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Study on Risk Factors and Countermeasures of Coal Geological Exploration

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Abstract: Since the promulgation and implementation of a series of policies in succession, China's coal industry has been very well developed, and its quality has a certain guarantee. However, with the reform of the national system and the arrival of the peak of coal exploration soon, the geological prospecting team system has changed from the planned economy to the market economy at the same time, there have been some undeserved quality problems in coal exploration. This paper analyzes the main problems to promote the healthy development of the exploration market and improve the exploration quality. This paper briefly analyzes the risk factors of coal geological investigation and several countermeasures for reference.

Keywords: Geological exploration; Problems; Ways to improve

1. Main problem existing in the current exploration stage

1.1 Insufficient geological "trilateral" work.

In the process of geological exploration, we must adhere to the geological "trilateral" work system of analyzing and studying geological data while exploring constructing, and adjusting and revising exploration designs. At present, the weakening of "trilateral" in the coal geological exploration process is the most prominent problem. The direct result is that after the exploration project is finished, it is found that some project deployment is not very reasonable, some projects are wasted, and the best quality effect is not achieved. There is a serious phenomenon of "two skins" in quality implementation. Its performance is that many process records of the quality system exist to cope with the phenomenon, when the inspection is filled in the quality record form, the implementation process is not strictly executed according to the program documents, let alone the project planning book, special work instructions, and other information, so it fails to fundamentally play the process control role of the quality system.

1.2 Project package instead of management and the poor drilling technology of the outsourced drilling rig

With the speed of production and the expansion of production scale, the outsourcing team has become an important condition for each unit to open up the market. However, in the selection of no strict review of the subcontracting team's qualifications, technical level, and other factors, the project workload was too large, the work was tight, the team rushed to start, technical quality guidance, management work did not keep up, resulting in a part of the outsourcing team serious quality problems, its main performance is poor drilling technology, scrap more.

1.3 The lack of skilled personnel and professional configuration of the project cannot guarantee that normal work is carried out.

The team is young, there lack of technical and management experience, the technical staff is not enough to learn, the work is not modest, not practical, not a deep understanding of all kinds of norms, and cataloging is not standardized; The purpose of engineering investigation is not clear, no pertinence and focus, resulting in poor report quality.

1.4 Survey report

The degree of geological research is low. The detailed part of the content is not detailed, and the brief part is not simple; Due to the depression of geological work in the past few years, the technicians of the project have no chance to undertake large-scale exploration projects at present, and only know how to write reports. The reports are full of duplicates and errors.

2. Reason analysis and improvement measures

2.1 Vigorously strengthen the construction of talents

The factors affecting the quality of the project can be summed up in five aspects, namely, people, materials, machinery, methods, and en-

vironment. People are the main body of production and business activities, and the quality of personnel, that is, people's cultural level, technical level, decision-making ability, management ability, organization ability, operation ability, control ability, physical quality, and professional ethics, will, directly and indirectly, affect the quality of exploration products, so the quality of personnel is the most important factor affecting the quality of engineering.

At present, there is a shortage of professional talents in coal geology and exploration, and the knowledge structure is unreasonable. It is the primary task to strengthen the construction of a talented team to improve the quality of exploration. At present, although various units have introduced a large number of students, the major setup of the university has been greatly adjusted and reformed, and the scope of the major has been widened, but the professionalism has been seriously weakened, and the newly graduated college students cannot meet the needs of coal geology projects. In the past, a project team had 15 ~ 20 people or even more, and each professional had several engineers, and now a project team is only three or four people, and most of them are new students assigned in recent years, because of the lack of personnel, "trilateral" work is basically out of the question, encounter geological conditions change, have not had time to analyze the geological laws, investigation and exploration project deployment, new drilling has been in place.

The final result is the unreasonable layout of geological engineering and the waste of part of the project, which has not been economic, scientific, and reasonable. Therefore, we must make great efforts to train technical personnel, build a high-quality professional and technical team, and make clear the importance of strengthening personnel construction from a strategic height. It is necessary to do a good job in grass-roots training, encourage teachers to bring, encourage posts to become talented and improve technical personnel's business skills. We should work creatively, strive to find talents, create an environment to support their career, and exercise in important projects and important posts to make them grow healthily. The focus of quality work is the grass-roots level, the grass-roots focus is on the operator, and the basic work is solid or not solid, which determines the success or failure of quality work. Vigorously strengthen the construction of a talent team, quality work will take the initiative, and there will be fewer problems.

2.2 Following the laws of geological work, reasonably designing the exploration cycle, and doing a good job in the exploration process of the "trilateral"

Geological "trilateral" work weakening, is bound to cause the project layout is not reasonable, the duration of the target is not reasonable, and the results can be imagined; The weakening of the "trilateral" work can also very easily cause very individual geological exploration unit project team to cheat, such as mapping geological boundary point description fraud, drilling depth fraud, coal core is not enough with other coal fraud, its means hidden, difficult to find. Therefore, to determine a reasonable exploration cycle and the investment of construction machinery and personnel, and swarm a large number of drilling RIGS on the ground, it is bound to violate the laws of geological work, affect the geological "trilateral" development, and affect the quality of the exploration stage. In the process of coal geological exploration, the basic principles, work degree, and acceptance standards stipulated in the Code for Coal and Peat Geological Exploration and the Quality Standard for Coal Geological Exploration drilling holes must be implemented; We must adhere to the geological "trilateral" work system, with the continuous development of geological exploration work, we must pay close attention to the review and comprehensive analysis of all kinds of original data, reflect the results to the relevant charts, timely find out the differences between the exploration design and the actual place, put forward suggestions for the adjustment of the exploration work, and lay down points for the submission of high-quality reports.

2.3 Strengthen technical management, and strictly check, so that geological work problems are eliminated in the embryonic stage

Of ISO9001:2000 quality standard implementation system function one is to improve the market competitiveness of enterprises; The second is to improve the quality of enterprise personnel; The third is to standardize the work; the Fourth, it can avoid and reduce work mistakes. Therefore, all the work should be carried out according to the requirements of the quality implementation system certification. To prevent the flow of form, there are two skin phenomena, work objectives, especially quality objectives to be linked to economic interests, and do a good job of assessment and acceptance. Strengthen the three-level review system of the results report; Strengthen the management of outsourcing units, carefully evaluate their basic conditions and construction performance, and incorporate them into a unified quality management system, to fundamentally eliminate the occurrence of outsourcing management, and contractors should be linked to construction quality. It is necessary to clarify the management scope and responsibilities of the responsible personnel at all levels, the three-level responsibility system corresponding to the first person in charge of administration, the chief engineer, and the project manager, and the management scope and responsibilities of the responsible personnel at all levels, the accountability system should be implemented for major quality accidents and major technical program decision-making mistakes, and the quality indicators should be included in the annual comprehensive assessment.

2.4 Strengthening system construction and execution

Whether the quality management system of a unit is sound and whether it ADAPTS to the new mechanism of scientific development, it is particularly important to strengthen system construction. Strict quality system management can realize the function and institutionalization of work, clarify the rights of managers, and improve the efficiency of quality management. At present, each unit has passed the ISO9001:2000 quality standard system, the quality management system is sound, but there are still hidden dangers in the overall quality, one of the main reasons is that the unit execution is not strong, the unit chief engineer or project technical person in charge of authority is not enough, cannot do things according to the rules.

Execution is the concept, ideas, planning, and deployment of the implementation of the ability, with the system to standardize the implementation of the standard, that employees must be standardized according to the requirements of the system behavior, to the system as the criterion to ensure the quality and quantity of the completion of the work indicators, with the system to achieve the purpose of mobilizing staff status. The improvement of the system and the execution of the unit development has an extremely important impact, on an enterprise, no matter how great the goal and concept, no matter how perfect the strategic plan, if there is no perfect quality management system, cannot be strong implementation, ultimately can only talk on paper.

3. Conclusion

The quality control of the coal geological exploration stage is particularly important, and it is an important factor that determines and affects the quality of the project. We should start from all aspects, find the problem at the same time seriously think about its causes, and solve the problem from the root, to better ensure the quality of the project.

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