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Natural events such as lightning, floods, heavy rainfall, wind storms and earthquakes, can trigger damage to industrial facilities and critical infrastructure such as tailings dams. The effect of Natech (Natural Triggered Technological Hazards) on tailings is quite destructive to public safety and the environment. Dam failure can cause flash flooding and cause loss of life, property loss, damage to public facilities and severe environmental damage. In several cases of tailings dam construction failure, the threat to community safety is related to the location of the tailings dam which is close to residential areas. The objective of this study is to review the current literature about risk management in the Natech tailings dam. The methodology that used in this paper is review several accidents relevant to Natech disaster on the tailings dam will be reviewed; lessons learned from Natech accident; best practices in several companies in Natech Risk Management including risk identification, risk mapping, including lesson learned from different companies across global countries. Result suggested that several key lessons learned from accident have been identified including the failure of the tailings dam and overflow after heavy rains, damage to the tailings dam structure due to the earthquake, infrastructure defects, low awareness of the surrounding community causing many casualties during the disaster and delays in evacuation. Best practices related to risk management include identification and risk assessment against Natech, risk mitigation and communication strategies, Natech risk communication strategies and disaster management strategies.

Cascading disasters: how to design resilient crisis-management institutions and organizations?