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PRESCRIBED MAINTENANCE AND REAL MAINTENANCE: AN APPROACH BASED ON THE ACTIVITY OF LIVE LINE EXPERTS

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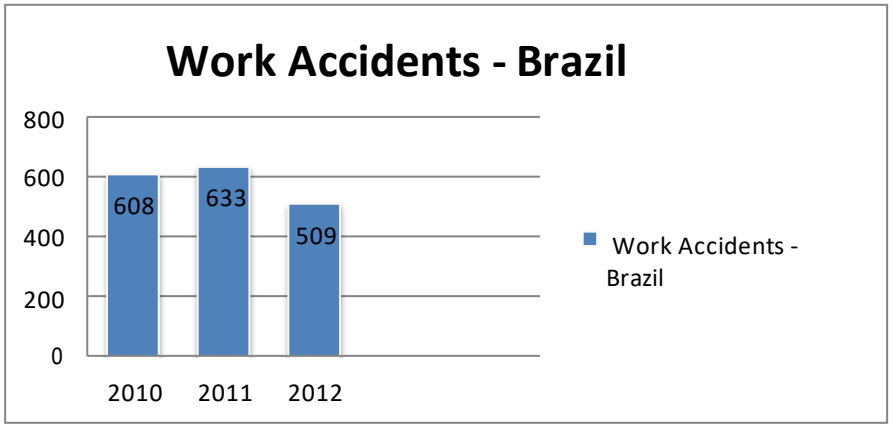
SUMMARY: The present study aims to highlight the gap between what is prescribed to workers and what is actually carried out in the workplace. This distance highlights difficulties and constraints in carrying out the activity, whether due to "non-compliance" and "transgressions" of the rules, or due to an inability to manage unforeseen events in the field. Given this scenario, the activity of live line electricians was analyzed, since it is carried out with the network energized, that is, there is a passage of energy at the same time as the work of the workers. The need to analyze this activity was observed, as it poses great risks to workers' health, with the aggravating factor being the fact that the majority of accidents are fatal. As a result, the complexity involved in managing the operation of the real activity in relation to the prescribed task of live line electricians is highlighted, in order to demonstrate that this distance can bring negative consequences for the worker and for production. Furthermore, improvements are proposed for the preparation of prescriptions and the need to contemplate the distance involved between the prescribed task and real activity is emphasized, demonstrating the importance of involving the social actors responsible for the activity in the management of their prescriptions.
Keywords: Task; Actual activity; Live Line; Electrical.

INTRODUCTION

Due to the demand for energy today, the energy sector has been one of the most important sectors in the world, since many goods and services depend directly on it. Energy is related to all productive sectors, consequently, decisions regarding energy produce effects in different areas of the economy (BAJAY, 1989). However, despite bringing many positive impacts to the economy, this sector is currently also bringing high costs due to work accidents.

According to the IBGE-Brazilian Institute of Geography and Statistics, the sector studied in this work is determined by CNAE 3514-0/00. Thus, through this classification, it is possible to see an overview of accidents in recent years, illustrated in the figure below (Figure 1 – Work Accidents – Brazil).

Figure 1: Work Accidents CNAE 3514-0/00 – Brazil



Source: MPS (Adapted).

Thus, this sector presents large numbers of accidents at work, as it is a dangerous activity that involves a series of occupational risks and accidents, which are aggravating to workers' health. In the current work, a cut was made in the company's flowchart and, among all the activities carried out in the electrical sector, the live line activity was chosen, as it is characterized by carrying out work with the energized network, exposing workers to a great risk. This activity has an aggravating factor in relation to accidents, as it does not admit errors, since in the majority of cases that occur, they are fatal.

The live line activity has particularities in relation to the others, as, in addition to being carried out with the network energized, it also presents several singularities, since different work contexts and environments are presented to workers from the same service order. , demanding tacit knowledge from workers that requires compliance with a way of carrying out the activity. As a consequence of the demand for tacit knowledge, there are worker individualities, which include how they incorporate knowledge and how they carry out their activities. Thus, the environment in which this sector is immersed generates several questions and stimulates in-depth investigation into the type of employee behavior. all its actors during training and structuring regarding the role they play (GOMES and VIEIRA, 2009),

Due to these variabilities, the live line sector is an important branch of studies and research in all phases of the work carried out, from the creation of the prescribed task to what actually happens in the real work context, as it is observed that by Being an activity of great complexity, it is continually passed on to workers in a way that is very far from the reality found in the field, so the worker is often unable to carry out their activities as prescribed by the company, as day-to-day variability are not included in them. Therefore, to overcome this lack of information, the executor adopts strategies to carry it out and mobilizes skills in the course of action, showing a great gap between what is prescribed and what is actually performed in his work. Finally, this study has the general objective of demonstrating the complexity involved in managing the operation of the real activity in relation to the prescribed task of live line electricians. The specific objectives are to analyze the prescribed tasks established by the organization, aiming to highlight the elements involved in its construction process, understand the real activity of electricians on energized lines and point out the actions established to achieve successful execution and, finally, highlight the causes of the gap between the prescribed task and real activity to higher levels of the organization.

THEORETICAL REFERENCE

The transformations in production systems that occurred between the first industrial

revolution and the current forms of globalized capitalism are accompanied by important changes in the ways of living, working and getting sick among different peoples (ECHTERNACHT, 2008). From these transformations, new equipment, production processes and even new ways of life were created, causing the ways that the worker establishes with his work are changed, often, due to an imbalance between the production process and the way worker, leading him to adopt regulatory attitudes to carry out his work, and such attitudes can have consequences for the worker's health and production.

According to Echternacht (2008), as they are recent and complex phenomena, such impacts of the transformation of the concrete conditions of living and working on the health of working populations are still poorly understood, making it necessary to study the work process to recognize which are influences on these workers.

To understand all the aspects that can influence work methods, it is first necessary to analyze your work context and how it is carried out. For this, knowledge of your task and activity is essential, where the examination of the task-activity interrelationship therefore presents itself as a privileged object for the analysis of practices, values and beliefs. Such conditions put work management models and workers' ways of doing and thinking into conflict (FERREIRA, 2004).

According to Abrahão et al. (2009), the task is understood as a set of prescriptions, in relation to what the worker must do, according to certain norms, quantity/quality standards and through specific equipment and tools, thus, the tasks are generated by hierarchical superiors and their main objective is to establish which actions and which results are expected when carrying out their work. Activity, on the other hand, is defined as what the worker does and the way in which the worker uses himself to achieve the objectives (ABRAHÃO et al., 2009).

With this, it can be observed that there is a great distance between what is the prescribed task and what is actually performed by the worker, and the distance between what is prescribed and what is real is the concrete manifestation of the contradiction always present in the act of work. , between “what is requested” and “what the thing demands” (GUÉRIN et al., 2001).

The objective of understanding the operational strategies used by workers requires the identification of the prescribed work (task), the actual work (activity) and the working conditions (demands, loads, risks) (TRIERWEILLER et al., 2008). Therefore, it is necessary to recognize these three factors in the work environment and through them understand which variables lead to this distancing.

Such variability can be caused by several factors, since in the work process there are a series of demands and variables that regulate the flexibility of the operating mode, giving it a characteristic of greater or lesser possibility of regulation (SOUZA, 2006). Thus, through regulations and ways of carrying out work, workers are able to overcome these variabilities and reach the final objective, which is to carry out their activity successfully.

Therefore, such regulations are necessary and important, as it is through them that the worker is able to carry out their work, whether through adaptations due to lack of necessary equipment, sufficient time or even the possibility of being made by workers in other different work contexts. . According to Ferreira and Mendes (2001, p. 93):

> The activity expresses a type of behavior of the subject that tends to be structured in the form of strategies and operational methods to respond to the physical, cognitive and psychological demands inherent to the tasks and working conditions provided by the organization.

Therefore, there is a need to analyze the work environment to understand these variabilities that lead to these regulations, showing that there is a great distance between the two aspects and that they end up being the cause of these adaptations by workers. According to Guérin et al. (2001), work analysis allows us to understand how operators face diversity and variations in situations and what consequences they bring to their health and production.

With this, it is noted that the distance between the activity and the real task can have several causes, however, these causes, in most cases, refer to the production context and the norms to which the worker is inserted. According to Gonçalves (2000, p. 3) et al.:

> In work analysis, the theoretical distinction between task and activity is a privileged analytical resource for understanding individual and group conduct in work situations. Theoretical production in ergonomics shows that the examination of these two dimensions, in different contexts, provides explanatory elements about the genesis of the problems that workers face, and also how they prevent dysfunctions. Therefore, the well-being of the subjects, the efficiency and effectiveness of the work performed have their roots in the discrepancy between the task and the activity.

Therefore, there is a need to compare the prescribed task with the real activity, highlighting the causes of this gap to the higher levels of the organization, in order to improve the work process by encouraging practices that help both in production and in the non-generation of occupational diseases, since this distance causes the worker to make regulations in their work process and such regulations can directly affect the health of workers and the company's production.

MATERIALS AND METHODS

This article is a cross-sectional observational study. The sample is made up of workers in the maintenance sector of the Linha Viva of an energy sector company in the city of Itabira-MG. Initially, everyone was invited to participate in the study voluntarily and, after acceptance, all the information necessary to complete the Informed Consent Form (TCLE) was provided.

The live line team of the study in question is made up of three workers, all of whom have worked in this sector for at least three years, ensuring good knowledge of their work object. However, during the research, a contributing factor was the hiring of a new worker to replace another in the retirement phase, bringing as a contribution the discussion about the differences in working methods from the point of view of a new worker and one who has already has spent more time in the profession.

With this, after passing all the guidelines on what our work plan would be like in the company, meetings were then held with the team involved to clarify the project and, soon after, field visits began to data collect. The data collected includes both recordings of the execution of activities and recordings of workers' verbalizations. For this, data collection took place with the aid of a recorder and a video camera, in addition to semi-structured interviews with workers for subsequent transcription.

Subsequently, all the information collected was studied, analyzing the standards applied by the company and how the activity is actually carried out. Through a confrontation with the workers, it was possible to propose control and/or mitigation measures to reduce the gap between the prescribed task and the real activity, with the aim of assisting in the production process and promoting workers' health.

RESULTS

After field visits and analysis of documents provided by the company, it was observed that there is a gap between what is prescribed in the NDs – Distribution Standards and what actually happens in the workplace. After studying the audios and images, videos and workers' verbalizations were used to support the results.

NDs are documents established by the company analyzed, in order to provide support to workers in carrying out activities. They describe the basis of the technical procedures necessary to carry out activities and the security measures that must be adopted to carry out

them. Over time, this documentation has improved to help more efficiently in the work context. In previous years, ND's were larger in size compared to the current one, but over time the company's managers realized that enforcing certain types of behavior and procedures in the workplace could increase the chances of accidents, as it did not contain such information. precise and necessary information that really helped in the execution of the activity.

> *"The standard that governs the hotline service called ND – Distribution Standard, it was already bigger, it was a book this thick, with photos, how the activities were carried out but [...] it was causing accidents with the people following the manual, because each activity, each place, is a particularity, so there's no point in wanting to put a plaster on it, so today it's the following: you have these basic principles that people can't break, working with double isolation, but where does that go? apply and how it will be applied, this is at the discretion of the team that carries out the assessment, risk analysis, programming [...] (Manager)".*

As can be seen, there is evidence that prescriptions that do not take into account the reality on the ground can have negative consequences for the activity, mainly being the cause of accidents at work.

Initially, to carry out the activity, the employees responsible for the activity must complete a risk analysis, as established in ND 4.4, item 3.2. The risks inherent to the execution of tasks must always be identified, eliminated or controlled. Carrying out this analysis aims to recognize the risks present in the work environment, with the aim of preparing the assessment and proposing control measures for the risks existing in that work environment and, only after all these procedures, the signature of all executors of the activity, for subsequent preparation for carrying out the activity.

> *"...the boys were filling out the risk analysis form, but that form for the hotline itself, it's very vague, it doesn't meet our needs, because what really concerns the attention is this conversation, even though they have, the task schedule, is what will really surround the risk [...] it is a matter of legislation, we are obliged to fill out that risk analysis in writing, because if an accident happens the company says that the guy was aware of the risk he was subjected to [...] (Manager)"*

With this, it is clear that not all procedures carried out that are predisposed and have an obligation to be carried out, are seen as beneficial or effective for workers, because even if there were no such form, a conversation is always held with the aim of analyzing all ambient environmental conditions before carrying out the operation. It is still clear that this conversation between the team before starting the activity is extremely important, as at that moment they evaluate the location and decide how they will carry out the work, analyze all the factors that can influence the activities and also propose the best measures to carry out activities that will not pose risks to the health of workers who will carry out the activity.

> *"Do you see how long people have been talking? They have been there since the moment they arrived, until now the activity has not started, anyone who sees it from the outside thinks: it's not possible, the guys don't work (Manager)".*

In this initial conversation, workers spend some time talking and analyzing their work environment, since they do not work in a fixed location, which increases the variability present in the work environment. Through each established demand, they travel to the location, carry out an initial study and analyze how the trucks and dumpsters will be arranged in the safest way.

> *"There's no way around ours here, you work on this post today, tomorrow on another, you can work on this side or there."*

After analyzing the location and outlining how the tasks will be carried out, the executor climbs into the truck bed, properly equipped with PPE - Personal Protective Equipment, and heads towards the location where the maintenance will be carried out.

After arriving at the location, all wires and cables are isolated using EPCs (Collective Protection Equipment) so that the operator does not have any contact with the networks close to the place where he is carrying out the activity, as if this occurs, they could be hit with an electric shock. Due to the different characteristics, each location will require different types and quantities of insulation. This procedure is followed as established in ND 4.4:

> *"3.3 - It is the obligation of every electrician to use all necessary individual and collective protective equipment. Likewise, the electrician must have available all the personal protective equipment (PPE) and collective protective equipment (EPC) that are essential and appropriate for their safety."*

In addition to the procedure for adapting the insulators at the place where the activity is carried out, to carry out the activity it is mandatory that a person in charge is on the ground, monitoring the activity, as required in the standard: "2.3.9 (...) During the carrying out the work, the person in charge will have to position themselves in such a way as to have the best possible viewing angle to control and supervise the task and the work environment". Different points of view of the activity are extremely important, as it presents several risks.

> "...this activity of ours, whoever is on the ground, especially doing the monitoring, you have to 'always' anticipate what the guy is going to do, you always have to be one step ahead, thinking he's going to do it later , because if he breaks that sequence you have to say oops, something is wrong, what 'is' happening? Then you have to stop and ask the guy what are you 'doing' there now? - I will do this ! -But that's not what we agreed on! Because then you already get it right before the guy does, because in our service, unfortunately, we don't accept many mistakes, if the guy makes a mistake, that's it."

Still with the field analysis, the validity of the experiences that workers have and how they help in carrying out their work was perceived. According to Guérin et al. (2001), there is often, in the real activity of an operator, a tangle of actions that are part of different stories, with different temporal structures. These actions make the worker learn how to deal with different experiences during their working life. In conversation with the supervisor during the activities, it can be seen that he knew how to carry out that activity, however, he lets employees think of a better way to do it, to obtain their own knowledge and experiences.

> *"I worked directly at the company for 17 years, then I left, now I'm just coordinating. But even so, to this day you see people working and notice the difference. Even the physical issue, I find it easy to work in a position, other people don't. That's personal, there's no way, I even played with the boys, you know, for me, you work upside down in the dumpster, as long as it's done safely, in the safest way".*

Therefore, it can be seen that there is a great distance between what is prescribed and what is real, so that the main details of the activities carried out by operators are not expressed in the NDs, thus, the possibility is pointed out that operators with less experience, or In other words, with less time in service, they have a little lag in their initial activities, since experience and knowledge will only be obtained when carrying out work during their working day, which can be an aggravating factor in cases of accidents. Therefore, it is important for a professional with greater experience to monitor the workplace, so that they can assist with work actions, so that they do not pose risks to the health and physical integrity of workers and also achieve success in carrying out the activities, since he has tacit knowledge and a different way of

seeing the course of action of the activities performed. It is also necessary to carry out training programs that are more realistic and consistent with the daily work demand, as, from that moment on, workers will be able to absorb knowledge of the basic procedures.

CONCLUSION

After carrying out this study, attention is paid to the importance of analyzing the work context at the time the activities are carried out, as elements that are not reported in the prescribed task can be highlighted through them.

It is also noted the importance of the workers' verbalizations, which are very enlightening for understanding the course of the activity, demonstrating elements that could go unnoticed.

Thus, it is possible to conclude that the activity is influenced by several factors, be they internal to the worker and also related to the company, which will directly contribute to carrying it out, which in the end, will meet the organization's objectives, which is the achievement demand and the worker. Therefore, to guarantee full knowledge of the work and how to carry out the activities, constant dialogue between different workers in the company, whether they are novices or experts, is recommended, in order to disseminate knowledge and recognize the risks of the work, allowing them, when carrying out activities, to know about their existence and how to minimize accidents in the workplace.

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