

Methodology For Assessing Environmental Risks In Labor Processes In Brazil

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Abstract:

Background: This article aims to present a methodology to help labor lawyers understand the technical concepts related to the assessment of unhealthy conditions in the workplace. The expert assessment in this context requires facts and conclusions that are clear, objective and based on technical and legal bases. To establish a solid understanding of the subject, the paper begins by providing an overview of unhealthy concepts.

Materials and methods: In this section, the methodologies related to the different agents that cause unhealthy conditions are presented, together with a proposal for a script for the expert evaluation. These approaches aim to train legal professionals for a better understanding when monitoring expertise related to unhealthy conditions in the workplace. The methodological proposal aims to provide lawyers with the tools and knowledge necessary for a more efficient performance for the benefit of their clients.

Results: The expected results of this study are the training of lawyers specialized in labor law to accompany unhealthy expertise with greater technical knowledge. This will allow for a more grounded defense of the interests of its clients. By adopting the proposed methodology, lawyers will be able to better understand the technical concepts involved in the assessment of unhealthy workplaces.

Conclusion: In short, it is believed that the methodology proposed in this article will play a fundamental role in helping lawyers specializing in labor law to follow up on health hazard investigations with greater technical knowledge. This approach will provide a more grounded defense of clients' interests, allowing lawyers to act more efficiently in this specific field.

Key Word: Labor expertise; environmental assessment; unhealthy; Expert evaluation, Labor lawyers..

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I. Introduction

The dignity of the human person is the main principle of human rights. Although, theoretically, there are no hierarchies of constitutional norms, such a principle is indispensable for human rights, and is therefore at the top of individual and collective guarantees¹. The professional occupation plays a significant role in the formation of the human being, interfering with social inclusion and the constitution of individuality and identification. With the appearance of machines, instruments, equipment, tools, buildings, production, industrialization, and especially with technological advances, strengthened by the Industrial Revolution, cases of accidents and illnesses caused by work often spread. Occupational diseases began to attract people's attention and in 1700, the physician Bernardo Ramazzini published "The Workers' Diseases"².

With regard to labor lawsuits, there is a great demand for lawsuits that require the execution of expertise to verify the occurrence or not of unhealthy conditions in the workstations, being the theme established by the Consolidation of Labor Laws¹² (CLT) in article 195, in which: Art. 195 - The characterization and classification of insalubrity and dangerousness, according to the rules of the Ministry of Labor, will be carried out through expertise carried out by an Occupational Physician or Occupational Engineer, registered with the Ministry of Labor.

The present work is justified by the lack of understanding that many lawyers have about the assessment of unhealthy conditions, which is an activity under the responsibility of the Occupational Safety Engineer and Occupational Physician. Many lawyers find it difficult to understand the evaluation methods, so the purpose of

this work is to give an understanding when they accompany the work's judicial expertise. This proposal will enable a greater understanding of the methodologies used in the evaluations.

Brazilian legislation defines 14 types of unhealthy agents for granting the additional unhealthy, with the aim of leaving the work well-founded regarding the application of the methodology, only a few unhealthy agents were chosen to be studied. In this case, the agents chosen were continuous and intermittent noise and heat.

The objective of this work is to offer a methodology for approaching and developing an expert work for the analysis of unhealthy work conditions, as defined by Regulatory Standard 15 and the methodological requirements of hygiene and safety at work.

To achieve this objective, the following steps will be carried out: Conceptualize Unhealthy due to noise and heat, as well as the degrees and their frameworks; Identify the assessment methodologies relevant to unhealthy agents. Specify a roadmap for monitoring the expertise. Define an argument regarding the application of the methodology.

II. Bibliographic Reference

In this section, the main topics related to the theme of this dissertation will be presented, with emphasis on a theoretical and scientific basis that addresses the methodological procedures used to obtain the results.

This chapter seeks to provide a solid foundation for understanding the environmental hazards workers are exposed to in their work environment. Fundamental concepts of unhealthy conditions will be addressed, as well as the risks defined in Brazilian labor legislation^{10, 11}.

REGULATORY STANDARDS

The Regulatory Norms were regulated through Ordinance 3.214/78. At present, there are 37 regulatory standards, each with a specific content. For ³, the NR's "are prepared and modified by specific tripartite commissions composed of representatives of the government, employers and employees."

To substantiate this work, the norm related to unsanitary expertise will be seen, that is, the NR's 15.

Unhealthy Activities and Operations

NR no. 15, "is one of the most extensive norms, containing fourteen annexes" ⁴. Highlighting that, thirteen are currently in force. Such annexes are the following: Table 1 - Annexes of NR 15 - Degrees of Unhealthiness: Annex Activities or operations that expose the worker Percentage.

Annex 1 Tolerance limits for continuous or intermittent noise 20%; Annex 2 Tolerance limits for impact noise 20%; Annex 3 Tolerance limits for exposure to heat 20%; Annex 4 (Revoked by MTE Ordinance No. 3751); Annex 5 Ionizing radiation 40%; Annex 6 Work under hyperbaric conditions 40%; Annex 7 Non-ionizing radiation 20%; Annex 8 Vibrations 20%; Annex 9 Cold 20%; Annex 10 Humidity 20%; Annex 11 Chemical agents whose unhealthiness is characterized by tolerance limit and inspection in the workplace 10%, 20% and 40%; Annex 12 Tolerance limits for mineral dust 40%; Annex 13 Chemical agents 10%, 20% and 40%; Annex 14 Biological agents 20% and 40%

Regarding the determination of unhealthy conditions, the Ministry of Labor established three criteria for characterizing unhealthy conditions: quantitative, qualitative and activity-related assessments. It also associates which attachments correspond to each parameter ⁵.

UNHEALTHY

With the standardization of labor law, related to Occupational Safety and Medicine, the Federal Constitution of 1988, guaranteed in its art. 7, item XXIII, the granting of the premium for hardship, unhealthy work and dangerous work.

Therefore, some additional ones were integrated into workers' rights even before they were expressly employed in the Federal Constitution as fundamental workers' rights, through the enactment of Federal Law No. 6,514 of 1977.

Additional for Unhealthy Work

The activities that define the unhealthy work premium were defined by the Ministry of Labor and Employment, in the light of art. 190 of the CLT, when employees are exposed to physical, chemical or biological agents that harm their health. Although art. 192 of the CLT has defined the additional unhealthy for exposure to harmful agents above the tolerance limit, which is a quantitative criterion, the indication of unhealthy is also given by qualitative criteria, as in the case of exposure to biological agents. Thus, the characterization of unhealthy results from expertise, in the light of art. 195 of the CLT ⁶.

TST summary no. 47, says that unhealthy work, even if intermittent, does not remove the right to additional unhealthy work, that is, work activity that exposes the worker to unhealthy conditions, even when intermittent, must be remunerated with the addition of the additional unhealthy.

So, the activity that gives rise to the payment of the unhealthy work additional, under the terms provided for by Ordinance n. 3,214/78 of the Ministry of Labor and Employment, will be remunerated with an increase of 10%, 20% or 40% on the minimum wage, equivalent to unhealthy conditions in minimum, medium and maximum degrees.

The Regulatory Norm – NR 15, of Ordinance n. 3.214/78, of the Ministry of Labor, when the worker is conditioned to more than one harmful agent, only the unhealthy factor to a greater degree must be considered.

It should also be noted that the supply of Personal Protective Equipment (PPE) validated by the competent body of the Executive Branch can remove the aggressive agent that generates the additional unhealthy work, according to Precedent n. 80 of the TST. Despite this, the exclusion of the request for unhealthy conditions is not enough to supply PPE, effective use must also be considered (Precedent No. 289 of the TST) and the exchange within the period of validity of the Personal Protective Equipment.

Classification of Unhealthy Work

Unhealthiness is classified as any and all chemical, physical, biological agents, with due legal provisions that, directly and indirectly, cause damage to the health of the worker. According to article 189 of the CLT, which states “Unhealthy activities or operations shall be considered those that, by their nature, conditions or working methods, expose employees to agents harmful to health, above the tolerance limits established due to the nature and nature of the work. intensity of the agent and the time of exposure to its effects.”

Unhealthy professions are those in which workers are exposed to risk factors harmful to health. For example: exposure to noise, contact with chemical agents, biological risks, overheating, freezing, among other similar things ⁷.

Examples of some professions that fall under unhealthy conditions: Nursing Assistant; Auxiliaries or General Services who work in unhealthy conditions; doctor.

The Regulatory Norm⁸ – NR 15, of Ordinance no. 3.214/78, of the Ministry of Labor, when the worker is conditioned to more than one harmful agent, only the unhealthy factor to a greater degree should be considered.

Physical agents.

According to item 9.1.5.1 of NR 9 – Environmental Risk Prevention Program, physical agents are evaluated, different forms of energy to which workers may be subjected, such as noise, vibrations, abnormal pressures, extreme temperatures, ionizing radiation, non-ionizing radiation, as well as infrasound and ultrasound.

Chemical Agents.

According to item 9.5.1.2 of NR 9 – Environmental Risk Prevention Program, chemical agents are considered to be substances, compounds or products that can enter the body through the respiratory tract, in the form of dust, fumes, mists, gases or vapors, or which, by the nature of the exposure activity, may come into contact with or be absorbed into the body through the skin or by ingestion. They are represented by chemical substances that are found in liquid, solid and gaseous forms. When captured by the body, they can generate toxic reactions and damage to health. Pulmonary diseases, irritation of the upper airways, headaches, nausea, drowsiness, silicosis, asbestosis and pneumoconiosis, among others, are evident. Annex 11 - Chemical agents whose unhealthy conditions are characterized by a tolerance limit and inspection in the workplace, of NR - 15 - Unhealthy Activities and Operations, characterizes that unhealthy conditions will occur when the tolerance limits set out in Table No. 1 are exceeded - Table of Tolerance Limits of annex 11 of NR-15.

In Annex 12 – Tolerance limits for dust and minerals, of NR - 15, it also characterizes that unhealthy conditions will occur when the tolerance limits are exceeded and determines some. In Annex 13 of NR-15 - Chemical agents, a list of activities and operations involving chemical agents, considered unhealthy as a result of inspection carried out in the workplace, was established, excluding activities or operations with chemical agents from this list contained in Annexes 11 and 12 of NR-15. Also, in Annex 13-A – Benzene, actions, attributions and procedures for preventing occupational exposure to this proven carcinogenic substance are regulated.

Biological Agents

According to item 9.1.5.3 of NR 9 – Environmental Risk Prevention Program, bacteria, fungi, bacilli, parasites, protozoa, viruses, among others, are identified as biological agents. These micro-organisms are capable of causing diseases due to contamination and the very nature of the work. Consequently, infectious

diseases such as hepatitis and external and internal infections may appear. In Annex 14 Biological Agents, of NR 15 Unhealthy Activities and Operations, a list of activities and environmental conditions was established which, depending on the exposure and the duration of contact, qualitatively characterizes the additional unhealthy in medium degree or in maximum grade.

Methodology for evaluating the studied unhealthy agents

Under the terms of NR 15, Ordinance 3.214/78 – UNHEALTHY ACTIVITIES AND OPERATIONS, unhealthy activities or operations are those that are carried out: Above the tolerance limits provided for in Annexes 1, 2, 3, 5, 11 and 12; In the activities mentioned in Annexes 6, 13 and 14; Proven through the inspection report of the workplace, contained in Annexes No. 7, 8, 9 and 10; 15.2 The exercise of work in unhealthy conditions, according to the sub-items of the previous item, ensures the worker the perception of additional, levied on the minimum wage in the region, equivalent to: 40% (forty percent), for maximum degree of unhealthy conditions; 20% (twenty percent), for medium-grade unhealthy conditions; 10% (ten percent), for minimal degree of unhealthy.

In the case of incidence of more than one unhealthy factor, only the highest degree will be considered, for the purpose of salary increase, being forbidden the cumulative perception.

Continuous and intermittent noise (Annex 1 of NR-15).

Legal support for this methodology is defined in Annex 01 of NR-15 of Ordinance 3214 June 8, 1978

The technical procedure for assessing occupational noise uses FUNDACENTRO Occupational Hygiene Standard 01. This standard defines a series of procedures that the professional must perform, including the preparation of the final assessment report. In the case in question, only the most basic and easily identifiable items will be taken as a basis. Items to be checked: Definition of the duty cycle; Dosimetry was performed in the defined work cycle; Equipment calibration; Is the measurement of the dosimeter calibration within the tolerance of plus or minus 1dB? Normalized exposure level (NEN) of worker noise; Compare the NEN with a tolerance limit of 85dB(A)¹³.

Heat (Annex 3 of NR-15).

Legal support for this methodology is defined in Annex 03 of NR-15 of Ordinance 3,214 of June 8, 1978.

The technical procedure for assessing occupational noise uses FUNDACENTRO Occupational Hygiene Standard 06.

This standard defines the technical procedures for the evaluation of heat.

Among the agents that can harm the health of the worker is the heat. An activity is considered unhealthy due to exposure to heat when this exposure, obtained through the Wet Bulb Index - Globe Thermometer (IBUTG), is greater than the limit established by Annex n. 3 of NR 15 of Ordinance 3,214 (Brazil, 1978). This tolerance limit for exposure to heat varies according to energy expenditure and the worker's work and rest periods^{9, 14}.

In the case in question, only the most basic and easily identifiable items will be taken as a basis.

Items to be checked: Equipment calibration in INMETRO/RBC; Definition of the work cycle for the most unfavorable 60 minutes of the working day; Definition of the worker's activity metabolic rate; Definition of the tolerance limit; Average IBUTG value of the activity; Comparison of the average IBUTG value with the tolerance limits.

Judicial expertise and technical reports

The expert is indicated by the judge when technical knowledge in the area of the object is needed, so that the case can be examined and a report prepared, a situation that is defined in art. 156 of the Civil Procedure Code (CPC), where: the judge will be assisted by an expert when the proof of the fact depends on technical or scientific knowledge.

The expert is prohibited from exceeding the limits of his designation, as well as issuing personal opinions that exceed the technical or scientific examination of the object of the expertise. The expert must stick to what the judge has determined for the expertise.

With regard to the expert report to be prepared and presented by the expert, article 473 of the CPC states that it must contain the following terms:

Art. 473 – The expert report must contain: I – exposure of the object of expertise; II – the technical or scientific analysis carried out by the expert; III – indication of the method used, clarifying it and demonstrating that it is predominantly accepted by specialists in the area of knowledge from which it originated; IV – conclusive answer to all questions presented by the judge, by the parties and by the Public Prosecutor's Office.

Expert objections

At first, it should be noted that the director of defense, such as the challenge of expert reports, is a constitutional right expressly set forth in art. 5 of the CF, where the following fragment is found: "LV – litigants, in judicial or administrative proceedings, and the accused in general are assured the contradictory and ample defense, with the means and resources inherent to them". It is the reason for the contradictory and ample defense, with the means and resources inherent to it".

In part, the CPC establishes on expert challenge in art. 477, § 1 where it mentions: "The parties will be summoned to, if they so wish, express an opinion on the expert's report within a common period of 15 (fifteen) days, and the technical assistant of each of the parties may, within the same period, present its opinion. "

Already the art. 466, § 2 mentions that it is incumbent upon the expert to enable the disputing parties, as well as the assistants of the parties, to permit and monitor the expert diligences to be completed. The party has the possibility to attend the due diligence due to the principle of publicity of procedural acts and the CPC.

Basic structure of a labor process.

The labor process is a legal action for the resolution of conflicts related to work, whether it is a labor claim proposed by an employer, employee or Public Ministry of Labor (MPT), as defined in DECREE-LAW No. 5.452, OF MAY 1, 1943 and LAW No. 13,105, OF MARCH 16, 2015.

Complaint.

Ask that gives impetus to judicial protection. It can be verbal or written, requires addressing, the qualification of the parties, exposition of the facts, request, value of the cause, date, signature of the claimant or his representative, according to art. 840 of CLT.

Hearings.

This is the time for conciliatory attempts between the parties. Their testimonies, witnesses, experts and technicians are heard. While the ordinary procedure contemplates the continuous hearing, the very summary one provides for only one, with manifestation and oral sentences to speed up the labor process.

Judgment.

Recognition of the request by the magistrate's statement, which may be unfounded, totally or partially valid. It is emphasized the need for reasoning and mention of the elements of conviction of the judgment, the report being dispensed with in the summary procedure.

Resources.

Provided from art. 893 of the CLT, as a rule, have a period of 8 working days from the published decision, exceptions being the extraordinary appeal (up to 15 working days) and the motion for clarification (up to 5 working days).

Execution.

Labor process by which the parties settle their obligations after the knowledge stage. The merit of the conflict is no longer discussed, as the purpose here is the payment and receipt of the amounts due, putting an end to the dispute.

Basic structure of the expert report.

The expert report must contain some basic items, according to Article 473 of Law No. 13,105/2015: I - exposure of the object of expertise; II - the technical or scientific analysis carried out by the expert; III - indication of the method used, clarifying it and demonstrating that it is predominantly accepted by specialists in the area of knowledge from which it originated; IV - conclusive answer to all questions presented by the judge, by the parties and by the public prosecutor's office.

III. Material And Methods

This chapter presents the phases of the proposal for a risk assessment methodology that workers are exposed to in an expert investigation, fig. 1 presents the methodology flow.

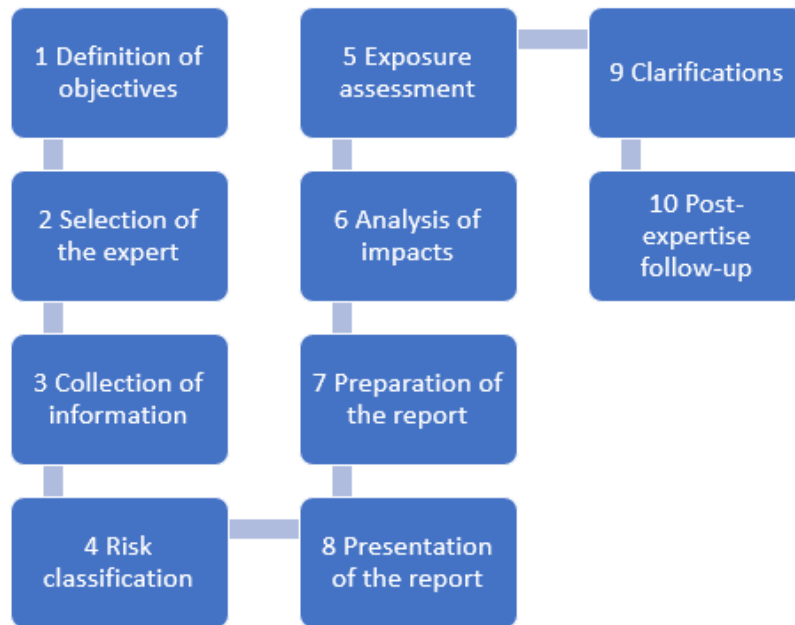


Figure 1 - Forensic due diligence methodology flow
Source: Authors, 2023.

Definition of the objectives of the evaluation:

The object is defined in the appointment of the expert focusing on the initial petition of the process, which can be any unhealthy agent defined in the annexes of NR-15.

Identify and assess the environmental risks present in the workplace; Determine workers' exposure to these hazards; Assess the impacts of these risks on the health and safety of employees; Propose control and prevention measures to reduce environmental risks.

Selection of the team of experts:

Choose experts specialized in occupational health, work safety, environment and related areas; ensure that experts have adequate training and experience in the area of environmental risk assessment.

Information collection:

Conduct a visit to the workplace to observe environmental conditions and identify potential risks; Gather relevant documents, such as technical reports, previous accident reports, records of regular inspections and information about work processes.

Identification and classification of environmental risks:

Identify the present environmental risks, such as chemical, physical and biological agents; Classify the risks in accordance with current legislation and standards, such as NR-15 (Regulatory Standard No. 15) of the Ministry of Labor.

Assessment of worker exposure:

Carry out measurements and samplings to determine the concentration and time of exposure to environmental agents; Use appropriate equipment and follow good sampling and analysis practices; Compare the results obtained with the occupational exposure limits established by legislation.

Analysis of impacts on employee health and safety:

Analyze the collected data and verify the possible effects on workers' health; Consult scientific literature and relevant studies to support the assessment of impacts; Consider individual factors, such as the sensitivity of certain workers to certain environmental agents.

Elaboration of the expert report:

Document all stages of the evaluation and the results obtained; Describe the identified risks, worker exposure and impacts on health and safety; Present recommendations for control and prevention measures to mitigate environmental risks.

Presentation of the expert report in the labor process:

Prepare a clear and objective presentation of the expert report to be used in the labor process; Make available all relevant information, evidence and scientifically based conclusions.

Participation in hearings and clarifications:

Attend court hearings to present the expert report and provide additional clarifications, if necessary; Respond to questions from the opposing party, lawyers and judges in a technical and reasoned manner.

Post-expertise follow-up:

Monitor the implementation of the recommendations proposed in the expert report;

Conduct periodic assessments to verify whether the control measures adopted are effective in reducing environmental risks; It is important to emphasize that this methodology only serves as a general guide and can be adapted according to the specific needs of each labor process involving the assessment of environmental risks.

IV. Result and Discussion

Proposed methodology: The article presents a proposal for a methodology that aims to help labor lawyers understand the technical concepts related to the assessment of unhealthy conditions in the workplace. This methodology provides a roadmap for expert assessment, based on facts and clear, objective conclusions based on technical and legal bases. Solid understanding of unhealthy concepts: The work provides an overview of unhealthy concepts, establishing a solid knowledge base for employment lawyers. This allows them to comprehensively understand the topic and its technical aspects. Training of legal professionals: The expected results include training of labor lawyers for a better understanding and monitoring of expertise related to unhealthy conditions in the workplace. The proposed methodology aims to provide tools and knowledge necessary for a more efficient performance for the benefit of customers.

Grounded defense of the interests of clients: It is believed that the methodology proposed in this work will allow lawyers specialized in labor law to follow up on unhealthy investigations with greater technical knowledge. This will result in a more grounded defense of your clients' interests, improving the effectiveness and quality of your work. The main results of this article include the proposed methodology, a solid understanding of the concepts of unhealthy conditions, the training of legal professionals and the grounded defense of clients' interests. These results have the potential to significantly contribute to the performance of labor lawyers in the field of unhealthy work places.

The proposed methodology presented in the text is of great importance for labor lawyers who deal with cases of unhealthy conditions in the workplace. The expert assessment in this area demands specific technical knowledge and legal basis so that the conclusions are objective and grounded. A relevant discussion to be addressed in this scientific article is the need to train legal professionals in this specific field. Understanding the concepts of unhealthy conditions and assessment methodologies is essential for lawyers to act efficiently in defending their clients' interests. The methodology proposed in the article seeks to fill this gap, providing tools and knowledge necessary for a more grounded performance. Another point of discussion is the impact that this methodology can have on the quality and effectiveness of the defenses presented by labor lawyers. By adopting this approach, professionals will have a greater technical foundation to follow up on unhealthy investigations, which can result in more robust and convincing arguments for the benefit of their clients. In addition, it is important to discuss how the proposed methodology can contribute to justice and protection of workers' rights. Unhealthy work environment is a serious issue that can affect the health and well-being of workers. Therefore, it is essential that lawyers specializing in labor law have the necessary knowledge to properly identify and assess unhealthy conditions, as well as seek appropriate measures and compensation for affected workers.

Finally, it is worth discussing the importance of constantly updating labor lawyers in this field, due to changes in legislation and technological advances that can influence unhealthy conditions in the workplace. The methodology proposal presented in the article can be seen as a resource to continuously improve the knowledge of lawyers in this matter, allowing a more competent performance and adapted to current demands. In short, this scientific article presents a proposal for a relevant methodology to assist labor lawyers in understanding the technical concepts related to unhealthy conditions in the workplace. The discussion around this proposal includes training professionals, improving the quality of the defenses presented, the search for justice and protection of workers' rights, as well as the importance of continuous updating of lawyers in this field.

V. Conclusion

The assessment of environmental risks in a labor process plays a key role in ensuring the health and safety of the employees involved. The methodology proposed in this work seeks to identify and assess the risks present in the work environment, determine the exposure of workers to these risks, analyze the impacts on health and safety and propose control and prevention measures. By following this methodology, it is possible to obtain a complete and scientifically based expert report, which documents all stages of the assessment and provides detailed information on environmental risks, workers' exposure and impacts on health. In addition, the report presents recommendations for control and prevention measures, aimed at mitigating the identified risks.

The presentation of this expert report in the labor process provides relevant and substantiated information, helping to support the arguments of the parties involved and contributing to the decision making by the judge. The participation of experts in hearings and clarifications allows them to provide additional technical information and answer questions, ensuring a proper understanding of the report. It is essential that the proposed methodology be adapted to the specificities of each case, taking into account the current legislation and standards, as well as the particular characteristics of the work environment in question. Furthermore, it is important to monitor the implementation of the proposed recommendations and carry out periodic evaluations to verify the effectiveness of the adopted control measures.

In short, the methodology for expert assessment of environmental risks in labor processes contributes to ensuring the health and safety of workers, providing a technical-scientific basis for judicial decisions and promoting the adoption of adequate prevention and control measures in the work environment.

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