

**ACTION OF ELECTROMAGNETIC FIELDS OF DIFFERENT  
SPECTRAL RANGES OF FREQUENCIES GENERATED IN  
PRODUCTION ENVIRONMENT WHEN USING MODERN  
TECHNOLOGICAL PROCESSES IN MACHINE -  
BUILDING INDUSTRY ENTERPRISES**

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Introduction: The current problem that needs to be solved is the effect of adverse production factors on workers, which, when significant excesses during the execution of certain technological processes, can lead to occupational disease. Therefore, it is important to improve the regulatory framework and the development of preventive measures to protect the health of workers.

Relevance: The incidence of occupational diseases, high incidence rates with temporary disability among workers in the engineering industry, of course, depends on the presence of a complex of harmful factors that operate in the workplace when performing basic technological operations.

The emergence of pathological conditions is facilitated, first of all, by the low level of development of production technologies themselves. In this regard, particularly relevant are clinical and epidemiological studies of working conditions and health of workers in the engineering industry.

Objective: Improve the regulatory framework and develop a strategy for preventive measures to protect the health of workers in the engineering industry.

Materials and methods: Widespread use in industry, science and technology of technological processes using equipment that is the source of pulsed electromagnetic fields (IEMP), is accompanied by a constant increase in the number of workers and engineering staff who will be engaged in its operation and will be affected by the designated factor. Hygienic studies have revealed the main sources of magnetic fields.

Thus, during the operation of contact welding machines in the workplace of the electric welder are formed IMP, the sources of which were elements of the welding circuit (welding electrodes, current supply rails, consoles, etc.) and welding products.

In order to determine the duration of exposure to the body of working IMP, photomicrometric observations were made. The average duration of irradiation of electric welders during the change is 16.4-60.2% of working time and depends on the type and volume of welding work, as well as the type of equipment. The types of contact welding machines surveyed in most cases form IMP service personnel with a intensity of 0.7-30 kA / m with a pulse duration of 0.005-0.8 s and a repetition rate of 0.5-10 s. Clinical studies are based on the results of a clinical examination of workers working with contact welding equipment at mechanical engineering enterprises (324 persons in the main group are electric welders).

Analyzing the data, it was found that neurological complaints were made by 57% of the surveyed persons in the main group. The most numerous complaints of persons in the main group were mainly those characteristic of functional disorders of the nervous system. Thus, 40% of the surveyed noted general weakness, 25% headache mainly in the temporal-frontal areas. Increased irritability was noted by 35% of the surveyed, difficulty falling asleep with awakening at night and lack of feeling of rest after sleeping - 15%, and "darkening in the eyes" when changing the position of the body - 7%.

Objective examination of electric welders draws attention to the phenomenon of irritation in the motor analyzer, as well as the reduction of abdominal reflexes, which are closed not only in the spinal cord, but also in supra-segmental levels. On the part of the blood of the main group, there were various shifts in the number of leukocytes in the peripheral blood.

Conclusions: Conducted hygienic studies of working conditions of workers in production conditions showed that at workplaces when performing work using technological processes, where electromagnetic fields are generated in the work area, levels that exceed the maximum permissible sources according to the document "Statenorms and rules" are recorded when working with sources of electromagnetic fields "DSNiP 3.3.6-096-2002.

Despite the vague nature of the pathologists found in electric welders, in our opinion, their work should be classified as so-called "harmful" ones, as well as the question of introducing preventive and periodic examinations of working on contact welding machines. This substantiates the relevance of research aimed at identifying the possibility of preventing diseases of professional etiology and developing measures for their prevention.