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Analysis of Fire Safety Rules in Electrical Networks and Elimination of its Consequences

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Abstract: *Fires and other incidents that destroy people's lives and property occur due to someone's carelessness and indifference. In fact, such situations can be prevented. To do this, we all need to be vigilant and aware. This article also discusses the analysis of fire safety rules in electrical networks, studying the causes and eliminating its consequences.*

Keywords: *Fire, safety, power supply, accidents, explosion, evacuation, regulatory documents.*

Introduction: Uzbekistan is internationally recognized as a country with a steadily developing economy, peace and tranquility, steadily growing social welfare of the population, and the rule of law. This is the result of the implementation of radical reforms aimed at the benefit of the people, under the leadership of President Shavkat Mirziyoyev. Contributing to the achievements of our country and increasing its prestige is one of the urgent tasks facing our compatriots. To do this, it is necessary not only to diligently fulfill the tasks set before each of us, but also to closely monitor the events happening around us, to always be alert and on guard, and to strictly follow the established laws.

In order to ensure fire safety in our republic, one of the fire-fighting measures is to proclaim each Wednesday as Fire Safety Day. In the autumn-winter season, our compatriots are required to strictly observe heating rules. Because improper use of electrical and gas appliances increases the risk of various unpleasant situations.

Fire is an uncontrolled, uncontrolled and economically harmful combustion. One of the main causes of fire is the improper use of electricity, i.e. failure to comply with electrical safety rules. Because a short circuit in faulty or non-standard electrical appliances will cause a large flame and this will cause a fire.

Considering the fact that a certain portion of fires occur in apartments, sector employees are stepping up explanatory and propaganda work among the population. Defects identified during preventive inspections of courtyards and apartment buildings are being eliminated. Officials and citizens are fined for violating fire safety rules. The fire safety status of preschool educational institutions, orphanages, schools, higher and secondary specialized educational institutions is studied in a control manner. Preventive measures are carried out with the participation of children, schoolchildren and students. In order to more widely promote the requirements of fire safety rules and teach children fire safety rules, quizzes and competitions are regularly held in all educational institutions by employees of local state fire services.

A fire is an uncontrolled combustion process that occurs outside of a specific source and causes significant material damage and human casualties.

Under the influence of various dangerous and harmful factors that arise during a fire, minerals can be destroyed and accidents can occur. The following can be considered dangerous and harmful factors of a fire: open flame, high temperature of the environment and objects left in the fire, various toxic gases and vapors formed during combustion, smoke, low oxygen concentration, collapsing parts of building structures and materials, explosion during a fire, shock wave during an explosion, materials and harmful substances flying as a result of the explosion, etc.

It is known that it is easier and more useful to prevent a fire than to extinguish it. Therefore, it is necessary for every specialist, every employee to know the causes of a fire at work, to fully comply with fire safety rules and take measures aimed at preventing a fire. In this regard, the fire safety of the facility is ensured by a fire protection system, a fire protection system, a fire protection system and organizational and technical measures.

The explosion protection standard for electrical equipment is divided into three levels:

- Explosion safety level of electrical equipment – explosion protection is ensured in the selected normal operating mode.
- The equipment contains the explosion-proof electrical equipment standard explosion protection during normal operation or in case of individual injuries probability is provided and is determined by the conditions of use. The possibility of injury to electrical equipment is specified in the standard in the form of electrical equipment protection.
- Standard for electrical equipment protected against extremely strong explosion, these devices are accepted as a standard type of additional means of protection against explosion.

It is considered that explosion-proof means provide solutions for explosion protection from a design point of view.

Highly reliable explosion-proof electrical equipment - the upper part of the housing prevents the formation of electricity or sparks and does not spark when operating at hazardous temperatures and during start-up.

Intrinsically safe electrical equipment - reduces voltage and current or reduces them to such a value that sparks occurring under normal operating conditions or sparks from malfunctions cannot ignite explosive and flammable mixtures.

Oil-free electrical equipment is placed under a layer of oil in the current-carrying part, especially in the contact part of automatic switches. The oil cools the parts of the current-carrying pipe, sparks. It is ventilated with high-pressure air or inert gas.

The fire safety system consists of a set of organizational measures and technical means aimed at eliminating the conditions for the occurrence of a fire. In carrying out these activities, the maximum

possible use of non-flammable and hardly flammable materials, complete mechanization and automation of technological processes, separation of premises with fire-hazardous devices from others with non-flammable materials or install them outside whenever possible, using sealed containers and equipment for flammable substances, maintaining the amount of flammable gases, steam and dust in the air of the building at an acceptable level, using heating equipment correctly and other similar measures.

Do not allow the creation of a source of fire in a fire hazardous environment, use machines, mechanisms and equipment in production that do not create a source of fire, fully observing the rules and modes of use of machines and mechanisms, It is carried out by such measures as the use of protective devices against static charges and lightning, the elimination of conditions for spontaneous combustion of materials and substances under the influence of heat, chemical and microbiological methods, the full implementation of prescribed fire safety measures, and periodic cleaning of the building boundaries.

Fire protection system - includes measures such as the use of fire extinguishing equipment and techniques, personal and collective protective equipment that protects against fire hazards, automatic fire alarm and fire extinguishing system devices, treatment of structures and materials of the facility with fire-retardant paints, smoke protection systems, evacuation routes, and the correct selection of the fire resistance level of the building.

In the fire prevention system, it is carried out by such measures as the installation of fire barriers, the use of equipment and devices for switching off and on in the event of an emergency in devices and structures, as well as fire prevention means, means of preventing the spill of flammable liquids during a fire.

Summary. Fire safety in electrical networks is important for the protection of human life, property and the environment. Regular maintenance, the use of quality materials and the use of modern protective equipment are necessary to reduce the risk of fire in electrical networks. Fires caused by faulty electrical networks and improper use can cause huge losses. Therefore, compliance with safety standards, proper load distribution and installation of fire alarms ensure reliable operation of electrical systems. National and international rules and standards for the prevention of electrical fires must be followed. Taking fire safety measures will improve the safety of electrical networks and prevent fires.

Foydalanilgan adabiyotlar.

1. 2020-yil 26-avgustdagi 515-sonli “O‘zbekiston Respublikasi Favqulodda vaziyatlarning oldini olish va bunday vaziyatlarda harakat qilish davlat tizimini yanada takomillashtirish to‘g‘risida”gi qarori.
2. Xodjakulov M.N. Aholini favqulodda vaziyatlarda harakat qilishga va fuqaro muhofazasi sohasida tayyorlash. Hayot nashri-2020. Andijon. 2021.
3. Xodjakulov M.N., Qobulova N.J. Qutqaruv ishlari. Darslik. Andijon-2024.
4. Xodjakulov M.N. Favqulodda vaziyatlarda xavfsizlik. Darslik. Andijon-2024.
5. Hayot faoliyati xavfsizligi. M.X.Tojiyev. I.Nigmatov, Toshkent 2012-yil.
6. “Mehnat muhofazasi va xavfsizlik texnikasi” – O‘quv qo‘llanma. Mualliflar: A.X. Sodiqov, B.B. Ergashev. – Toshkent: “Fan va texnologiya”, 2022.