

Model Construction of the Competency of Steam Turbine Enterprise Engineers

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Abstract

The modernization development of society and the continuous progress of science also put forward new requirements for the talent demand of enterprises. The engineer of steam turbine development is the backbone of the heavy task of enterprise modernization development. Therefore, the construction of steam turbine factory competency model, guided by the external Engineer; steam turbine plant; competency; model, with knowledge, skills, responsibility to build the external behavior of engineers, with values, attitude, accomplishment, achievement motivation build engineer internal performance, composed of competent for the development of steam turbine modernization engineer competency, contribute to the engineer's own development and enterprise development.

Keywords

Engineer; Steam Turbine Plant; Competency; Model.

1. Introduction

With the continuous development of social science and technology and the continuous innovation of production technology, the mechanized management and intelligent governance of enterprises have become the new normal. The modernization transformation of the enterprise has put forward new requirements for the adaptability, innovation and coordination of the engineers. Engineers of steam turbine enterprises (the "enterprises" below specifically refer to steam turbine enterprises) are also facing new challenges and opportunities.

2. Concept Definition

2.1 The Concept and Composition of Competence

In 1973, Professor McLeland of Harvard University first proposed the concept of "competency", and revised it in 1990, pointing out that competence has an important influence on the production of excellent results. It can be understood as the knowledge, ability and motivation characteristics of individuals to have in specific work activities to achieve high performance. It mainly consists of three elements: knowledge, ability and motivation. Knowledge is the implementation basis, regular method and experience summary of individuals with high performance; ability is the skills and intelligence of completing work with high performance; motivation is the internal and external motivation generated by individuals in the process of work activities.

2.2 Overview of the Competency Model

Because the models derived from competency studies in different fields vary, there is not yet a fixed aggregation concept of competency models. The competency model considered by Professor McCrilland is a system [1] that can be measured and trained out of relevant knowledge, skills and attitudes that affect individual work performance. An iceberg model consisting of knowledge, skill, social role, self-concept, trait, and motivation; an onion level model consisting of knowledge and

skill, social role, self-concept, trait, and motivation; and a general competency model [2] consisting of 21 types of team management, confidence, autonomy, responsibility, and perseverance. In general, the competency model not only includes explicit knowledge and skills, but also implicit qualities and traits that are difficult to quantify. Therefore, the competency model should pay attention to the combination of surface elements and deep elements, so as to better distinguish the excellent and ordinary performance.

2.3 The Competency of Engineers in Steam Turbine Enterprises

Engineers are technical talents with solid engineering science knowledge and natural science knowledge and who have obtained relevant qualification certification, and have the problem-solving ability by combining engineering principles with practical work. Steam turbine enterprises refer to the manufacturing enterprises that research and develop large thermal power steam turbine, heavy-duty combustion steam turbine, ship equipment and other large power generation equipment and conduct sales and service. Engineer of steam turbine enterprises refers to the general term of professional and technical personnel engaged in steam turbine enterprises who have obtained corresponding qualifications. It includes quality and safety engineers, software engineers, mechanical and electrical engineers, technical engineers and other technicians engaged in steam turbine work.

3. Model Construction of the Competency of Steam Turbine Enterprise Engineers

At present, with the development of science and technology, the competency of enterprise engineers has attracted much attention, and many enterprises are also actively carrying out the training of engineer competency. This study combined with the existing competency model and the characteristics and requirements of steam turbine enterprises, try to from the engineer achievement motivation, values, quality, attitude, knowledge, skills, responsibility, external role and the steam turbine culture to overall competency model (as shown in figure 1), to provide theoretical basis for the evaluation and improvement of turbine engineers, and further promote the growth of steam turbine internal engineers and the improvement of enterprise staff quality.

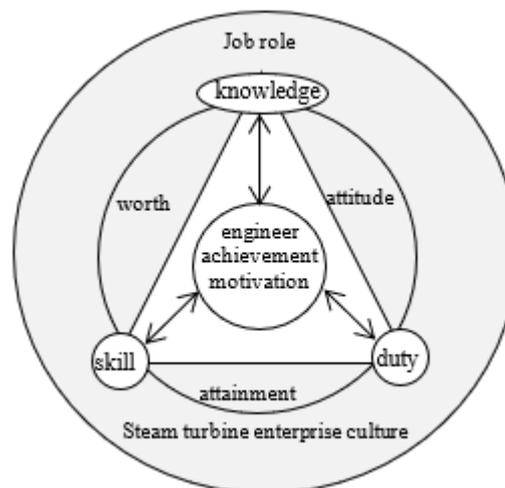


Figure 1. The competency model of steam turbine engineer

3.1 Exotic Environment

3.1.1 Steam Turbine Enterprise Culture

Corporate culture is an important factor affecting the efficiency of engineers' work, and also the basis for promoting the creation, transformation and innovative development of corporate culture. Therefore, steam turbine factories should pay attention to the construction of their own corporate culture, pay attention to the words and deeds of engineers, and strive to "drive the action by the corporate culture, and inherit the corporate culture by the action". Establish the corporate culture

confidence of steam turbine engineers, and commission their competence in the enterprise. Enterprise culture and enterprise system coordinate and complement each other, forming the spiritual strength of the enterprise and the "combination" of enterprise development. Engineers' daily behavior, work attitude, production cohesion are inseparable from this "combined fist". Therefore, the enterprise concept of steam turbine engineer is the basis of engineer's competence, and also the basic support of external expression form.

3.1.2 Job Role

How to position their own role and how to realize the relationship between corporate responsibility and their own development is the basis of engineers' competence. Only by clarifying my role and understanding the responsibilities and obligations of an engineer can I give full play to my ability in the enterprise, find the right positioning, and grasp the right direction to develop my own competence. Therefore, engineers should be clear about their own role positioning, do what they can do, do what they should do, do what they can do, and do not cross the line. Understand the corporate culture of steam turbine, follow the internal ceremony and etiquette of the enterprise, do what the role should do, and do what the role should have.

3.2 External Behavior

3.2.1 Knowledge

The basic knowledge of engineers is one of the external manifestations of engineers' competence. Engineers should make clear how to use their own knowledge to complete the tasks of the enterprise. In addition, with the development of social economy and the continuous update of science and technology, engineers should constantly update their own knowledge. So as to reserve knowledge for future development.

3.2.2 Skill

Engineers' skills are also a kind of knowledge transformation, which is the external performance ability to complete enterprise work. Therefore, enterprises should pay attention to the development of engineer skills, and constantly improve the skills of engineers. The skills of engineers usually include the technical skills, collaboration skills, organization skills and communication skills; the technical ability means the technical requirements; the technical ability refers to the ability to coordinate and form technical force with the enterprise team; the organization ability to coordinate various resources during the work and realize safe and efficient operation; the communication ability, the ability to understand and receive information and the listening ability, and to accurately receive the information of others, especially the leaders.

3.2.3 Duty

Engineers should make clear their own responsibilities, have a clear positioning of the responsibilities and obligations in the enterprise, know what things need to be done, what things cannot be done, and what responsibilities need to assume. Guide the engineer's behavior activities through the sense of responsibility, which is not only a constraint, but also a reflection of accomplishment. In the process of modernization development, the formal responsibility is no longer enough to deal with the development of the enterprise. Engineers should determine the possible consequences in the future according to their own responsibilities, and then restrain their own behavior, that is, engineers should have the forward-looking responsibility pointing to the future.

3.3 Intrinsic Performance

3.3.1 Worth

The value of the enterprise engineer is the value orientation of the enterprise and the engineer, and it is the goal pursued and pursued by the enterprise and itself. Values are the core of the enterprise and also the spiritual pillar of engineers. As an economic entity and a cultural community, the steam turbine factory will form the standard values within the enterprise to influence the value orientation

of the engineers. Therefore, enterprises should pay attention to the construction of values, so that engineers can produce the cohesion of enterprise values.

3.3.2 Attitude

Engineers' attitudes towards things, work and life are the basis of engineers' self-value, and the driving force of work practice in enterprises. With the right attitude towards the work, it will make the work done better, more careful, more standard.

The study on the competence of engineers points out that the attitude of engineers includes confidence, autonomy, responsibility, honesty, achievement orientation, self-control, attention to details [3], that is, patient, careful and responsible working attitude. In addition to the basic attitude of engineers, this study believes that engineers in a steam turbine factory should also have specific proprietary care, study and patience. One is careful, because every part in the steam turbine is crucial, engineers must do absolutely careful, responsible for the things handled to the end. Second, study, steam turbine factory has a certain enterprise foundation and foundation, many things have developed to a relatively mature stage, so engineers need to have the mentality of study, treat the existing things for in-depth research, for the continuous development of innovation enterprise blood. Three is to have a certain amount of patience. Since to be careful, to study, it is necessary to have a certain patience to achieve careful work and in-depth study, in order to achieve their own development and continuous innovation of the enterprise.

3.3.3 Attainment

The internal development of engineers' competence is inseparable from their accomplishment. Their political, professional, psychological and cultural accomplishment determine the behavior of engineers in their subconscious. Therefore, the development of engineers' competence should pay attention to the cultivation of their quality. Among them, political quality refers to having firm political stand and political consciousness; professional quality refers to positive professional mentality and correct professional value consciousness; psychological quality refers to having certain confidence, courage and perseverance; cultural quality refers to having good behavior, cultural level and moral cultivation.

3.3.4 Engineer Achievement

The achievement motivation of engineers refers to the satisfactory results and excellent results that engineers can achieve in the enterprise activities, and can surpass the inner motivation of others. It is the drive of its own development, is the most powerful power support for engineers. Achievement motivation not only affects the competence of the engineers, but also affects the development of the enterprise. Achievement motivation is the internal driving force formed by oneself, which can stimulate the work enthusiasm and continuous explosive force of engineers. In the case of the insufficient external support of the enterprise or the insufficient performance assessment in the enterprise, the internal driving force of the engineers will drive the engineers to continue to work hard, so as to promote the cohesion and centripetal force of the whole team.

4. Conclusion

The competence of steam turbine factory engineers is crucial to the development and innovation of steam turbine enterprises. Therefore, the steam turbine factory should pay attention to the development of engineers' competence, and set a clear index system to assess engineers. First, it can improve the development of engineers in the enterprise, the second is to clarify the development goals of engineers, the third is to cultivate competence for the development of the enterprise.

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