On strengthening the construction of laboratory safety management in Colleges and Universities

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Abstract

This paper discusses some problems existing in the laboratory safety management in Colleges and universities in China, and puts forward some suggestions to strengthen the laboratory safety management. It is stressed that strengthening laboratory safety education, improving the safety management system, and implementing the responsibility system is the basic guarantee for the students to provide a green and harmonious experimental environment.

Keywords

Laboratory, safety fireproof, strengthen education, duty fulfillment.

1. Introduction

Laboratory is an important place to carry out experimental teaching, professional skills training and training innovative talents in Colleges and universities, in the process of cultivating students' ability, practice ability, innovation ability and so on, it plays an important role in the process. The university laboratory has the characteristics of large quantity, wide distribution, many disciplines, strong professional, complex environment, relatively frequent personnel flow, etc[1].

Laboratory security is related to the school experiment teaching and scientific research can be carried out smoothly, the national property from the loss, the staff and students' personal safety, the safety and stability of colleges and universities as well as the whole society. In recent years, due to the improper operation of teachers and students in the experiment, equipment aging, fire is not in place and other reasons leading to the explosion, the important information caused by the fire was burned, casualties and other accidents occur, resulting in the loss cannot be estimated. To improve the investment benefit of instrument and equipment, in order to make it play its due role in experimental teaching and scientific research, we must pay attention to and strengthen the safety management of laboratory[2].

2. Security risks in University Laboratories

2.1 Fire safety system is not perfect

Laboratory safety and fire prevention is the most important in laboratory management personnel must be strictly in accordance with the regulations of safety fire prevention and control of the experimental operation of the work. However, due to the safety and fire prevention in the laboratory has not caused the high attention of the management departments at all levels of the school and laboratory, so that the safety and fire management regulations, the regulations and the regulations are not perfect[3].

2.2 Design planning is not reasonable, facilities are old

Some laboratories in the facilities and equipment of the security needs of the consideration is not comprehensive, there are loopholes in the design of the project. Such as: some will produce toxic gases in the laboratory without the installation of ventilation facilities; some mechanical operation

laboratory, lack of standby power supply facilities and other emergency protection system, leading to some important experimental equipment for the use of a sudden power failure and even scrap. In addition, many laboratories have built a long time, the channel is narrow, the use of equipment obsolete, line aging, fire rating is low, fire hazards. To guard against theft and arbitrary institution of protective doors and windows, safe passage by blocking phenomenon serious, some laboratories still use old resistance wire power furnace.

2.3 Laboratory lack of necessary fire equipment

According to the survey, there is a lack of essential fire equipment in the university laboratory. Some laboratories even equipped with certain fire equipment, because there is no special management and regular inspection, the failure of the fire equipment cannot be replaced in time, fire facilities and firefighting equipment, both in quantity and quality, cannot meet the requirements of safety fireproof. On the other hand, due to the different properties of the experiment, there are chemical laboratories for the use of flammable and explosive chemicals and gases; some chemical laboratories need to use flammable and explosive drugs, gas; some of the Microbial Laboratory in the presence of leakage risk, etc. The type of fire is different, so the method is different. Suitable for different characteristics of the fire facilities and equipment required by the laboratory is even more inadequate.

2.4 Safety consciousness faint, safety responsibility is not clear

The lack of safety awareness, safety consciousness, safety technology level, safety knowledge, safety quality education and training is a common problem faced by university laboratory safety management. For a long time, the teaching and research work in Colleges and universities have been regarded as the most important in the development of the school, but the safety work of the school laboratory has not been paid enough attention. The safety problems in the experimental teaching and scientific research activities in Colleges and universities are not as obvious as the production enterprises, so the safety work of some university laboratories is often neglected［4］.

At this stage, many university laboratories in the security work by the school office, security department, laboratory management office, the formation of multiple management, the system is relatively lax situation, , prone to the phenomenon of duplication of responsibilities between the management departments, or due to their non coordination and the emergence of management blind. Some laboratories in the colleges and departments, the main responsibility of the main body is not clear, the implementation of the security responsibility is not in place, not equipped with full-time security staff, the laboratory is also a lack of safety technical staff, not the implementation of safety management responsibilities.

3. Strengthen laboratory safety education

3.1 Establishment of laboratory safety education system

The laboratory has strong personnel mobility, should open a special laboratory safety education training courses. The course is not only a student's required course, the new to the laboratory of teachers, scientific research personnel are also required to undergo a rigorous safety education, training before you can guard. Schools should be based on the characteristics of the students in the grade level and subject, in various departments to open the depth of different safety and environmental protection courses, to further deepen laboratory safety, environmental protection education.

Each colleges and universities according to their own situation, the preparation of laboratory safety instructions, the contents should cover emergency treatment, fire, chemical experiments, radioactive experiments, biological experiments, electrical safety and other aspects of the content, to facilitate teachers and students to understand the knowledge of their own interests.

3.2 Increase safety propaganda work

At present, the laboratory safety awareness of college students is generally low. Due to not pay attention to laboratory safety, but there is a potential risk of laboratory safety. School leaders should

highly attach importance to this, making illustrations of laboratory safety guidelines, and carry out various forms of laboratory safety education propaganda and training work, such as emergency fire and special equipment safety drills, propaganda and popularization laboratory safety knowledge［5］. At the same time, the establishment of laboratory safety training and examination system, through the party organized by the school laboratory safety and environmental protection education examination can enter the laboratory study, work, so as to enhance the students and staff of the laboratory safety awareness of prevention.

3.3 Strengthen safety education and training

Make full use of all kinds of carriers and safety propaganda, and vigorously carry out safety education activities, to form a good atmosphere for know the safety of everyone, to jointly safeguard the safety of laboratory. Such as additional security courses, the students have a very systematic and comprehensive understanding of laboratory safety; according to different subjects, different professional characteristics, compiling specialized laboratory safety manual, such as biological safety manual, hazardous chemical safety manual, electric safety manual, radiation safety manual, etc., for the laboratory personnel to learn, reference. Conduct regular safety education seminars and training, hold fire fighting knowledge contest, hold fire drill, fire special sports competitions and other activities, staff and students have the basic ability to respond to emergencies, master the emergency method, preventive measures.

4. Improve the safety management system

The characteristics of the university laboratory determined that the school laboratory needs to be responsible for laboratory safety management by specialized and professional bodies, which is also decides that the management system is a top-down management system. This management is a system as a rule, with a certain mandatory and binding force.

4.1 Clear management responsibilities, the implementation of safety responsibility system

In the laboratory safety management work, we must first make the management system and the management function, a specialized agency responsible for laboratory safety management, under the direct leadership of the principal of the school's laboratory safety. Each unit leader should be responsible for the safety of the unit, the establishment of the Department of safety and safety leading group, the establishment of full-time safety management personnel, step by step to sign a safety responsibility, the implementation of the security responsibilities of staff at various levels.

4.2 Improve the emergency mechanism and improve the ability to deal with emergency

In order to deal with all kinds of sudden accidents, the emergency treatment may be possible, to develop scientific and perfect plan is the key to prevent the accident. Emergency plan including the organization mechanism, emergency measures, accident treatment procedures, etc... Carry out drills when necessary to ensure that once the accident occurs, can immediately take the correct and effective response method, in order to control the development of the situation at the fastest speed and the lowest cost, the accident loss is reduced to a minimum.

5. Concluding remarks

With the continuous development of higher education in China, the types and quantities of the laboratories in Colleges and universities is increasing［6］, a variety of laboratory safety risks have caused the high attention of the university itself and the society, the laboratory safety management system in the continuous development and sound, but still faces many challenges, for example, the fire safety of university laboratories is the key and difficult point of the campus fire safety, to do a good job in the laboratory of fire safety work, for the development of colleges and universities have very important significance.

Colleges and universities should be combined with the actual work of the unit safety, and earnestly strengthen publicity and education, the implementation of the target responsibility and work

measures, and effectively improve the laboratory safety management and responsibility, strive to improve the level of laboratory safety management and emergency management capabilities, so that the laboratory work more professional, safe and healthy.

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