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MEASURES TO ENSURE THE SAFETY OF RESCUERS IN THE EVENT OF EMERGENCY SITUATIONS ASSOCIATED WITH THE SPREAD OF TOXIC SUBSTANCES

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Annotation
The article includes a complex of measures aimed at prevention of accidents at hazardous chemical sites. And also, ways of studying of a zone of chemical infections and safety rules for rescuers at elimination of accidents are given

Keywords: chemical hazardous object, chemical accident, prevention measures, infection zone, personal protective equipment, safety rule.

Калит сўзлар: кимёвий хавфли объект, кимёвий авария, олдини олиш чора-тадбирлари, зарарланган ҳудуд, шахсий муҳофаза воситалари, хавфсизлик қоидалари.

Ключевые слова: химически опасный объект, химическая авария, мероприятия по предупреждению, зона заражения, средства индивидуальной защиты, правила безопасности.

Аннотация
Мақолада кимёвий хавфли объектлардаги авариялярнинг олдини олиш чора-тадбирлар комплекси очиб берилган. Шунингдек, кимёвий зарарланган ҳудудни ўрганиш усуллари ҳамда авариялярни бартараф этиш жараёнида қурқарувчилар учун хавфсизлик қоидалари келтирилган.

Аннотация
В статье приведены комплексные мероприятия по предупреждению аварий на химически опасных объектах. А также, даны способы изучения зоны химических заражений и правила безопасности для спасателей при ликвидации аварий.

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Introduction

Chemical dangerous objects (ChDO) will bring great benefit to the economy of our country by supplying the necessary chemical compounds and chemical substances to our chemical industry. Such objects include not only large enterprises that produce toxic substances, but also other enterprises that use, store, transport poisonous substances (STAPS), which have a strong impact on themselves. SMEs can come up with emergency situations associated with the spread, spilling of toxic substances into the population.

There are thousands of accidents associated with the spread of STAPS per year on earth. As a result of a chemical accident in the Lithuanian city of Ionawa in 1989 year, about 7 thousand tons of liquid ammonia was poured into the plant area, resulting in a toxic liquid lake with a surface of 10 thousand m2 was formed. In addition, the natural gas pipeline was damaged, mixed with natural gas and strongly evaporating ammonia, resulting from a strong fire with a height of one meter. The fire was transferred to the ombor, where nitrofoska was stored, which caused another poisonous gas to decompose into the atmosphere as a result of its thermal decomposition. The length of the poisoning zone, which was formed as a result of the accident, was 30 km, but the poisoning of the population was not observed, since the poisoned air cloud spread to the uninhabited area. 982 people and 241 techniques were involved in the elimination of chemical accident. Also, in August 1991 year, as a result of the derailment of the train carrying 32 units of liquid chlorine-filled cisterns moving along the rail in Mexico, 300 tons of chlorine material was distributed into the atmosphere. As a result of this chemical accident, 500 people were poisoned to a different extent, of which 17 people were sacrificed on the spot. In order to protect the population from chemical poisoning, thousands of people from nearby communities were evacuated to a safe area[1].

When an accident occurs in the ChDO, it is observed that STAPS are thrown into the air and the distribution zone of toxic substances is enlarged. This in advance measures to prevent accidents in the protection of the population and territories from chemical accidents, while in the event of an accident risk comes the need to carry out as soon as possible.

A number of proposals have been developed by experts on the implementation of measures to ensure security in the ChDO, prevent possible accidents, improve measures [2]:

- The use of safe technologies, the advance of organizational, engineering-technical, special and other measures that ensure the safe operation of the object, the restriction

of the release of toxic substances (STAPS) that strongly affect the object in accidents beyond the sanitary protection zone;
- To create an environmental chemical poisoning control system and provide equipment;
- To create a system of instant notification of the occurrence of an accident on the object, first of all, local notification system in the population punks located around the object;
- Planning activities for the protection of the population, workers and servants, objects of the economy and the social environment;
- Creation of a reserve of neutralizing substances with a strong effect on the body of toxic substances;
- STAPS the minimum amount of storage required for the technology of the products, as well as the observance of technical safety regulations in the process of their loading and unloading;
- To increase the knowledge and skills of workers-servants and the population in terms of means and methods of protection from strongly influencing toxic substances, to teach them the rules of the use of personal protective equipment and shuttles;
- Improvement of automatic systems that control the chemical State in chemical hazardous objects;
- To develop the scientific basis of the method of risk assessment, taking into account the amount of strongly acting toxic substances used in chemically hazardous objects, zone release, internal characteristics of the enterprise, the level of protection of the population;
- Establishment of a data bank, where information is collected about the accidents that occur in a chemical hazardous object and their consequences.

Apart from these, the training of forces and means that eliminate chemical accidents, including the rules and requirements for their conduct in the conditions of chemical accidents, is one of the main tasks.

It is of great importance that the object is provided with general and personal protective equipment in the protection of workers-employees from chemical poisoning. There is a possibility of preventing accidents in advance forecasting the areas of chemical poisoning, identification of safe areas in which workers –employees are temporarily displaced, and development of plans to eliminate accidents are of great importance [4].

The process of eliminating chemical accidents depends on the knowledge, skills and skills of members of the Civil Protection Service and structures established in the

facility. Therefore, it is necessary to regularly train members of the structure of civil protection in chemical dangerous objects, constantly conduct training exercises. In order to search for victims of chemical accidents by rescue teams, it is desirable to carry out the following activities:

- To study all parts of the territory of poisoning, including open production areas, interior of damaged buildings, inter-house, axoli housing;
-mark the place where the victims lie, establish contact with them;
-To determine the condition of the victims;
-Determine the presence and danger of broken buildings, their impact on victims , fires and fumes;
-To identify the approximate methods and procedures for the rescue of the victims, to determine the possibility of providing them with first aid, as well as to take measures to eliminate or reduce the effects of other harmful OMES that may affect them.

In the elimination of chemical accidents, after the source of the spread of toxic substances is closed, the degassing of damaged areas, buildings and structures, equipment is an important task. the decision to neutralize strongly acting poisonous substances is taken mainly on the basis of intelligence data, after a thorough study of the affected area.

In the study of the affected area, mainly the following are identified [4]:

- The volume of contaminated area spilled or flowing toxic substances that have a strong impact;
- The procedure for the extraction of toxic substances that have a strong impact, other than the damaged vessel, to eliminate accidents in the production and communication system;
-Where rings are laid to stop the spilling of matter, fences are installed, ditches are dug for leakage;
-Methods and procedure for neutralization of toxic substances, territory and production buildings, which have a strong effect on spills;
-The necessary amount of individual composition, techniques, neutralizing substance and solutions;
- Place of accumulation of strength and Means;
-To determine the area in which neutralizing solutions are prepared;
- Ways to get to work and direction of movement;
- Meteosharoit, the place where the management pukts are placed, the place of personal protection and food distribution, etc.

When carrying out disinfection work, the territories are divided into two categories, namely "clean" undamaged and "dirty" source of accident, damaged territory. Therefore, accidents in the area of chemical damage think of experts on what factors the elimination process depends on.

The duration and work efficiency of eliminating chemical accidents depends not only on the qualifications and experience of the leading bodies, but also on the exact movement and qualification of the rescuers. That is why it is important for rescuers moving in such zones to know and follow the safety procedures. In the organization and conduct of emergency rescue work in the area of chemical accident in general, special attention should be paid mainly to the following [5]:

- Full provision of personal content with necessary personal protection;
- Provision of special equipment for the inspection, wearing and removal of personal protective equipment, taking into account Meteo conditions;
- at the end of work, special automobile equipment, protection equipment and, if necessary, special handling of personal content.

What requirements must be met to ensure the safety of rescuers, as well as members of all civil protection services and structures in order to carry out the above-mentioned activities on time and effectively?

Since rescuers are moving in a poisonous area, in order to maintain their health, all work carried out by them should be carried out with the help of the following:

-Neutralization of toxic substances that strongly affect the rescue works, buildings, territories and techniques in the clothes of filter, insulating gas and insulating protection;

- If the amount of oxygen in the air is less than the norm (18%), and in conditions of high (fire), of course, in insulating gases, the damage with is gas is extremely high;

-In industrial filter boxes, rubber boots and gloves, when rescue work is carried out in areas affected by the vapors of toxic substances, the type of which is known to have a strong effect;

-In personal protective equipment during the preparation of mixtures used for special processing.

When the Russian experience is studied, rescuers, who are not younger than 18 years of age with a medical certificate, who have undergone a special program, who have passed a test, and who have passed a certificate of specific conditions before the start of work, are placed in the process of eliminating a chemical accident in the country. Gas rescue work in the XXO is carried out only by an accident-rescue structure that has passed through atesstasy [7].

Every rescuer employed in the conditions of chemical poisoning should know the following:

-Physico - chemical and toxic properties of poisonous substances, which strongly influence;

-Rules for the use of personal protective equipment and strong exposure to toxic substances, tactical and technical characteristics;

-Methods and technologies, means of emergency rescue and other emergency work in the elimination of chemical accidents;

-Safety requirements in the event of chemical accidents and their consequences;

- The procedure for providing medical assistance to those who are poisoned by toxic substances that have a strong effect.

In the process of carrying out rescue work, rescuers must comply with the following safety rules [6]:

- Wear and take off personal protective equipment in a specially designated place;

- Not to walk arbitrarily in the area, of course to act as a group;

-To check the setting of personal protective equipment and provide timely information to the head of the group about its damage or strong damage;

- failure to capture various items and items damaged in a special untreated location;

- To leave the area only after warning the leader and partners of the group about the lack of Air Reserve, when the alarm starts from the autonomous breathing apparatus;

- Solving personal protective equipment with the permission of the head of the group after the completion of rescue and special operations;

-Do not sit in the affected area, do not lie down, do not smoke, do not eat, do not drink water and do not rest;

-Do not go directly to the gases that come out of the affected tank under high pressure;

-Do not approach the chemical vapors of different looks and colors, do not get into it.

In addition to these, the time allocation of the rescuers in the specified periods of time in a specially allocated place for rest, nutrition and smoking leads to an increase in working productivity.

In order to ensure the safety of rescuers in the process of eliminating chemical accidents, the following are proposed:

-To acquaint all members of the civil protection structure, to which chemical dangerous objects are established, with the types of strongly acting poisonous substances used on the object and their impact on the human body, with safety measures in case of their spread;

- Development and distribution of special notes for civil protection structures, rescue team members;

-testing the knowledge of rescue team members from time to time.
-Chemical dangerous objects to act correctly in emergency situations among the rescue teams, to hold competitions on safety rules, to award the winners.
Thus, it is of paramount importance that all members of the civil protection structure involved in the process of eliminating the consequences of an accident on the territory of chemical poisoning know and follow the safety rules. By increasing the efficiency of such measures as Citizen Protection Service, ensuring the safety of members of their structures, accurate and qualitative actions, closure of sources in the process of eliminating chemical accidents, degassing, in the case of chemically hazardous objects, a reduction in the area of poisoning and the time of elimination, the number of victims is achieved.

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