



LABOR SAFETY IN THE MODERNIZATION PROCESS OF TEXTILE INDUSTRY ENTERPRISES

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Abstract

Risks that may occur during the installation and adjustment of technological equipment at the enterprises of the textile industry are determined. It is proposed to assess possible risks and accidents in the process of technical re-equipment of textile enterprises. A methodology has been developed to ensure the safe process of installation and commissioning of newly installed technological equipment.

Keywords: industrial risk, accident, injuries, commissioning, modernization, risk assessment.

Introduction

Modern technical equipment of the textile industry is related to the replacement of equipment and production technology. Ensuring labor safety in textile industry enterprises has certain characteristics [1], [2]. The retrofit process is related to commissioning. The causes of injuries during the repair of equipment are non-observance of labor protection requirements by employees (more than 75% of the total number of accidents) and repair of equipment in violation of technical documentation. Commissioning is accompanied by a high level of production risk, which requires distinguishing the commission as an independent stage of the technological process. Risk assessment is carried out in accordance with the guidelines for the assessment of occupational health risks for workers (R 2.2.-2003 instructions) and R 2.2.2006-05 "Hygienic criteria for the assessment and classification of working conditions". conditions of hazards and risks of the factors of the production environment, the severity and intensity of the labor process", as well as the category of evidence of risk according to the instructions R 2.2.-2003. The measure of risk is the class of working conditions, the measure of evidence of risk - its category: 1A (confirmed), 1B (suspicious) or 2 (suspicious). During the comprehensive testing of the equipment by the service personnel, the second category is assessed as such case check statistics show a high level of risk during startup.

It is mandatory to check and take into account all the accidents that occurred during the performance of the employees' duties. The same procedure applies to accidents involving employees when they perform other one-off legal actions on behalf of the





employer. The current regulatory documents do not specify the actions of the employee that are defined as other actions that are carried out in the interest of the employer. In the reconstruction of a textile enterprise, this work is not mandatory, but taking into account certain circumstances, employees who are related to other legal actions carried out in the interests of the employer may be involved.

The assessment of the legality of the employee's actions must be carried out for each specific case, whether the employee's actions are related to labor relations with the employer or are one-time legal actions on behalf of the employer.

Accidents at work are caused by:

- when directly performing labor duties at the workplace, moving around the territory of the enterprise, if it is related to the performance of labor duties, when performing other actions in other areas of the enterprise in the interest of the employer;
- when the employee is on a business trip, on the way to the permanent place of work and back, when he goes to the place of performance of other actions carried out in the interests of the employer and when he returns.

The specified reasons occur during the technical re-equipment of the enterprise, in particular, during the complex testing during the commissioning of the technological equipment. The development plan of textile complex enterprises envisages technical re-equipment and replacement of existing equipment with new ones. The final stage of installation and commissioning of the new, installed hardware is initiated. The commissioning package includes checking individual machines and production lines as a whole, adjusting equipment, testing installed equipment to confirm design parameters and modes. The employees of the base enterprise, which is undergoing technical re-equipment with the installation of new equipment, and the employees of the organization that supplies new equipment take part in the start-up and commissioning works.

During the commissioning of the technological equipment, the employees of the base enterprise perform activities that should be defined as one-time legal actions on behalf of the employer. In this case, for the employees of the base enterprise, the employer develops documents on labor protection based on the documents on labor protection in the performance of labor obligations at the permanent workplace. As a rule, the employees of the enterprise that supplied the equipment are on a business trip during the commissioning and work outside the territory of their enterprise in the territory of other organizations. The company that supplies equipment for its employees develops documents on labor protection, taking into account the specified factors. Thus, the employees of the base enterprise and the supplier of equipment participate in the production process during the commissioning. Each of the enterprises, as an





employer, develops labor protection documents for its employees. In enterprises engaged in commissioning of equipment, documents on labor protection are not interrelated, joint work of employees of different organizations at the same facility is not taken into account. This situation can cause accidents during startup, and accidents are difficult to investigate.

The author conducted an investigation on an accident that occurred during commissioning at a textile enterprise for the production of technical gauzes. The inspection was carried out in accordance with the provisions of current regulatory documents [3...6]. The labor safety of production workers operating technological equipment in textile enterprises is ensured by the increase in requirements for labor obligations when working with stationary equipment [7], [8]. However, this well-established system of organizing labor protection is not shared by enterprises at the time of start-up. The causes of injuries to employees during the start-up were identified: the absence of protective guards on the moving parts of the equipment. In the process of using the equipment, the project documents provide for the installation of guards on the moving parts of the equipment to prevent accidents. Safety guards were not installed by the workers at the time of commissioning, and the workers decided that the guards would interfere with troubleshooting the equipment. There were no requirements for the installation of a protective fence in the labor protection documents.

An analysis of the documents provided by the base enterprise and equipment supplier revealed that there is a risk to employees. Commissioning and adjustment work was carried out without mandatory safety requirements for management personnel. The enterprise did not have temporary instructions on labor protection for start-up, as well as technical documents defining the start-up procedure. The management of the base enterprise approached the participation of its employees in the start-up as if they were fulfilling their labor obligations by using labor protection documents when working with stationary equipment. In fact, the employee performed other one-time legal actions on behalf of the employer, but at the same time, labor protection documents were not developed taking into account the specific features of the start-up work at the textile enterprise, that is, the briefing was not held. before the start of work, temporary guidelines for the start-up period have not been developed. One of the reasons for this situation is the lack of regulatory documents on the organization of commissioning. Separate documents provide general startup instructions. Therefore, according to the Regulation [4], the defects identified during the commissioning process must be eliminated by the customer who has the appropriate qualifications of the employees. Specifying the requirements for the qualifications of workers, the





document does not provide instructions on the organization of labor protection, only the appropriate qualification ensures the appropriate level of training and certification in labor protection issues, as well as labor protection issues it can be assumed that it ensures the availability of certification. Factors determining labor safety in the performance of production processes [9].

When developing documents on labor protection during commissioning, it is necessary to analyze the technological process of installing the equipment, the scope of work on the commissioning of the equipment and the period of testing the equipment. The result of such an analysis should be the identification of specific risks for the period of commissioning, in contrast to the risks during the period of use of the equipment, which are taken into account in the documents on labor protection when working with stationary equipment. In addition, it should be noted that the risk should be determined by assessing the nature of possible damage for each type of technological equipment and each stage of operation. For example, electrical hazards with the possibility of electric shock, mechanical hazards with the possibility of injury to the worker, etc.

It should be determined that the main responsibility for the safety of the start-up rests with the base enterprise as the organizer of the production process. Based on the analysis of risks that may arise during the start-up, the base enterprise develops a set of measures to ensure labor protection during the start-up period, involving the equipment supplier. These activities are mandatory for the employees of the base enterprise and the organizations supplying the equipment involved in the commissioning.

Based on the results of the investigation of the accident that occurred during commissioning at a textile enterprise producing technical gauzes, the causes were determined, and proposals were made for the composition of labor protection measures during commissioning:

- development of temporary instructions on labor protection for implementation of commissioning;
- training of the employees of the supplier organization involved in the commissioning of the base enterprise and equipment according to the programs developed taking into account the commissioning characteristics;
- development of information support for start-up, development of schemes for installation of indicators of dangerous areas and warning signs;
- development of schemes for installation of personnel protection elements during commissioning;





- determination of individual protective measures against production factors that occur during commissioning.

Labor protection measures are developed during commissioning, and measures approved by the base enterprise after agreement with the equipment supplier are mandatory for employees of all organizations participating in commissioning. The training of the employees of the organization-supplier participating in the commissioning of the basic enterprise and equipment, which should be carried out according to the unified programs, is of particular importance. It is recommended to use modern teaching technologies [10], [11]. In the development of labor protection measures, the supplier of equipment provides complete technical information about technological equipment, the procedure for commissioning [12].

CONCLUSION:

1. Commissioning during the installation of technological equipment at a textile enterprise has its own characteristics that are not taken into account in the general regulatory documents on the organization of labor protection. There are no uniform approaches to the development of labor protection measures in the organization of commissioning, which is one of the reasons for the incorrect assessment of industrial risks and industrial injuries.
2. In the process of putting it into use, proposals were made on the composition of labor protection measures, including documentary, informational, technical, and staffing measures for commissioning.

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