time monitoring of construction site safety situation. Once abnormal parameters or safety hazards are detected, it can issue early warning signals in real time and automatically, so as to achieve early identification and timely early warning of safety risks. The remote monitoring system enables supervision personnel to access real-time on-site images and monitoring data without frequently going back and forth between the site, which effectively relieves some of the burdens that frequent inspections impose on relevant staff members while enhancing considerably the capability of discovering latent and sudden safety hazards.

In addition, the complete monitoring data recorded by intelligent equipment can serve as objective evidence for safety accident investigations and responsibility determination, ensuring the fairness and efficiency of the accident handling process.

3.3 Strengthen Coordination and Cooperation Among All Parties

These three major entities, the supervision unit, the construction unit and the construction unit must cooperate with each other to create a relatively stable working safety environment in order to implement safety responsibility in construction engineering supervision. Safety management ensure only heavily relies on the unilateral efforts of supervision unit which is challenging to perform comprehensively.

First, the construction unit must carry out detailed construction safety management responsibilities as this leads the entire construction project with supervision support towards a better delivery of the project on time. The entrustment supervision contract should define the safety supervision authority and responsibility boundaries of the supervision unit as an independent entity capable of undertaking completion. Do not interfere with the normal safety supervision work within the unit. Supervision fees should be paid in full and on time so that the supervision unit has enough funds to purchase safety monitoring equipment, carry out safety training for supervision personnel, etc. The construction unit shall be strengthened in its management over the construction unit, and the construction unit from whom it hires must be urged to strictly fulfill its principal responsibility

for work safety, provide construction conditions that meet safety standards for the construction unit, and promptly coordinate and address issues affecting work safety during the construction procedure [6].

Secondly, as the construction unit, which is the main body that implements on-site operations, should actively cooperate with supervision unit to supervise work and consciously accept supervision. It must do a good job in organizing construction in strict accordance with the construction organization design and special construction plans approved by the supervision unit, and shall not arbitrarily change the content of the plans. It is required to timely report construction progress and on-site safety conditions to the supervision unit during the construction. For rectification problems raised by the supervision unit, special rectification measures should be studied, and completion time limit should be implemented. And after rectification is completed, timely feedback to the supervision unit on disciplinary action results.

Thirdly, there is the construction unit and construction unit to build a communication bridge, active coordination supervision, steps way to build effective cooperation. It should report the progress of safety supervision work to the construction unit on a regular basis, truthfully feed back existing safety hazards and rectification situations in the construction site according to various information including observation records, prominent problems, etc. And put forward professional improvement suggestions. In communication and communication with the construction unit, it is necessary not only to comply with safety supervision such as strict supervision duties, but also to pay attention not to communicate too rigidly or casually need to avoid unnecessary conflicts and contradictions caused by improper communication methods.

3.4 Strengthen the Construction of the Supervision Team

Supervision personnel are the direct executors of supervision safety responsibilities, and their professional accomplishment and business ability directly determine the actual quality of safety supervision work. Therefore, strengthening the construction of the supervision team and improving the professional quality of personnel is particularly critical.

Supervision personnel access mechanism is strictly standardized. Strengthen the overall management of supervision qualification examination; appropriately increase the difficulty and evaluation standards of supervision qualification examination to ensure that those who pass have solid theoretical knowledge and practical skills in safety supervision. In parallel, carefully review the work experience and past performance of candidates to be hired, paying special attention recruits with abundant construction engineering experience and safety supervision practical experience. Especially for the management positions in special operations, it should be clearly required that practitioners engage in corresponding special operation knowledge and skills are also required to obtain professional qualification certificates to work [7].

Second, within the scope of supervision personnel to systematically strengthen the training and education work. Supervision units formulate perfect education and training plans based on their own physical truth, regularly organize supervision personnel to carry out special training in safety knowledge, safety technology, relevant laws and regulations. It is necessary to closely integrate the training content with the development trend of construction industry, as well as on-site work, making it practical and targeted. Such as: strengthen targeted safety supervision knowledge training for new types of projects such as deep foundation pits, high formwork, and prefabricated buildings to effectively improve the ability of supervisor personnel to deal with complex engineering safety problems. At the same time, on-the-job supervision personnel should be encouraged to participate in exchange activities through industry associations and continuing education courses to update the knowledge structure equilibrium timely and improve professional level continuously.

Third, to strengthen and improve the supervision personnel assessment incentive mechanism. Supervision units are required to carry out comprehensive assessments on supervision personnel by weight in terms of work performance, professional ability and professional ethics. It should bind the assessment results with salary treatment, professional title promotion and post adjustment positively. Those who have made outstanding achievements in the safety supervision work and successfully

avoided safety accident should be awarded timely awards and materials. Severely criticizing, educating, degrading and reducing the treatment of safety supervision responsible persons who neglect their duties. People with serious circumstances should be removed in accordance with laws and regulations. Through scientific evaluation and incentive, the supervision workers work enthusiasm and initiative can be fully mobilized for comprehensive improvement of safety supervision work ^[8].

4. Conclusion

A safety liability system is the best approach to ensure construction engineering supervision safety and reduce on-site safety accidents, and it is of great significance for the healthy development of the construction industry. In the process of construction engineering, to give full play to their own role in safety responsibilities, need for optimization and improvement from four aspects: perfect system construction, innovate supervision methods, strengthen multi-party coordination, strengthen team building. As the construction industry progresses and technology advances, new challenges and opportunities for the supervision safety responsibility will arise. Supervision units step up the attention to new industry dynamics, continuously optimize implementation measures, efforts for construction industry move in a safe, efficient and sustainable direction and help improve the level of supervision safety responsibility role, make sure that engineering construction will be sent safely.

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