

Discussion on the information security mechanism of manufacturing industry

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Abstract. For the modern intelligent manufacturing enterprises, the information security has a direct impact on the normal operation and long-term development of the enterprise. This is the problem which the enterprise should pay attention to it. How to construct information security and protect the core information resources of the industry. Information security in the manufacturing industry includes the existence of lower levels of information security technology, industry personnel security awareness, temporary of information security organization and other issues. This paper puts forward the Countermeasures in perfecting the security system, improve the information security level of the organization structure, perfect security mechanism etc.

Introduction

Internet + national strategy and the Chinese made 2025 by the Chinese government, which is to promote the transformation and upgrading in the manufacturing industry, accelerate the depth of integration in the new generation of information technology and manufacturing. In the process of practicing national strategy, it is inevitable that more in-depth integration of manufacturing industry and Internet, information, In the future, the manufacturing industry will become the terminal enterprise of internet and big data, data will be the largest energy for the Chinese manufacturing industry. Today, our information itself is facing a major problem of information security. With the continuous integration of information and manufacturing, information security has become a big risk to the manufacturing industry.

Information security problems in the manufacturing sector

Information security includes three major parts, namely, personnel, management and technology. At present, there are several problems in the information security of China's manufacturing industry:

Lack of awareness of information security. For the manufacturing industry, there is not enough understanding on information security, which is the specific performance in: the leader in the manufacturing industry is lack of the necessary understanding to the information security construction, they neglect the information security mechanism to protect the industry core information resources; Employees lack of information security awareness of information security, in the daily work, employees often leaked industry information in casual.

Lower levels of information security technology. This has two aspects: it is low to the information security management system structure and technical level; it is the low level to personnel management technology.

Limited information security protection. Consideration of factors such as performance and technology, import information security products widely used in many Chinese manufacturing enterprises, which makes high-risk state in the business of the company's confidential moments.

There is no limit to the Internet for employees. In the manufacturing enterprise office occasions, Employees carry personal mobile devices for office, they can use the undefended network to networking, sending and receiving e-mail, and use these mobile devices to copy the internal files.

Temporary of information security organization. Often, when information security incidents such as information leakage, virus attack, and system damage occur, manufacturing enterprises will

handle and solve information security incidents, it is temporarily from the Department of information technology and business departments to deploy staff. When the new information security requirements, the temporary project team is set up by the enterprise, which according to the new information security requirements to develop solutions and implement the plan. After the completion of the project, the temporary group will be dissolved, no one will continue to follow up and implementation the program of safe solution. Enterprise security is also lack of regular information security assessment.

Cause of information security in manufacturing industry

Imperfect laws and regulations. There is a lack of effective information security laws and regulations in China, which is reflected in: on the one hand, it is lack of the manufacturing industry, the construction of information security of mandatory laws and regulations; on the other hand, it is lack of perfect laws and regulations of information security and criminal.

Information security management ineffective in the manufacturing industry internal. Information security management includes system construction, system construction and personnel management. These three aspects of the work is not in place in the traditional industries are.

Employee information security awareness. Information safety consciousness is reflected in the following: enterprise management not fully aware of the importance of information security, and information security management work is not highly treated with enterprise production management stay, and it not as a part of the daily management work; Ordinary employees do not know to comply with and implement the information security system, and do not understand the impact of information security for themselves and businesses, they lack the necessary information security education and training, the occurrence of information security incidents intentionally or unintentionally.

Missing information security incident response mechanism. Information security incidents are not timely because there is no emergency response mechanism for the establishment of information security incidents. No information security incidents were graded response and disposal in the manufacturing enterprise, The consequences of the security problems are not divided into levels which based on the actual situation of the enterprise through forecasting, assessment and analysis of security incidents, the lack of emergency plan for different security incidents.

Information security technology system is imperfect. Information security is not perfect uniform information security technology system in physical security, running security and data security, This includes enterprises to use the software design defects or technical loopholes, antivirus software does not update; information system design is not based on risk assessment, business process description bugs or vulnerabilities, data access is not clear, the key data set without backup; physical security boundary is not clear, equipment or storage media lack safety measures.

Information security strategy for manufacturing industry

Improve the information security laws and regulations. To do the manufacturing industry information security, the most important is to improve the corresponding information security laws and regulations, from the legal level to face information security building for qualitative. Clear manufacturing industry information security obligations, the state passed laws forced manufacturing industry information security construction, forcing the leadership attaches great importance to the construction of information security, let leadership increased the thinking to the construction of information security and inclined in the enterprise global decision-making. At the same time, the national law makes a detailed qualitative and sentencing information security crime, strengthen the fight against the crime of information security, reducing the threat of information security through legal means.

Establish a sound organizational hierarchy of information security. Hierarchical structure is established in manufacturing enterprises, the hierarchical structure including implementation of multi-level, inter departmental information security decision-making committee, Ministry of

information security work, information security department, a net is built in the enterprise, covering all sectors of the enterprise. At the same time, the information security management system is established, the Committee clears the responsibilities and management processes, and guides the information security work of the enterprise, this is conducive to the implementation of information security measures and rapid response for information security incidents.

Strengthen the internal staff security management. From three aspects to strengthen industry internal information security management: the first is the construction of the enterprise staff information gradient, for enterprises in different sectors and different position, make different levels of information, in order to improve the staff functions and information asymmetries; the second is the construction of information management system, formulate a reasonable information management system for the type of enterprise, the type of enterprise information and its degree of confidentiality, strengthen the internal staff constraints; the third is to strengthen the enterprise staff training in information security awareness.

Autonomous information security infrastructure. Autonomous information security infrastructure construction from basic technology and basic hardware two aspects. In the technology base, manufacturing industry absorbing, and truly realize the localization of information security technology, from the root to exclude possible technical risk from foreign technology to traditional information security industry. In the basic hardware, the manufacturing industry can strengthen cooperation with domestic hardware manufacturers, and jointly develop the industry features of information security hardware, reduce the introduction and application of foreign hardware, and ultimately achieve the full realization of information security hardware localization.

Construction enterprise security system. Enterprise rational division of logical subnet, setting different security system on different logical subnets, strengthen network border control and security access control, to maintain the trust relationship in regional, constructing the enterprise network security system, realizing the goal of network security. In the division of enterprise network security area, the enterprise combines business attributes and network management to ensure the normal operation of the enterprise and the rationality of the division of the network security area. For the problem of rationality, to division enterprise network security domain which can comprehensive application of a variety of ways, give full play to the advantages of different ways, according to the enterprise network management and network business needs and target of enterprise network security domain division. Construction enterprise security system the purpose is to should be adapted to the network development and change, the enterprise can comprehensive consideration of various factors from staff, protection strategy, protection technology, and realize the dynamic protection based on intrusion detection. Dynamic protection based on intrusion detection mainly includes backup and recovery, risk analysis, emergency mechanism, intrusion detection and security protection, it is based on the intrusion detection, once the threat of invasion in the enterprise network is detected, system immediately launched the emergency mechanism, so as to ensure the safe operation of the enterprise network. The enterprise can improve the risk assessment and analysis ability and the active defense ability through the dynamic security strategy and the use of dynamic feedback mechanism. Through the layered security strategy, the enterprise constructs the high efficiency, comprehensive, comprehensive security system, to protect the network security the depth and depth. For the application layer, data layer, system layer, network layer and physical layer in the enterprise network, enterprises uses protection in the information protection, application system security, database security, operating system security, network protection, physical security links, according to the characteristics of different network systems, for to carry out safety protection. For example, in the network layer we use the resource control module and access control module to strengthen the access control of network nodes, we set the ID authorization and authentication system in the enterprise network application layer and data layer, to avoid the user's illegal operations and unauthorized operation.

Summary

It has been an important subject for the relevant enterprises and the Chinese government, how to construct the information security system of manufacturing industry. This paper analyzes the information security of manufacturing industry from the perspective of multi-dimension, multi-level and multi-angle, and explores the potential risks of enterprise information. This paper puts forward that the safety protection system should be constructed in the manufacturing industry, which should be combined with the characteristics of the enterprise and its own problems, and adopt the dynamic security strategy to improve the safety of the information in the manufacturing industry of China.

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