

## CLASSIFICATION ANALYSIS OF THE PROFESSIONS OF POWER SUPPLY WORKERS

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### Annotation:

In this article provides information about the types of directions in the work activities of Electrical Workers and the types of damage that occur in them.

**Keywords:** Special clothing, power plants, electrical damage, strength, electric welders, electrical safety.

A classified analysis of the professions of electric workers made it possible to determine the following types of activities: - electricians serving power stations; - electrical wiring repair electricians; - electricians serving industrial equipment; - electric welders working with an electric arc. Workers in these professions may experience the following cases of electrical damage during the labor process. Electrical damage is the effect of electric current on the body that damages tissues, skin, muscles. Electrical injuries in the form of burns pose a special danger. An electric burn occurs at the junction of the human body with the conductive part of the electrical device or with an electric arc.

GOST 12.1.002-84. Under the term “electrical safety” in accordance with SSBT, a system and means of organizational and technical measures are understood to protect people from the harmful and dangerous effects of electricity, electric arc, electromagnetic field and static electricity. Hot dry air conditions further exacerbate the existing electrostatic hazard problem of synthetic materials with low permeability. According to statistics, 27% of electrostatic explosions were caused by static electricity, of which 40% resulted in death. The risk that threatens the life and health of workers in an accident associated with the movement of an electric discharge is as follows: - this accident occurs suddenly, it is almost impossible to predict it; in the event of an accident, a fire occurs, burning the worker's clothes and causing serious damage to the human body through skin burns caused by the penetration of a strong heat stream; - under the influence of high temperatures, synthetic parts of working equipment and clothing dissolve and adhere to human skin, and in addition lead to severe injuries; - the appearance of an electrical



discharge can lead to death in a short time as a result of the separation of a large amount of energy concentration and exposure to a person. This, an important negative factor in the field of electrical energy is the electrostatic hazard arising from the working environment, and protection from it determines the basic requirements for the characteristics and quality of their respective special clothing. Depending on the sign, size and place of accumulation of the electrostatic charge, the negative effect that the electric field created by it has on the human body can be dangerous to its health. As a result of the accumulated electrical charge flowing out of the electrified vest, electric current can pass through the human body, cause sparks, or cause injuries and damage caused by the contact of harmful substances in the environment. Prolonged exposure of the external electrostatic field to the human body can cause functional disorders of the nervous and cardiovascular systems. The complex of physiological effects of the electric field on a person and the resulting consequences are conditionally divided into four types (see Table 1). Data show that exposure to static electricity leads to multifaceted changes in the human body and threatens its health.

Table 1. Which occurs in a person under the influence of an electric field and an electric current physiological processes

Type of impact Biological	Causes and consequences of sources The biological electroplating, the source of which is outside the human body, disrupts the work of the central nervous system and the cardiovascular system, the normalization of which is based on internal electrical processes at a certain frequency.	Decreased brain function, disorders in the work of the heart Static charge (triboelectrization) generated in human skin is a violation of molecular structures and changes in the permeability of cell membranes, enzymatic activity and ion archibium of the blood, decreased liver and brain activity
Type of impact Biological	. Decreased brain function, disorders in the work of the heart Static charge (triboelectrization) generated in human skin is a violation of molecular structures and changes in the permeability of cell membranes	Thermal deterioration and burning of industrial gas mixtures are Burns of various degrees (including open fire), destruction of skin, muscle and bone tissue
hermic Chemical Secondary injuries	<b>Thermal deterioration and burning of industrial gas mixtures are Burns of various degrees (including open fire), destruction of skin, muscle and bone tissue</b>	Decreased brain function, disorders in the work of the heart Static charge (triboelectrization) generated in human skin
Thermic Chemical Secondary injuries	Under the influence of an external electric field, the directed movement of non-polar molecules.	Mechanical damage from nearby objects as a result of a fall.
Thermic Chemical Secondary injuries	<b>Mechanical damage from nearby objects as a result of a fall.</b>	Involuntary movement of body parts under the influence of electrical discharge or its consequences.



Approximate distribution of accidents from electric current in industry for the types of damage mentioned: 20% - local electrical damage; 25% - electric current stroke; 55% are mixed injuries, i.e. local electrical injuries and electric shock at the same time. Local electrical damage is a clear expression of a violation of body tissue, including bone tissue, caused by an electric current or electric arc. Often these are superficial injuries, that is, damage to the skin, sometimes other soft tissues, as well as ligaments and bones. As indicated, about 75% of cases of electric shock are observed with local electrical damage.

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