

Study on the Quality Control of Electrical Engineering

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Abstract. Quality is the life, is to protect the owner's return on investment can be achieved. Quality is not only related to the project functionality and value, but may also be related to the national interest, the safety of people's lives and property. As the State Grid Corporation of power transmission project is the construction business in the most important component. Transmission quality of the merits of the construction project for social development has a significant impact, related to the electrical safety of millions of households. At the same time, the quality of the project is not only related to the safe operation of the power grid in major equipment, but also to the safety of electrical operating personnel, due to the inferior quality of the project construction quality caused by accidents and casualties have also occurred. Therefore, in the power transmission construction projects, the need to strengthen the management of construction quality, ensure construction project quality and efficient transfer of production standards.

Introduction

Electrical engineering is one of modern science and technology in the core subjects. With the rapid development of science and technology, the status and role of increasing importance in electrical engineering, has developed into today's high-tech fields in key disciplines indispensable range of today's electrical engineering covers a very wide, almost all electrons, photons behavior related projects, are all areas of electrical engineering. Quality and safety occupies an important position in electrical engineering, electrical engineering quality directly affects the operation of the overall safety of the building equipment. For now, though electrical engineering has become an integral part of life, but it would of electrical engineering at an early stage, compared with developed countries, there are still some gaps. Coupled with the range of electrical engineering involves a very wide factor that affects the quality of electrical engineering is also very much, therefore, to explore the electrical engineering quality control technology is imperative.

Common Factors that Affect the Quality of Electrical Engineering

Electrical installation works, such as complete sets of power distribution box "control panel" lighting power distribution boxes and other installers professional quality is low, the installation process is easy to retain security risks, such as distribution box coordinates inaccurate, cluttered wiring switch box after installation check line not send electricity use, etc. these problems are likely to cause accidents equipment use.

Construction site electricity imprudent important cause electrical wiring caused the fire hazard. Common causes of electrical wiring hidden line phase short circuit and wire insulation failure. Belong to phase short circuit wiring errors or installation errors due to negligence Wiring make off line wiring resistance increases, causing phase short circuit; and installation errors are due to the bare wire is too low result in a collision with each other between the metal material and wire, wire spacing is too small and can lead to a collision between the wires and the wires to each other regardless of the occurrence of a short circuit. in either case, you can make phase short circuit between the electric circuit. Another point to note, to ensure that the drying space when installing the circuit breaker in order to avoid short-circuit breakdown of water vapor. That wire insulation failure of insulation aging or damaged resulting in the loss of insulating ability, so that the bare wire core or insulation breakdown voltage.

Mine construction is the key electrical engineering mine construction common problem: jerry: Not galvanized round or flat steel in accordance with the requirements of construction, where the use of part of a reduced diameter round, not in accordance with the design requirements to complete construction. lightning grounding device buried: the ground body buried too shallow, "soil resistivity grounding spacing is too small or too buried by grounding may result in lightning protection facilities can not effectively prevent the circuit cable lightning roofing metal pipe connections: the installation process outdoor metal tube lightning protection devices connected to instability, or deflectors section smaller than the cross section with lightning, poor weld quality between the two, are prone to problems.

Wire and cable pipeline laying process lax supervision, a series of questions: line in the process of laying the wire does not "burying cables straighten it; not laying pipe lines as required using standard materials, such as savings in the use of a thick when the tube wall with thin-walled tube in place; metal nozzle burr does not deal directly welded; part of the cable is not grounded or grounding line is not strong; even in order to shorten the construction period is not standardized operation.

Lighting installation process common problems: worker not careful when installing installation, wall switch socket panel or uneven result for later use switch is not flexible or a bad contact, loose sockets; parts or individual lighting installation height does not meet the requirements; lamp model specifications are not in accordance with established design and installation; interior wiring dedicated cable is not clearly marked, late effects wiring.

Electrical Engineering Quality Control Technology

Quality control measures taken in preparation for the implementation phase of the project, it can lay a good foundation for the later quality control. The project works under its own characteristics, adopted a series of targeted measures, and achieved good results.

Material, drawings, measurement equipment and instrumentation, technical measures, and other special types of certificates to ensure the construction quality of a variety of factors, require the construction unit must be clear and full-time staff dedicated department to manage. For cultural power transmission project construction contractor established by the quality assurance system is perfect, sound, etc., by the project supervision department is responsible for auditing the same time, supervision also is running in the daily management of its normal supervision. The implementation is not in place, make the appropriate assessment.

Design drawings prior to construction, in accordance with the provisions of the construction unit and project supervision through the Ministry of Audit, in order to carry out the construction joint hearing without objection. Strict implementation of the project tests, system tests, organized by the owners or supervision unit, the unit design and overall responsibility for the professional designer to the building, construction, supervision and other units designed disclosure. Content tests, including general project overview, schedule requirements, conditions and requirements for the construction are key parts of the precautions. Design unit tests, during the meeting about the unit raised the problems in drawing, design units are introduced to explain, clear solutions, has doubts about the place to discuss, design disclosure to ensure that the parties after the construction personnel, supervision and construction unit of design and construction requirements intent can understand and master.

To enter the 110-kilovolt power transmission project construction site of cultural raw materials, processing of finished and semi-finished products, prefabricated parts, must be reported to supervision units to verify before entering the preliminary review by the supervision unit responsible for the construction materials approach all materials signature confirmation by the supervising qualified to use in the project. Raw materials, prefabricated parts, finished products, semi-finished part failure, are required to make a significant mark and promptly repaying the appearance, avoid misuse.

The regulatory requirements for construction quality. Cultural power transmission project, the focus of the static settling of the foundation, the foundation bearing capacity and dynamic load test,

and construction sand strength of concrete block, etc. were testing.

Construction units should strengthen inspection and check the quality of construction, adhere to self-inspection, mutual inspection, professional inspection and handover inspection; supervision units adhere to routine inspections, follow-up inspection, special inspection, a comprehensive inspection and supervision and inspection methods, construction quality inspection, inspection the results reported in the monthly report supervision owners.

Hidden for power transmission project construction inspection work should be strictly enforced. In particular, have a greater impact on the quality of the entire power transmission project substation tower foundation engineering and civil engineering, in strict accordance with quality acceptance criteria will be part of the project acceptance.

Strict implementation of the next station system supervision, strengthen quality on-site monitoring. Construction of the tower foundation (foundation pit depth, steel specifications, size, number and location of the protective layer thickness, the base section size and quality of the concrete around the building; rock foundation of pore size, pore deep, buried around the pieces of iron and concrete build quality; the case of buried grounding), the first base tower group sets up the tension stringing across the test section and special construction, the guide tube and ground linear tension tube crimping and wire damage process, cable laying, laying trench and pull pipe concealed works construction and other key parts and supervisors to be next to the station (tracking) supervision.

Throughout the construction process, according to the quality management theory Pareto hair, appearing more construction quality problems for statistical analysis, to find the key reason.

After the project is completed, according to the test procedures and commissioning, operation results meet production requirements shall be based on acceptance of the final acceptance of the State Grid Corporation Transmission Project. Acceptance by the owner project manager organization, problem acceptance found during the required rectification, according to the startup Commission issued rectification acceptance report, by the construction unit rework rectification has been in line with the heavy conditions of acceptance of the project after rectification think should be re acceptance. Substation civil works after passing the acceptance post electrical installation units, the final completion and acceptance of the electrical part be carried out. Final completion and acceptance of the entire power transmission project qualified by the start acceptance committee issued proof of acceptance, acceptance of group members on the acceptance certificate signed and sealed, according to program into the system test run, the test run after passing formally handed over to the power grid unit management. After acceptance of the project, all work Suan drawings, commissioning recording transmission project by the construction unit in accordance with well-built drawings of the original contract, while the project was transferred to the shuttle station construction unit, construction unit information officer to do archiving.

According to the quality program documentation requirements, improve the quality of information consolidation project, feedback work. Correct analysis of the various types of quality of the information collected, and to preclude the development and take relevant corrective and preventive measures based on .IK quality problems. In order to ensure quality objectives, the management of quality of construction projects using pre-control method, namely the construction process tracking, the first time to grasp the dynamic quality, good statistical analysis of the problems found during the construction in time to find out why, formulation corrective measures, and follow up the effectiveness after the rectification, the quality of a common problem in the bud. We should insist on regular meeting site project week, the month, the owners of units to facilitate the timely detection of problems, the implementation process. Quality issues ensure the smooth flow of information channels of quality and timely solutions. During the construction simultaneously and technical data is collected, in order to reflect the entire process, each step of the implementation process of representative video camera for traceability. As an important part of information management, file management is one of the important works of project management. Established engineering drawings electronic record-keeping, management system, to facilitate timely access to drawings for the project in doubt the quality of the place can be traced back.

Conclusion

Electrical engineering quality control in the electric field plays an important role in its multi-faceted content and factors have greater difficulty of the operation. At the same time, studies of electrical engineering industry in quality control of electrical engineering still lack the breadth and depth, which also further increasing the difficulty of electrical engineering quality control. Therefore, professionals of the electrical engineering industry must strengthen research quality control. In addition, methods and innovative measures should be more aspects of quality control, promote the development of the electrical engineering industry, thus promoting China's economic development.

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