

Systemic appropriation: the case of humidification in granite mining sector in Brazil

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Abstract This research was conducted in Brazilian granite mining sector. This sector is particularly dangerous to health and safety of employees, mostly because of professional pneumoconiosis. So, the health and safety of mining NR22 regulatory standard made it obligatory to provide humidification throughout the extraction and manufacturing process.

The general hypothesis is that the introduction of an innovative prevention device changes the workers' activities, which can create new risks in situations and some disorders to be managed. Under certain conditions, the reliability is obtained, by a mechanism of systemic appropriation.

Considering risk management doesn't consist in following procedures but also includes the development of competences, we precisely propose to analyze this introduction from a particular point of view: the systemic appropriation.

Studies about appropriation of innovation argue that it begins with the instrumental genesis, makes a corporal inscription (at the body, the cognitive and at the psychic system) and finds its integration with the environment through the system of sense and symbolic knowledge. These theoretical constructions are important to understand the appropriation made by the operator facing the instrument. This approach assumes that during the process of appropriation, work can be enriched with the introduction of innovative technical features. It gives a central place for employees and their actions.

However, to understand the prevention appropriation it is necessary to go further. Prevention and appropriation are not only made locally. They also concern the all-system of work. This all-system is redefined and reorganized by the device introduced: new coherence, new links and senses appear. It is possible when activity is articulated with project, interests of companies.

Our thesis is that the reliability of socio-technical systems increases when creating the conditions for appropriation of production devices and prevention. This occurs in at least three levels: individual and collective practice, organization, and industrial project.