Insidious risk management as the practice of life of mine waste and tailings management

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# ABSTRACT

A social science lens on environmental and engineering organising processes over the life of mine (including mine waste and tailings management) provide an overarching understanding of the everyday work that gradually and often invisibly creates or avoids enviro-social unwanted outcomes. Gradually worsening risks can emerge in surprising ways thus we use the term insidious risks. While the LOM and MWT conference themes comprise sets of activities and tasks that are familiar and interrelated it is often not until a sudden unwanted event or crisis that the preceding insidious risk mismanagement becomes more obvious. Mine closure can be the time when unwanted outcomes become clearer (e.g. large closure liabilities and difficulties remediating wastes). However future possible outcomes, that include residual risks, need to be known during the life of mine so intervention can avoid a crisis. Crises analysed in my research included a tailings dam collapse, misclassified wastes self-combusting in waste dumps and a mine coal fire where delayed rehabilitation played a role. I also analysed ‘leading practice’ examples, a term often used but its achievement is difficult to explain. I provide a coherent understanding of the insidious risk management practice that can be blinkered (crisis-creating) or attentive (leading practice). Within this spectrum are likely many ways of managing insidious risk for which I explain the law-abiding IRM practice that seeks to always comply. While doing so this practice fluctuates over time according to regulatory fluctuations. In this IRM practice that is oriented toward different purposes for each of these three ways, the same sets of eight activities achieve five tasks, in different ways. My research helps practitioners to recognise the IRM practice within the flow of everyday work, when interventions are possible, rather than awaiting a residual risk assessment at the end when it is too late to change the trajectory. I thus frame residual risk as an ongoing process, not only as a measurable outcome, shaped by and recognisable by the activities and tasks and how they are carried out within the IRM practice.

*Note: this abstract relates to a paper that is under review for a journal and as such cannot be written up as a paper for this conference until published. If the paper has not been published before the paper is due, then this abstract would be withdrawn. However, some of this content could be shared in a panel discussion if there was interest.*