Analysis of human resources optimization of the electric power project management

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Abstract. During the electric power project management, human resources are an important production factor, related to the project construction and management efficiency. Therefore, during the electric power project management process, human resources allocation should be analyzed so as to build a corresponding management system and formulate a reasonable human resources allocation for the optimization items of the management plan. Based on the above understanding, the author analyzes the optimal allocation of human resources in the electric power project management so as to provide useful references for those interested in the issue.

1 Introduction

As the electric power undertaking keeps on moving ahead, the number of electric power projects of various kinds is on the increase. Therefore, in order to achieve better development, the electric industry should guarantee the management efficiency of the electric power projects. At present, the issue of human resources allocation has been a major issue to the electric power project management. Therefore, it is necessary to analyze the optimal optimization of human resources in the electric power project management so as to promote sustainable development of electric power enterprises.

2 Analysis of the human resources allocation in the electric power project management

During the electric power project management process, project human resources should be properly allocated so as to reduce the human resources put into project construction management and create more benefits for project construction management. As is shown in Eq. (1), the labor force input should be in direct proportion to the total labor hours, and the total input of labor hours are related to factors including the unit project amount and expenditure of time. According to the diminishing marginal return theory, if the input of a production factor is increased to certain level under the condition that all the other factors remain the same during a fixed period of time, its marginal output will gradually decrease. Therefore, if the allocation of human resources is too much, it will result in the diminishing marginal income of electric power projects. Therefore, during the electric power project management process, human resources allocation should be optimized according to the project scale, cycle and periodical objectives.

3 Analysis of optimal human resources allocation in the electric power project management

3.1 Building of the optimal human resources allocation system

In order to realize the management goal of electric power projects, the project management responsibilities should be further divided. To the end, positions and duties of the project organizations should be divided, and every plan and task should be decomposed so as to clarify personnel’s responsibilities and rights. However, to achieve a proper allocation of human resources, a corresponding optimal allocation system of human resources should be put in place. Specifically speaking, the human resources allocation and management department should be set up, and human resources capital accounting system should be introduced. During the construction process, specific tasks of the department should be made clear. First, the department should confirm human resources

kinds, quantity, source and other properties according to project needs before properly allocating resources. Second, the department should conduct a real-time monitoring of human resources allocation, and make adjustment in opportune time. Third, the department should undertake the human resources training responsibility to keep its personnel under the best working state and increase the human resources allocation benefits. The introduction of the human capital accounting system calls for the accounting of charges incurred by paying personnel, giving personnel welfare and training personnel, based on which the benefits brought by human capitals to projects can be analyzed [1]. Besides, the human capital department can set multiple economic indexes, including acceleration of project schedule, improvement of productivity and lowering of machine loss, and conduct a quantized analysis of these data. Based on the analysis results, human resources can be adjusted to make human capitals better utilized.

3.2 Formulation of the human resources allocation plan

To realize optimal allocation of human resources, proper human resources allocation plans should be drawn up. These plans should not only include specific positions, responsibilities and return relationship in the electric power project, but also conduct proper resources allocation according to human resources demands of the project and various project interfaces. Currently speaking, it can refer to similar project templates, analyze demands of relevant project members and adhere to human capital management practices to formulate such plans. First, in terms of responsibilities and positions, the principle of scientificity should be kept in mind to confirm responsibilities for different groups and individuals. Second, the personnel allocation management plan should be formulated to balance personnel's demands. To put it specifically, resource leveling method can be adopted to conduct partial coding in advance so as to properly adjust the work order. The leveling method can balance personnel's demands, reduce personnel's idle hours and make better use of human resources [2]. Besides, after the confirmation of rights and responsibilities of personnel of various levels, the project management should be equipped with management personnel of certain management level and with professional skills. The reward and punishment measures should be formulated according to project characteristics. In this way, a dynamic project management can be achieved and the project management level can be greatly improved. However, the electric power project construction and management lasts for a long time, the formation of project teams will also undergo a long development period. Therefore, formulation of the human resources optimization plan can be divided into three periods, namely forming period, running-in period and standardizing period. Only in this can human resources be efficiently utilized.

3.3 Service-oriented human resources allocation

Efficient allocation of human resources based on service demands is at the core of optimal human resources allocation. Take the reliability improvement project of the low-voltage electricity distribution network. The project includes the construction plan formulation, the service suspension and recommission plan, the work ticket issuance, the work group construction and the project check [3]. The demands for the number of personnel for different service types can be learned through the analysis of tasks during different links and the analysis of the bearing capacity of personnel for different tasks. (See Table 1) Faced with the problem of personnel shortage, the project human resources department transferred its personnel to positions requiring similar skills. For example, the personnel in charge of prediction were designated to fulfil the scheduling role; the circuit inspection personnel were designated to be in charge of project check. The position rotation helped realize optimal human resources allocation.

Table 1 Demand for personnel for various service types of the low-voltage electricity distribution network

Positions	Planning Specialist	Scheduling Specialist	Issuing	Permission	Construction	Check
Demand	3	3	4	9	9	5
Actual	1	2	3	6	9	3
Lack	2	1	1	3	0	2

3.4 Skill-oriented human resources allocation

During the electric power project management process, human resources training should be based on the skill demands of projects. In this way, personnel can learn new technical standards and construction skills, and learn to operate new construction equipment. To the end, the project human resources department should analyze industrial qualities of personnel based on the project characteristics, and then train personnel according to project's training objectives or rotate their positions to achieve expected training effects.

4 Summary

In a word, in order to smoothly implement the electric power project, the optimal allocation of human resources is a necessity. This research shows that management personnel can get prepared for human resources management by building the human resources optimal allocation system and formulating the human resources optimal allocation plan. Based on that, the human resources department should realize optimal allocation in accordance with service demands and technical demands so as to provide guarantee for the implementation of the electric power project.

References

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