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SOME ISSUES OF CAUSE-CONSEQUENCY RESEARCH IN THE PERFORMANCE OF MULTIDISCIPLINARY RESEARCHES IN THE FIELD OF LABOR SAFETY, FORENSIC ENGINEERING AND ELECTRICAL EXAMINATIONS

It is impossible to establish the truth in criminal proceedings while considering cases related to related to non-compliance with the requirements of the Law of Ukraine with the requirements of the Law of Ukraine «On Labor Protection» without performing forensic examinations regarding the investigation of causal relations and establishing circumstances preceding the accident. As a rule, the research subject in this case is materialized carriers of information about a harmful event that had taken place. Therefore, from a technical point of view establishing the presence of circumstances that preceded and led to adverse effects and their direct connection with the occurrence of these consequences is one of the issues of Forensic Engineering.

The causation assessment is based on a theoretical research of circumstances of an accident event based on materials provided for research. The use of philosophical and logic means is the basis of forensic research on the causation determination and the establishment of objective truth in legal practice.

The article reveals contemporary views on the problems of causal relationship between socially dangerous acts and the socially dangerous consequences of these acts in combination with expert practice while research related to electrical injury.

The completeness and objectivity of the expert's opinion on the results of the studies of accidents related to electrical injury depends on the availability of expertise in the field of electrical engineering and requires the mandatory involvement of a forensic expert in relevant field.

Keywords: comprehensive forensic engineering/technical expertise in the field of labor protection and electrical engineering expertise, accidents involving electrical intrusion, cause-effect relations, modern practice analysis.

Formulation of Research Problem. According to information in sources, electrical traumatism in its consequences in comparison with other types of traumatism is the most dangerous and more often than other traumas leads to serious and fatal cases.

According to statistics from KhRIFE experts, electrical injuries account for less than 10% of the total number of accidents, but they are more than 50% of the deaths and serious injuries of people, as electric shock strikes when a person finds himself «connected» to the circuit of the current. In this case, the current damages the tissue throughout its passage through the human body.

In comparison with other types of traumatism, electro traumatism is characterized by the following features:

- person is not able to remotely, without special devices, to determine the presence of voltage, and therefore the action of the current, as a rule, is sudden, and the protective reaction of the body manifests only after being energized;

- current flowing through the human body affects the tissues and organs not only in the places of contact with the current-carrying parts and in the path of flow, but also reflexively, as an extremely strong irritant, affects the whole organism, which can lead to disruption of the functioning of vital systems organism – nervous, cardiovascular systems, breathing, etc.;

- Electro-injuries are possible without human contact to the conductive parts – due to the formation of an electric arc at the breakdown of the air gap between the conductive parts, or between the conductive parts and the person or the earth.

As a rule, the highest percentage of accidents related to electro-traumatism occurs when electrical personnel perform electrical installation work.

Recently the importance of forensic electrical expertise in the system of forensic research has increased. This process is predetermined primarily by the needs of the judiciary and is gaining ground in expanding the practice of using special electrical engineering knowledge in solving problems of economic, civil, criminal and administrative justice.

The subject of electrical expertise is the actual data and circumstances of an event related to the occurrence, development and consequences of abnormal modes in electrical installations or their components, the state of electrical equipment in terms of its compliance with regulatory requirements, etc. The research is conducted based on special knowledge in the relevant areas of electrical engineering.

Forensic Electrotechnical Examination Objects are material and materialized sources of information that are examined by electrical engineers to establish factual data about the circumstances of an event related to the subject of electrotechnical examination. The main object of expertise is the electrical installation of the electricity consumer and its elements; electrical equipment, electrical appliances and their fragments,

electrical wiring, cables, electrical protection devices (fuses, circuit breakers), electrical switches, etc.

Materialized objects of electrotechnical examination include information carriers, which contain factual data about a specific electrotechnical examination – relevant documents of the case file or criminal proceedings and documents provided in due course by the customer of the examination.

The tasks of electrotechnical examination are aimed at establishing the actual data and circumstances of the event pertaining to its subject matter, by examining its objects by appropriate methods. They are divided into diagnostic, classification and situational. The diagnostic task is to determine the state of the electrical object; identifying changes that have occurred because of an event, identifying the causes and conditions of these changes based on an analysis of the individual properties and condition of interacting objects to determine the mechanism of the event as a whole or its individual fragments or to identify specific circumstances of the event. In the process of solving the classification problem, an expert electrician determines the belonging of material (materialized) objects of study in the form of any material formation with electrical elements or its display (photographs, description) to a specific standard or special group. The classification task in electrical engineering expertise is to determine, with the help of specialized knowledge, the belonging of the object under study to a class of electrical products. Situational tasks are to clarify the technical phenomena and to establish the circumstances associated with the property of the phenomenon. These tasks include: exploring the possibility of a certain phenomenon and the existence of a particular circumstance; identification of circumstances in which specific phenomena occurred; possibility of carrying out certain actions; determining the method and causes of specific damage; establishment of mechanism of certain actions and formation of signs of phenomena (traces) of detected circumstances that led to abnormal modes in electrical equipment, and phenomena that accompanied these modes.

Research on objective cause and effect relationships between the circumstances that preceded the accident in the form of an accident or emergency in the electrical installation, and this event in modern expert practice is one of the important and relevant tasks of engineering expertise. Criminal and other types of law do not consider causation at all, but causation between socially dangerous, unlawful acts (inaction) of a person and socially dangerous consequences.

Recognized cause is only such a phenomenon that is not accidental, but objective, naturally causes the occurrence of the consequence: the action of the subject caused a socially dangerous consequence, the action of the subject precedes a socially dangerous consequence, the action of the subject contains the inevitability or real possibility of occurrence publicly a dangerous consequence, a socially dangerous consequence naturally arises in the specific conditions of a place, time and circumstance precisely

by this act of the subject, and not by the actions of other persons or other external forces and circumstances, as well as the onset of dangerous consequences following actions (inaction) of the subject.

Analysis of recent research and publications. Causation issues are traditionally and unreasonably considered one of the most difficult in criminal law. Despite the abundance of causal theories (often mutually exclusive) and the large number of scientific publications, a clear, understandable and well-settled solution to the problem of causality in criminal law has not yet been achieved. The original statement by A. A. Piontkovsky that there is a whole «parliament of thought»¹, around legal science, retains its relevance for modern criminal law doctrine, and not only for Ukraine. In doing so, the causal link between action and socially dangerous consequences, as a mandatory feature of the objective side of crimes with material composition, plays an essential role in the process of criminal qualification. In the Criminal Code of Ukraine there is no normative definition of the concept of causation, so the resolution of this issue is at the discretion of the court in the consideration of specific criminal cases and proceedings. Criminal science usually examines the causal link between a socially dangerous act and a socially dangerous consequence from a philosophical standpoint. The reason in philosophy is a kind of determination, a phenomenon that naturally (genetically), with an internal need, gives rise to (causes) another phenomenon – a consequence. Being objectively, outside our consciousness, causation can be known to man. The causal relationship which belongs to the objective world cannot be equated with the judgment of even a very astute observer. The question of the methodological foundations of the criminal law doctrine of causation is one of the discussions.

Causation problem in criminal law has developed in dissertation research: in Ukraine, causation is directly devoted to the dissertations of such scientists as S. Bagirov, O. L. Timchuk, N. M. Yarmysh.

Scientist M. S. Tagantsev argued that criminal law deals not with a philosophical (abstract), but with a practical understanding of causality based on the ideas of life². The scientist himself in solving the issues of causality called for a distinction between reason and reason, without giving, however, a clear answer as to determine the superiority or insignificance of the original human action in comparison with the incoming forces, which interfere with the development of events and contribute to the onset of the result. A. L. Tymchuk emphasizes that in the context of methodological pluralism, criminal science can and should use its own (specific) understanding of causation, which considers the needs of

¹ Visnyk Asotsiatsii kryminalnoho prava Ukrainy, 2017, № 1(8) http://nauka.nlu.edu.ua/wp-content/uploads/2017/07/05_Bagirov.pdf. (data zvernennia 22.07.2019) [in Ukrainian].

² Ibidem.

law enforcement¹. The opposite methodological position is consistently observed by N. M. Yarmysh, who believes that the question of causality in criminal law is not separate from the general scientific, philosophical problem of cause and effect. Only by finding out the general patterns can one extrapolate them to specific areas².

The position of A. A. Muzyka and S. R. Bagirov, which recognize the notion of causal connection in criminal law not as associated but consolidated, that is such that, based on the philosophical understanding of causality, at the same time has branch peculiarities and is filled with specific criminal and legal content.

In the theory of criminal law, different opinions (views) have been expressed about causation. M. I. Panov³, P. L. Fries, O. O. Kvasha [7, p. 90-91] and others identify the following three basic theoretical directions for the study of causal relations, each of which, based on different philosophical concepts, considers with greater or less completeness and scientific validity the problem of causality in criminal law:

- theory of prerequisite: the reason should be considered any factor that in one way or another influenced the occurrence of the consequence;

- theory of adequate cause: recognized as such only «standard» reasons, and in cases where the cause is something unusual, it can not be considered as the cause of the phenomenon;

- theory of necessary causality recognizes as a cause only a phenomenon that is not accidental, but objectively, naturally causes the occurrence of the consequence.

The researcher on theory and practice of causation in criminal law, Professor V. B. Malinin, has a much larger system of theoretical views on the problem of causation⁴.

¹ Visnyk Asotsiatsii kryminalnoho prava Ukrainy, 2017, № 1(8) http://nauka.nlu.edu.ua/wp-content/uploads/2017/07/05_Bagirov.pdfA.A. (data zvernennia 22.07.2019) [in Ukrainian].

² Ibidem.

³ *Panov M.I. Obiektivna storona zlochynu // Kryminalne pravo Ukrainy [Criminal law of Ukraine]. Zahalna chastyna: Pidruch. dlia studentiv yuryd. spets. vyshch. zakladiv osvity / M. I. Bazhanov, Yu. V. Baulin, V. i. Borysov [ta in.]; za red. M. I. Bazhanova, V. V. Stashysa, V.ia. Tatsiia. Kyiv; Kharkiv : Yurinkom inter–Pravo, 2001. S. 121; Fris P. L. Kryminalne pravo Ukrainy [The criminal law of Ukraine]. Zahalna chastyna: Pidruch. dlia studentiv vyshch. navch. zakladiv. 2-he vyd., pererob. i dop. Kyiv : Atika, 2009. S. 149; Mala entsyklopediia kryminalnoho prava [The Small Encyclopedia of Criminal Law] / Yu. L. Bashytskyi, M. O. Kostenko, Z. A. Trostiuk, O. O. Kvasha [ta in.]; za zah. red. Yu. L. Bashytskoho ta Z. L. Trostiuk. Kyiv : Kondor, 2012. S. 90–91 [in Ukrainian].*

⁴ *Malinin V. B. Obektivnaja storona prestuplenija [The objective side of the crime]. Jenciklopedija ugovnogo prava [v 35 t.] / Pod red. V. B. Malinina. T. 4 : Sostav prestuplenija. Sankt-Peterburg : izdanie prof. Malinina, 2005. S. 316–356 [in Russian].*

In practice, it is common for experts to be asked by their criminal nature the question of whether a violator of a rule is causally related to the consequences that have arisen. Meanwhile, determining whether there is a causal link between a person's violation of the relevant rules and the resulting consequences is the responsibility of the investigator, prosecutor, court. However, according to E. V. Fesenko, it is time to grow the role of expert studies in establishing causation and, consequently, to revise the common law principle that causation should be made first and foremost by a lawyer¹.

Please note that causation is a process that takes place over time. A person's socially dangerous behavior can only be recognized as a cause of a socially dangerous consequence if he or she has preceded his / her occurrence in the first place: an act must be committed first, and subsequently a consequence. It is important, however, that the action gives rise to a consequence, since the external sequence of events does not always indicate that there is a causal link. In a criminal sense, causation means that a socially dangerous consequence is caused by a certain criminal act, not by the behavior of third parties (including the victim) or any other external forces (interference with the forces of nature, technical processes, etc.). In other words, if it had not been for the act, there would have been no socially dangerous consequence.

The general initial rule of procedure for determining the cause that underlies any theory of causation. Such determinants as cause and conditions must be distinguished. The latter, unlike the cause, although they play a role in the development of causation (may accelerate it or, on the contrary, slow down), are not in themselves capable of producing specific consequences in a setting. Instead, the cause is a decisive and determining factor in the consequences.

It should be noted that according to the source, the problem of determining causation lies not only in its theoretical aspect, but also in practical terms. The role of expert research is increasing when addressing specific issues regarding the presence (absence) of such a link between a person's behavior and the consequence (especially in complex cases of complex action alongside the behavior of a person of other forces). After all, the expert as a specialist in the field of special knowledge will most accurately solve the question of the existence and development of certain objective laws. The above gives grounds for raising the question of the revision of the common law postulate that causation must be made, first and foremost, by lawyer.

¹ Fesenko Ye. V. Osoblyvosti naslidkiv ta prychynnoho zviazku u zlochynakh z materialnym skladom [Features of consequences and causation in crimes with material composition]. Chasopys Akademii advokatury Ukrainy. 2010. № 6 URL: <http://e-pub.aau.edu.ua/index.php/chasopys/article/view/589/609> (data dostupu 12.02.2019) [in Ukrainian].

The conclusion about the presence (absence) of a crime character is really the prerogative of a lawyer. But a practical justification for this conclusion without special knowledge is impossible. Therefore, decisiveness in a case should nevertheless be given to the expert's opinion, which assesses causation directly from a technical point of view, and the legal assessment can be performed by a court of its own motion.

The **Article Purpose**. Based on the analysis of the expert practice of KhRIFE specialists, to identify the most characteristic and widespread non-compliance with the regulatory and technical requirements during the operation of power plants and to determine the existence of their causal connection with the occurrence of an accident and electrostatic injury. When investigating the causes of accidents related to the operation of electrical installations, determine the impact of objective and subjective factors on the existence of a causal link between the actions (inaction) of officials and contractors and the consequences of an accident.

Main content presentation. The highest percentage of accidents related to electro-traumatism occurs, as a rule, when electrical personnel perform work in electrical installations.

According to RSOEI 40.1-1.01-97: *Rules for the Safe Operation of Electrical Installations* electrical installations are a collection of machines, apparatus, lines and auxiliaries (together with structures and premises in which they are installed) intended for production, transformation, transformation, transmission, distribution of electrical energy and its transformation into another type of energy.

Work in existing electrical installations refers to high-risk work and requires increased requirements for employees who are permitted to perform such work. With such employees it is necessary to carry out preliminary training and check knowledge of safety requirements in specialized educational institutions licensed to conduct such training, to prepare dress-tolerance and to conduct labor safety instructions according to the developed instructions of the enterprise and to determine the normative and technical requirements of the organization of these work, job preparation and admission of employees to work with constant supervision over their performance by responsible persons.

The analysis of forensic practice of KhRIFE specialists allows to identify objective (technical) and subjective (organizational) factors among the causes of accidents related to the operation of electrical installations.

Objective factors include the creation of safe production processes and the prevention of dangerous emergencies using ergonomic and comfortable production facilities, the rational placement of production equipment, the use of appropriate means of protection.

Subjective (organizational) factors are the professional selection, training of employees and testing of their knowledge and skills of safe work, the inclusion of safety requirements in the regulatory, design, technological documentation and compliance with these requirements, and ensuring the functioning of the safety management system by creating appropriate services and the appointment of officials to address specific occupational safety issues. Establishment by the employer of an effective control over the operation of a safety management system at the enterprise prevents accidents.

It should be noted that according to sources¹, the occurrence of the adverse event of an accident usually precedes the occurrence of a dangerous circumstance, which is a prerequisite for the occurrence of such undesirable consequences. As a rule, such a circumstance is non-compliance with regulatory requirements. Failure of the equipment to comply with the rules of the arrangement, non-compliance with the requirements of the rules of safe and technical operation of the equipment, lack of technological processes or performance contrary to those designed, admission to the work of untrained personnel, non-use of personal or collective protection, and the like create the conditions under which the consequences of our can happen with a high degree of probability.

The reasons which led to the creation of a dangerous (emergency) situation are the primary reasons in which case an adverse event would not have taken place. The immediate cause is only valid if there is a major cause. A characteristic feature of the immediate cause is that it initiates the effectiveness of all causal communication, ensures its irreversibility until the occurrence of undesirable (harmful) consequences.

The actions of specific functional persons, from a technical point of view, have a causal connection with an undesirable event in the case when such actions are inappropriate (contrary to regulatory requirements), have led to such arrangement of equipment, operating conditions, to perform works contrary to the developed technological processes, admission to the work of untrained personnel and the like, which created the conditions under which the occurrence of an undesirable event could occur with a high degree of probability and occurred.

¹ Metodyka ekspertnoho doslidzhennia prychynnykh zviazkiv [Methodology of expert investigation of causation], reiestratsiinyi kod 10.5.01. URL: rmpse.minjust.gov.ua/page/9 — (data zvernennia 04.02.2019); inzhenerno tekhnichna v haluzi bezpeky zhyttiediialnosti, elektrotekhnichna, pozhezhno-tekhnichna, avto-tekhnichna, ekspertyza. Metodyka doslidzhennia prychynnykh zviazkiv pry provedenni inzhenerno-tekhnichnykh ekspertyz, v yakykh vyrishuiutsia sytuatsiini zavdannia [Engineering technical in the field of life safety, electrical, fire-technical, auto-technical, expertise. A technique for investigating causal relationships in conducting engineering and technical assessments that solve situational problems]. Za zah. red.: Horbenka V. O. Kyiv, 2017 [in Ukrainian].

It should be noted that in our opinion, undesirable adverse effects have a causal relationship with the actions of specific persons only if their actual actions are inappropriate (contrary to the requirements of regulations, company regulations or other regulatory requirements), and these actions give rise to circumstances in which the occurrence of undesirable adverse effects could occur with a high degree of probability and such a dangerous event occurred. Thus, when performing work in existing electrical installations, there are often accidents due to failure to comply with the requirements of regulatory and technical acts on safety and rules of safe operation of electrical installations, inconsistency of organizational measures in the preparation for the execution of work and drawing up an outfit, ignoring the proper preparation of the workplace, and the misuse of personal and collective protection.

For the sake of clarity, here are some examples from expert practice. So, while performing works on checking the condition and adjusting the contact suspension between the supports of the section of the contact network at one of the Southern Railway races in Poltava region due to the failure to comply with the order of work and the uncoordinated actions of the members of the team of electricians of the contact network while being on the insulating platform of the motor car 1420, reached into the console with his hand and was shocked. On the territory of the power plant in Lviv region because of non-compliance by the officials with the requirements of normative-technical acts on labor protection regarding the admission of crew members to work in the existing electrical installation without preparation of the workplace during the work on detachment of loops, extension; contractors were electrocuted.

During the execution of works at one of the machine-building factories of Sumy region the director of the enterprise personally involved a foreign person who performed work of high risk with non-compliance with the requirements of the Rules¹ without carrying out any organizational measures and preparation of the workplace. Because of such actions, this person was electrocuted incompatible with life.

There are common accidents related to performing work on existing electrical installations and cable lines without having to put on an outfit and carry out on-site targeted instructional work.

Typical example is the accident that occurred with an electrician from the operation of distribution networks during the repair works of the transmission line at the substation of PJSC «Lvivoblenergo». Contrary to the requirements of the Regulations, the relevant officials of REM and the

¹ NPAOP 40.1–1.01–97 «Pravyla bezpechnoi ekspluatatsii elektroustanovok» [Rules for safe operation of electrical installations]. URL: <https://zakon.rada.gov.ua/go/z0011-98> (data zvernennia 12.02.2019) [in Ukrainian].

master of the production site did not prepare the workplace, ignored the instruction and the procedure for admission to high-risk works and targeted briefing of the crew members. Because of such actions, the electrician from the operation of the distribution networks rose with the help of the wires to the electrically resisting electrode and died on the spot from electric shock. In this production situation, both the master of the production site and the chief engineer of REM PJSC «Lvivoblenergo» had the technical opportunity to avoid the occurrence of the harmful consequences of an accident, by unconditionally observing the above requirements of the normative documents on electrical safety and labor protection.

It should be noted that when performing work on existing electrical installations, accidents often occur due to the non-use and improper use of personal and collective protection.

For example, on the territory of the transformer substation in Dnipropetrovsk region, the contractor staff performed work on the installation of AVR panels. The chief engineer of the contracting entity did not comply with the requirements of the Rules, since being a contractor for electrical contractors to perform the work, and in accordance with the regulatory and technical requirements, he had to enclose nearby live parts, which are near the voltage, and to which a casual touch.

The contractor electrician, for his part, failed to comply with the requirements of the Rules, since he did not use dielectric shoes and an insulating stand (dielectric rug) when working near current-carrying parts of electrical installations up to 1000 V, and did not use an instrument with insulating arms when working near current-carrying parts, and did not use dielectric gloves. Accidental contact with live conductive parts that were energized by a contractor electromechanical engineer killed him.

It should be noted that according to O. O. Dudorov in the above production situations directly officials (master of the production site, chief energy engineer, chief engineer of the enterprise), who organized to perform high-risk work in electrical installations, had the technical ability to avoid the occurrence of adverse consequences of an accident, by unconditional compliance with the requirements of the normative documents on electrical safety and labor protection, and their actions (inactivity) from a technical point of view, are causally connected the onset of the investigated accidents.

As a rule, when performing engineering and technical examinations on occupational safety and health and establishing the causes of accidents due to electric shock – it is necessary to establish the mechanism of injury, ie to find out what factor from a potentially dangerous became a dangerous factor in a specific accident. In the presence of electrical safety devices, it

is impossible to establish such circumstances without analyzing the circuit solutions, identifying the real parameters of the protective devices, evaluating the actions of the electrical personnel, etc. Also, when carrying out fire-technical examinations, the subject of which are the actual data and circumstances of criminal proceedings concerning a fire at an electrified object, after the establishment of a fire center and the identification of electrical equipment elements in it, it is necessary to check the expert versions of the involvement of heat manifestations of electricity in the fire. These and other situations have led to the expansion of the scope of research in occupational health expertise in addressing electrical safety issues and the limits of fire engineering research to sources of ignition of electrical nature and the mandatory involvement of electrical engineering professionals.

In view of the above, it should be noted that accidents at the production of accidents related to electrical traumatism, testifies first of all to the unsatisfactory functioning of the system of management of occupational safety at the enterprise, low level of labor and industrial discipline and obliges to take appropriate measures by officials, requires Art. 13 of the Law of Ukraine: *On Labor Protection*¹.

Conclusions. In our opinion, the following provisions should be considered when analyzing and establishing a causal link between non-compliance with safety and inactivity requirements and accident occurrence:

1. Causal link is an objectively existing link between a cause of action (inaction) for non-compliance with regulatory requirements) and a consequence (accident) that exists objectively as a fact of reality. The fact of an accident is always regarded as the result of the causal phenomenon that caused it, preceded it and inevitably led to it. Therefore, the link between cause and effect must be considered objective, real and subject to examination during judicial review to establish the other components of the subjective side of the actions (omissions) of the person(s) concerned.

2. When establishing a causal relationship, it should be borne in mind that in nature and society, all phenomena are interdependent, are in close interaction. Their many factors influence each other and are constantly changing. Therefore, to establish a specific definite relationship between cause and effect, it is necessary to use tools of philosophy and logic, such as abstraction, analysis, synthesis, that is, to artificially (ostensibly) isolate two phenomena (cause and effect) from the influence of other factors that one way or another interact with the consequences.

¹ Pro okhoronu pratsi [On labor protection]: Zakon Ukrainy. URL: <https://zakon.rada.gov.ua/go/2694-12> (data zvernennia 20.02.2019) [in Ukrainian].

Only with this approach can one investigate whether an action is the cause of the consequence.

3. Causal connection occurs only when the act is a necessary condition, without which an accident is impossible. First, it follows from this provision that the primary condition for having a causal link is a time factor, that is, the cause must always precede the time of the accident and must necessarily determine its occurrence. If the occurrence of an accident is objectively determined even before the non-compliance with the regulatory requirements or results from the parallel development of processes, regardless of the actions of the persons concerned, then no causal link can be made.

The reason (non-compliance with regulatory requirements) must not only precede the consequence in time, but also cause it, being the main factor in the accident. In this case, failure to comply with regulatory and technical requirements, as a volitional form of behavior and direct actions of a person, directly causes an accident, that is, directly exerts a negative from the point of view of social behavior influence and thus causes the occurrence of socially dangerous consequences. If action is a directed form of action to achieve a result, then inaction causes damage indirectly. This is explained by the fact that a person does not interfere with the development of a causal connection, does not fulfill the duty assigned to him to perform active actions, which he should have prevented harm, although it has the potential and should provide the occurrence of harmful consequences. Due to the passive behavior of the person and the actions of other forces and means (actions of third parties, forces of nature, mechanisms, different processes, etc.), accidents occur as a fact of reality. However, this does not mean that in the latter case there is no causal link between inaction and the consequences. There is such a connection. He is in the subjective side of the action, when the person must know about the presence of dangerous factors, could influence them and the ability to prevent the occurrence of negative consequences.

After all, an expert, as a specialist in the field of specialist knowledge, can most accurately address the question of the existence and development of certain objective laws, as well as determine whether the person acted in accordance with the requirements of legislative or regulatory acts and whether the actions of that person, with technical point of view, in the causal connection with the onset of an accident.

The conclusion about the presence (absence) of a crime character is really the prerogative of a lawyer; but a practical justification for this conclusion without special knowledge is impossible. Therefore, decisive importance in a case should be given to the expert's conclusions.

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**ДЕЯКІ ПИТАННЯ ДОСЛІДЖЕННЯ ПРИЧИННО-НАСЛІДКОВОГО
ЗВ'ЯЗКУ ПРИ ВИКОНАННІ КОМПЛЕКСНИХ СУДОВИХ
ІНЖЕНЕРНО-ТЕХНІЧНИХ ЕКСПЕРТИЗ У ГАЛУЗІ ОХОРОНИ ПРАЦІ
ТА ЕЛЕКТРОТЕХНІЧНИХ ЕКСПЕРТИЗ**

Встановлення істини в кримінальному судочинстві при розгляді справ, пов'язаних із невиконанням вимог Закону України «Про охорону праці», неможливе без проведення судових експертиз щодо дослідження причинних зв'язків та встановлення обставин, що передували настанню нещасного випадку. Повнота та об'єктивність висновку експерта за результатами проведених досліджень нещасних випадків, пов'язаних з електротравмуванням, залежить від наявності фахових знань у галузі електротехніки та потребує обов'язкового залучення експерта відповідної спеціальності.

Ключові слова: комплексна судова інженерно-технічна експертиза в галузі охорони праці та електротехнічна експертиза, нещасні випадки, пов'язані з електротравмуванням, причинно-наслідкові зв'язки, аналіз сучасної практики.

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