

Factors Affecting the Stability of Operation of Industrial Facilities in Emergency Situations

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Annotation. Under the stability of the object is understood its ability to perform the specified functions not only in normal, but also in emergency situations, to prevent the occurrence of accidents and disasters at the facility. In particular, production facilities must produce products in the required volume, range, specified quality and cost, ensuring competitiveness in the market.

Keywords: processes, situations, environment, territory.

Introduction.

At present, a high level of man-made and natural hazards and the likelihood of emergencies (emergency situations) remain on the territory of the Republic of Belarus. To prevent the impact of the consequences of emergencies, such indicators as the sources of emergency situations and factors affecting the stability of the operation of an industrial facility in emergency situations are of great importance.

The source of an emergency is a dangerous natural phenomenon or process, a man-made incident, an infectious disease, as a result of which an emergency situation for people is created in a certain area.

Hazardous phenomena or processes do not always become a source of emergency situations. If there are no people in the territory where they occur, the biological world is not destroyed, then it is considered that emergency situations do not occur. In other words, an emergency can only be for a person.

There are primary and secondary sources of emergencies, while there may be several secondary sources.

An emergency situation (ES) is a situation that has developed in a given territory (at an object, at a person) as a result of the occurrence of a source of emergency situations that can cause or has caused human casualties, damage to human health and (or) the natural environment, significant material losses and violation of the living conditions of people.

Usually, an emergency is characterized by a certain number of emergency events and the degree of negative consequences. In the development of any type of emergency, four characteristic stages can be distinguished:

1. The accumulation of risk factors occurs at the very source of risk. The stage of emergencies can last days, months, years, decades and longer periods.

2. The initiation of an emergency is a push, a trigger. At this stage, risk factors reach a state where, for various reasons, it is no longer possible to contain their external manifestations.

3. The process of the occurrence of an emergency - there is a release of risk factors - energy or matter, and their impact on people, material objects and the natural environment begins. In the initial period of this stage, the duration of the process, its consequences are difficult to predict due to the complexity of the situation.

4. The attenuation stage chronologically covers the period from the overlap (limitation) of the hazard source, i.e. localization of the damaging factors of an emergency, until the complete elimination of its direct and indirect consequences.

Under the stability of the object is understood its ability to perform the specified functions not only in normal, but also in emergency situations, to prevent the occurrence of accidents and disasters at the facility. In particular, the production facilities must produce products in the required volume, range, specified quality and cost, ensuring competitiveness in the market.

The stable operation of an object is impossible without taking into account the stability of the object itself.

The stability of an object is understood as the ability of its engineering and technical complex (buildings, structures, equipment, engineering, energy, transport and other communications) to withstand the destructive effect of sources of emergency situations.

Various factors can affect the stability of the facility, although not every one of them can cause a source of emergency. Factors can be both internal and external.

Internal factors include:

- protection of production personnel from damage when exposed to damaging factors of sources of emergency situations;
- stability of the engineering and technical complex to the damaging factors of sources of emergency situations;
- planning and development of the territory of the object;
- reliability and performance of technological equipment, the degree of its deterioration;
- the size of the territory and the nature of the object;
- availability of own sources of energy supply;
- types of manufactured products;
- production safety system;
- the level of applied scientific and technical technology;
- the number and professional qualifications of workers and employees;
- salary, staff turnover;
- system of production management, marketing and their reliability;
- labor and production discipline;
- training of production personnel in emergency situations;
- possibility of operation of the object in emergency modes;
- sources of financing, tax system, penalties, access to external credit resources, lack or presence of investments;
- the legal system regulating the operation of the facility;
- international and domestic political situation;
- sources of emergencies specific to the area.

To prevent the occurrence of emergencies at industrial facilities, it is necessary to carefully consider all of the above factors, which will minimize, and in some cases completely avoid damage from emergencies of a different nature.

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