What role should controls play when declaring a failure mode non-credible?

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# ABSTRACT

Assessing when a failure mode is credible versus non-credible is an aspect of risk management that has come to the fore following the release of the GISTM, and the focus in that standard on credible failure modes. There is no clear definition of credible versus non-credible failure modes available in either the standard or in common use in the industry, leading many mining companies to develop their own approaches. Additionally, beyond the strictly technical credibility and non-credibility divide are approaches for assessing the credibility of failure modes by their levels of likelihood and/or consequence.

Often the assessment of credibility is made with explicit or implicit assumptions about external conditions, TSF behaviour and control effectiveness. This paper explores the role that controls and the underlying assumptions that support them can play when assessing the credibility of a failure mode considering approaches in common use in the industry for identifying failure modes, assigning controls, and assessing technical credibility and credibility based on risk. A review of control effectiveness and making allowance for missing, inadequate or failed controls is applied to the approaches considered to identify where a reliance on controls could mis-state the risk and lead to false-assurance. This paper highlights the need for the underlying control assumptions to be well understood when making a declaration of non-credible.