Key Points of Construction Technology Management in Building Electrical Installation Engineering

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Abstract: Studying the key points of construction technology management in building electrical installation engineering is the key to ensuring that the development of such projects can achieve the expected results. In order to achieve such an effect, this paper will first analyze the common technical problems in building electrical installation engineering, and then propose corresponding construction technology management methods on this basis, in order to provide theoretical reference for relevant construction units and management personnel.

1. Introduction
With the continuous development of our society, people have put forward higher requirements for the quality of construction. For the problems discussed in this paper, electrical installation engineering is one of the most important components in the overall construction. Because some building electrical systems are relatively complex and directly related to the safety of the overall building [1], the relevant construction units must be able to study the application of construction technology and specific management methods in electrical installation engineering to protect. The overall electrical system can better serve the quality of the building. Combined with the status quo, in the construction process of building electrical installation engineering, there are often problems such as poor quality of raw materials, defects in lightning protection design, and inability to meet the quality requirements of pipeline construction. If these problems are not solved for a long time, then the quality of electrical installation of buildings will inevitably be affected as a result, hindering the subsequent use of the building. In order to avoid such a situation, the construction party must be able to propose a new control method in combination with the above problems. This article will be discussed in detail in the following content.

2. Technical Problems Still Existing in The Construction Process of Building Electrical Installation Engineering

2.1 Poor Quality of Raw Materials
In the process of electrical installation engineering construction, some construction units often have shoddy conditions in order to save costs, and the choice of raw materials is the basis for determining the overall construction quality. Under such a background, construction electrical installation engineering construction quality will inevitably be seriously affected. For example, the corrosion resistance of the cable is not up to standard, the tightness of the insulation layer and the core is poor, and the thickness of the steel plate does not meet the expected requirements, which will affect the smooth development of the electrical installation project. In severe cases, it will has a negative effect on the subsequent construction process.
2.2 Lightning Protection Design Has Defects
Lightning protection design is the key to ensuring building safety. However, in view of the current situation, most construction units will have the following problems in the design process: the connection between the grounding connection and the wiring trunk line does not meet the standard, and the metal objects on the building surface are not set. The welding method used for the corresponding lightning protection grounding device and part of the welding part cannot meet the welding requirements. If these problems cannot be effectively controlled during the construction of the building electrical construction, then the performance of the building in the lightning protection function is likely to be difficult to meet the requirements of the existing national standards. Once such buildings are put into use, the lives and property of the residents will be greatly threatened.

2.3 Pipeline Construction Cannot Meet Quality Requirements
The professional quality and professional ethics of construction workers are one of the main factors affecting the quality of pipeline construction [2]. In view of the current situation, some construction workers often use substandard construction materials or arbitrarily reduce the thickness of the line wall in the actual construction process for their own interests. Under the influence of these problems, the overall building electrical system will there will be a lot of hidden dangers. If it is not possible to make corrections in time, it will most likely lead to large accidents. On the other hand, if this part of the construction personnel cannot complete the pipeline laying in accordance with the existing process requirements in the actual construction process, the construction steps are wrong, the improper use of materials and other issues will directly affect the normal function of the electrical pipeline.

3. Construction Technology Management Method

3.1 Preparation Before Construction
The effective implementation of construction preparation directly affects the effectiveness of the follow-up construction process [3]. In order to improve the construction quality of the building electrical installation project, the construction unit and relevant management personnel should complete the pre-construction preparation work from the following points:

3.1.1 Ensure The Quality of Construction Materials Meets the Requirements.
First of all, the procurement personnel should select the construction raw material manufacturers in combination with the high quality and low price standards. On this basis, when the materials enter the site, the special inspection personnel should conduct the sampling inspection again, and the inspection results meet the requirements before they can be put into use.

3.1.2 Train The Construction Personnel
This training process should assist all construction personnel to master the technical and operational processes required in the actual construction process. In addition, the construction unit should provide training for the safety awareness and responsibility of the construction personnel to ensure that these personnel are safe. In the actual work development process, they can effectively complete their duties and comply with on-site safety management methods.

3.1.3 Estimate The Problems That May Occur During the Construction Process
According to the construction quality requirements and the surrounding environment of the construction area, there may be some differences in the actual construction process. Therefore, relevant management personnel should be able to analyze the problems that may occur during the actual construction process in combination with the above contents, and these issues are well prepared for prevention and response measures in advance. Under such a background, the construction efficiency of building electrical installation engineering can be better guaranteed.
3.2 Technical Management During Construction

3.2.1 Distribution Box Installation.
In this process, the construction personnel must first clean up the debris in the distribution box to ensure that the subsequent installation and maintenance processes can be carried out in an orderly manner. In order to do a good job of management on the original basis, the construction personnel can number the distribution boxes and lay the foundation for the subsequent acceptance work. Secondly, the construction personnel should be able to notice the degree of interconnection between the wires and the various electrical components, complete the work in combination with the existing installation specifications, and ensure the installation quality of the distribution box through the use of spring washers. Figure 1 shows one of the common types of distribution boxes.

![Distribution Box](image)

Figure 1 Distribution Box

3.2.2 Pipe Laying
For pipeline laying, the construction personnel should be able to complete the construction in strict accordance with the design drawings to avoid unauthorized changes to the design drawings. Depending on the size of the pipe diameter, if the pipe diameter is less than 20mm, then the hand pipe bender can be used for bending. If the pipe diameter is larger than 25mm, the hydraulic bender should be used for bending. In this process, the technician should pay attention to the fact that the bend of the pipeline cannot be wrinkled, so as to avoid the failure. For the actual laying process, the construction team should combine the self-inspection and the mutual inspection to conduct detailed inspections on the problems that may occur during the pipeline laying process, and timely improve the existing defects so as not to affect the subsequent electrical installation engineering construction process. If there is a voltage loop crossing in this process, the technician can use metal plates to separate the lines to ensure the safety of the overall construction process.

3.2.3 Socket, Switch Installation.
In this process, the construction personnel should be able to notice the following problems: First, the socket should be able to obtain practical protection through the cover plate, and ensure the stability of the socket can meet the construction requirements. For some sockets and switches that do not need to be installed, the constructor can use the wires for reinforcement. Secondly, the construction personnel should be able to consider the operation of the overall power system during the actual installation process, ensure the rationality of the socket and switch position setting, and avoid the failure due to the unscientific installation position.
3.2.4 Lightning Protection System Installation

For building electrical installation engineering, the lightning protection grounding technology used in this construction process mainly is the waterproof floor steel bar and the foundation main rib to make the grounding device, and then it completes the welding work before the two according to the design drawings to ensure the welding firmness. In this process, the constructor can use the U-shaped steel bar bent from round steel as the welded steel bar, and combine the number of main bars to determine the number of welded steel bars.

3.2.5 Ground Wire Installation.

In order to ensure the safety of the installation of the grounding wire, the actual installation process should be completed by at least two people. During the installation process, the construction personnel should try to avoid changing or adjusting the main line section. If special circumstances are encountered, it should be completed by a special person. Related operations, only in this way, the safety of the grounding wire installation can be fundamentally guaranteed.

3.2.6 Electrical Commissioning

Based on the above, the commissioning of building electrical installation engineering should be completed with the following contents: First, the commissioning personnel should check the phase on both sides of the cable. Second, the commissioning personnel should check the correctness of the wiring. Finally, the commissioning personnel should check the outer casing of each electrical equipment to ensure that the grounding settings meet the relevant standards.

3.3 Construction Quality Management

Combined with the above, it is not difficult to see that the construction electrical installation engineering process contains a lot of detailed problems, and if you can not control these problems, not only the quality of electrical installation engineering is difficult to be effectively guaranteed, but also the safety of the construction site may be affected. Therefore, the construction party must be able to do a good job in construction quality management in conjunction with the electrical installation quality requirements. The specific management strategy should include the following:

3.3.1 Set Up Special Regulatory Positions to Avoid Rework Problems.

The rework problems that occur during the construction of electrical installation projects will make it difficult to effectively control the overall construction period and have a serious impact on the economic benefits of the construction unit [4]. In order to avoid such a situation, it is very necessary to set up a special regulatory position. The supervisory personnel shall check whether the construction personnel can complete the installation of electrical equipment according to the existing construction plan and construction drawings in the actual work. Once the problem is found, the supervisory personnel shall promptly determine the responsible person and assist the relevant construction personnel to improve and avoid the problem scope. growing.

3.3.2 Limit the Electrical Installation and Construction Process.

In this process, the construction party and the design party should be able to formulate various construction techniques in advance, and guide the construction personnel to complete the electrical installation according to these contents, so as to avoid excessive dependence on personal experience during the actual construction process. Under such a background, the probability that the construction quality of a building electrical installation project will be affected by human factors will be effectively controlled, thereby achieving the goal of improving construction quality. Taking the pipe threading technology as an example, the relevant construction personnel should be able to effectively master the techniques of threading technology, wire selection and pipe threading, and threading while laying. The construction party can train the electrical construction personnel in combination with these contents before the actual construction process begins.
3.4 Construction Safety Management
Due to the characteristics of the building electrical installation project, the construction party must be able to pay attention to the safety management of the construction site to avoid the safety problems caused by human factors in the actual construction process. In order to meet such requirements, the construction party should start this work from the following points:

3.4.1 Cultivate The Safety Awareness of Electrical Construction Personnel.
The safety awareness of the electrical construction personnel is one of the main influencing factors determining the safety of the construction site. In combination with this, the constructor must be able to conduct safety awareness training for electrical construction personnel before the actual construction process begins. In the training process, in addition to explaining the safety construction technical standards, the training personnel should be able to clearly explain the serious consequences that the construction personnel may violate the safety technology operation standards. At the same time, after the training is completed, the construction party should pass the safety knowledge assessment. This part of the staff is guaranteed to be proficient in these contents, and some construction workers who have not passed the assessment should participate in the retraining and take up the post. Under such a training mode, the safety awareness level of the overall construction team will be effectively improved.

3.4.2 Set Up A Security Inspection Team
The establishment of a safety inspection team is the main way to avoid electrical construction personnel from violating safety construction technical standards. During the actual inspection process, the inspection team should be able to timely discover the safety problems existing in the electrical construction process through irregular inspections, and on this basis, assist the relevant construction personnel or responsible persons to carry out rectification and eliminate the safety hazards in the initial stage. To avoid further development of these problems and cause large-scale security incidents. Persons who do not comply with the construction site safety system and cannot operate in accordance with the existing specifications during the inspection process shall take certain punishments to prevent similar situations from recurring.

3.4.3 Acceptance Management After Construction Completion
Acceptance management is the main way to avoid the problems existing in the electrical construction process and affect the actual operation of the building electrical system. In order to ensure the effectiveness of this work, the specific acceptance process should be completed with reference to the following contents:

3.4.4 Establish A Practical and Acceptable Acceptance Management System Before Acceptance.
The professional technicians shall conduct a comprehensive verification of the electrical construction quality and timely discover the hidden dangers that may affect the subsequent use. If there are still quality problems found during the acceptance process, the construction party shall be guided to promptly make corrections to avoid the construction period being extended.

3.4.5 Conduct A Trial Run Before Being Put Into Use
Trial operation is the main way to discover existing problems in building electrical systems [5]. In this process, the acceptance personnel should be able to check the location or equipment with a high probability of failure, analyze whether there is a fault or safety hazard, and finally put the electrical system into use based on the inspection results.

4. Conclusion
In summary, this paper mainly through the preparation before construction, technical management during construction, construction safety management, construction quality management discuss the improvement and based on the simple discussion of the common technical problems in the current stage
of electrical installation and construction of the building. In the subsequent development process, the relevant construction units must be able to pay attention to the management work of the electrical installation project, and ensure that the problems which may occur during the construction process can be supervised through the whole process management, so that the construction quality, the construction cycle and other aspects can better meet the needs of the majority of users, fundamentally avoid the safety accidents caused by electrical installations, and promote the continuous development of China's construction industry.

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