

**Response by Gary Edwards B.Eng, ACSM, MSc. FGS, Mining Waste expert at the Environment Agency of England and member of European technical working group on mining waste**

P1.

Complying with this standard will deliver a good understanding of the scale of risk at any given site, but it does not go far enough in ensuring that all the information becomes publicly available and there is too much wriggle room for operators to hold back crucial facts.

P2.

The assessment of cost of failure must be by independent 3<sup>rd</sup> party assessor with relevant recovery experience.

Operators must be able to cover the cost of full clean up if failure occurs, be that by insurance, financial provision, bond, or by setting up a levy into which all operators pay to build up a “global tailings facility disaster recovery fund”. A standard that operators should “consider” taking out insurance is not strong enough and is likely to be ineffective.

No reference to how bribery will be prevented from undermining this standard.

P3.

In rural third-world locations the local people badly need the jobs that mining companies offer, so they will frequently ignore unsafe practices in the hope that everything will be okay, so that they can continue to work and feed their families.

Non-judicial process are likely to have the result that poor communities voices will not be heard.

P4.

The rebuttal option for operators to ignore the highest risk designations is an open-door for future high-profile disasters.

If zero tolerance [of loss of life] is the objective the only approach that will work is hazard assessment. Hazard assessment differs from risk assessment in that it takes no account of likelihood and assumes that failure [of the dam] will happen at some point. The tailings facility can then be designed and located to remove the Source-Pathway-Receptor (S-P-R) linkage; this is the only sure way to achieve zero tolerance for loss of life.

P5.

Section 5.1 is especially relevant.

The essential element is that assessments should be carried out by a totally independent and suitably qualified geotechnical engineer. This would be the equivalent of a “panel engineer” that is qualified to inspect large water dams in Europe.

P6.

This standard is fundamental to reducing risk, especially the siting of new tailings facilities so that they either cannot fail (below ground), or if they do fail they will no impact communities of sensitive environments.

P7.

This standard misses the point that the only sure way to remove the risk is to locate the facility and other infrastructure (e.g. staff canteen) so that it cannot impact communities or workers.

Appropriate management systems are set out in the European Mining Waste and Extractive Industry BREF (MWEI-BREF) – link: Best Available Techniques (BAT) Reference Document for the Management of Waste from Extractive Industries

[https://eippcb.jrc.ec.europa.eu/reference/BREF/jrc109657\\_mwei\\_bref\\_for\\_pubsy\\_online.pdf](https://eippcb.jrc.ec.europa.eu/reference/BREF/jrc109657_mwei_bref_for_pubsy_online.pdf)

P8.

This is a well written and important standard because effective monitoring can provide an early warning of potential failure. However, it does not prevent failure from occurring and would only work effectively as part of a structured approach to community evacuation and a Major Accident Prevention Plan (MAPP).

P9.

This standard needs to go a lot further to make the most senior staff personally responsible for disasters that occur while they are directing the company in charge of operations.

P10.

More work is required on this standard to deal with the complicated structure and assignment of responsibility for Joint Venture Partnerships (JVP's). JVP's are common in mining developments and this must be addressed more robustly. The role of fully independent assessment must be stressed again.

P11.

Section 11.3 – annual construction and performance reviews should be carried out by an independent engineer.

P12.

No comment

P13.

No comment

P14.

Section 14.2 – very useful.

P15.

This could be strengthened by referring to the European Mining Waste Directive requirements for a Major Accident Prevention Plan (MAPP), Off-site emergency plan requirements and relevant Health & Safety Executive (HSE) guidance for the protection of mine and quarry workers. In some circumstances the principles behind the Control Of Major Accident Hazards (COMAH) may also be useful.

P16.

This standard needs to be strengthened. The cost of recovery if a dam failure occurs is vast and it is unlikely that all but the largest mining corporations would be unable to fund such remediation and adequately compensate local communities. Some form of financial provision should be compulsory under the standard, though the GTR would need to commission a study to establish the most effective type of provision. Options might include insurance, bank bond, or even a levy on the industry to build up a "global tailings facility disaster fund".

Restoration costs would need to be calculated by an independent assessor and include costs to support local communities / families who may have lost key wage-earners, farmland etc., as well as remediation of the environment.

P17.

This standard is very open-ended (e.g. "relevant data and information").

The general public and investors should be able to have open access to fully independent inspection reports.

Summary of key issues to address:

- Hazard assessment, not risk assessment in line with European Mining Waste Directive Category A site assessment.
- Design/location of tailings facilities must break the S-P-R linkage in order to guarantee reducing casualties to zero.
- Compulsory and adequate financial provision based on fully independent assessment of remediation costs to communities and environment.
- CEO/Board made personally responsible for loss of life and damage to communities in event of failure.
- The standards need to cover orphaned, closed and abandoned sites – at present it assumes all sites have a viable operating company.
- GTR should engage with leading mining colleges to help promote training of the future generation of qualified engineers.
- Funding is essential for mining companies to operate, so if investors are serious about achieving zero tolerance of loss of life then they should support stronger standards in line with the above comments.