

Collaborative Accountability in TSF Governance

Empowering Roles in Tailings Storage
Facility Governance and Risk Management

M. Brink, C.R. Mtshali, G.C. Howell, N.G. Macfarlane
SRK Consulting, Johannesburg, South Africa



GISTM
FRAMEWORK



AFFECTED
PEOPLE



INTEGRATED
KNOWLEDGE



GOVERNANCE &
ACCOUNTABILITY



PUBLIC
DISCLOSURE



ZERO HARM
GOAL



INTEGRATED
KNOWLEDGE



SAFE DESIGN
& OPS



EMERGENCY
PREPAREDNESS



ZERO HARM
GOAL



LIFECYCLE
MANAGEMENT



INDEPENDENT
REVIEW

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Why this matters

TSF Governance: A Critical Safety Challenge

- TSFs pose significant risks to people, the environment, and infrastructure if mismanaged.
- Catastrophic failures cause loss of life, long-term environmental damage, and socio-economic disruption.
- The GISTM aims to eliminate these failures through a lifecycle, risk-driven, governance-anchored approach.
- Many mining houses now claim GISTM compliance, yet failures persist.

Why this matters

- Most failures are not due to a lack of standards, but due to structural and behavioural misalignment:
 - symbolic role appointments
 - blurred or diluted accountability
 - weak communication flows
 - disempowered technical roles
- These breakdowns erode risk visibility and often precede technical failure.
- True GISTM implementation demands a **shift from procedural compliance to genuine role embodiment and collaborative accountability.**

Overview of TSF Governance under the GISTM

A Structured Framework for Risk, Accountability, and Assurance



The GISTM (2020) establishes a globally consistent governance model aimed at achieving zero harm across the entire TSF lifecycle.



In SA it replaces historically inconsistent and fragmented governance approaches (e.g., under SANS 10286:1998) with clear accountability, responsibility, and competency structures.



The standard integrates corporate governance with engineering practice, ensuring that decision-making is informed by competent technical oversight across the TSF lifecycle.

The Core Roles in GISTM Governance

Accountable Executive (AE)

Holds ultimate corporate accountability.

Ensures governance systems, resources, and competencies are in place.

Approves risk acceptance levels and appoints the ITRB.

Responsible Tailings Facility Engineer (RTFE)

Custodian of day-to-day operational integrity and facility-level risk management.

Translates design intent and corporate expectations into operational practice.

Engineer of Record (EoR)

Provides technical assurance throughout the TSF lifecycle.

Ensures design conformance, performance evaluation, and safe operation.

Professionally accountable for technical integrity.

Independent Tailings Review Board (ITRB)

Provides independent, external review of facility performance and governance effectiveness.

Reinforces transparency and continuous improvement.

The Governance Triangle

The AE, RTFE, and EOR form an interdependent triangle.

This is not a hierarchy

This is a system of shared accountability



Key Insight:

No single role ensures safety.

- It emerges from their interaction.



The Governance Triangle

The Accountable Executive:

- Embed tailings into corporate governance
- Approve risk tolerance
- Allocate resources
- Empower RTFE and EOR
- Maintain board-level oversight

GISTM Principle 2 places ultimate accountability at the highest level

Accountability cannot be delegated.

The AE often carries accountability beyond their technical competence — this creates vulnerability if empowerment fails.



The Governance Triangle

The Responsible Tailings Facility Engineer:

- Day-to-day TSF integrity
- Deposition & water management
- Instrumentation monitoring
- Implementing EOR recommendations
- Escalating risks

Often conflated with production or metallurgical roles
Divided priorities dilute governance strength

*The RTFE must be technically suitable and empowered
- otherwise operational risk dominates safety.*



The Governance Triangle

The Engineer of Record:

- Design & review
- Construction oversight
- Performance evaluation
- Closure criteria guidance
- Independent technical judgement

Under GISTM Principle 9, professional judgement must override production pressure.

The EOR is the technical conscience of the facility – but only if empowered



What Does It Mean to *Hold a Role* in TSF Governance?

Responsibility as an Ethical and Professional Commitment

- In the GISTM, roles (AE, RTFE, EOR) represent formal entrustment of ethical, technical, and operational responsibility, not just job titles.
- “*Holding a role*” implies participation in a social contract of stewardship — protecting life, the environment, and public trust.
- Role embodiment is shaped not only by policy but also by organisational culture, resource constraints, and behavioural norms.
- There is often tension between the aspirational ideals of governance standards and the practical realities of role execution in industry.

Symbolic vs. Functional Roles

Symbolic Roles

- Formally assigned to meet external expectations
- Lack substantive authority and engagement
- Serve compliance purposes without influencing decisions
- Create disconnect between appearance and reality
- Undermine governance integrity through display over substance

Functional Roles

- Actively performed with real decision making
- Embedded within organisational processes
- Involve technical competence and ethical responsibility
- Supported by institutional structures enabling accountability
- Engage meaningfully with complexities of duties



Roles must be lived, not merely listed.

Empowerment



Responsibility

The obligation to perform a task in accordance with defined expectations, with consequences if expectations are not met. Typically flows upward in organisational hierarchies.



Accountability

The answerability for one's own performance and that of others whose work one directs. Cannot be delegated and remains with the individual who holds it.



Authority

The legitimate power to make decisions, assign responsibilities, and allocate resources. Flows downward in hierarchies and is essential for enabling action.

Source: International Council on Mining and Metals (ICMM) (2025) Tailings Management: Good Practice Guide. 2nd ed. London: ICMM.



Individuals with responsibility and accountability must have commensurate authority to act effectively. That alignment is what we refer to as empowerment.

Where role misalignment shows up in practice

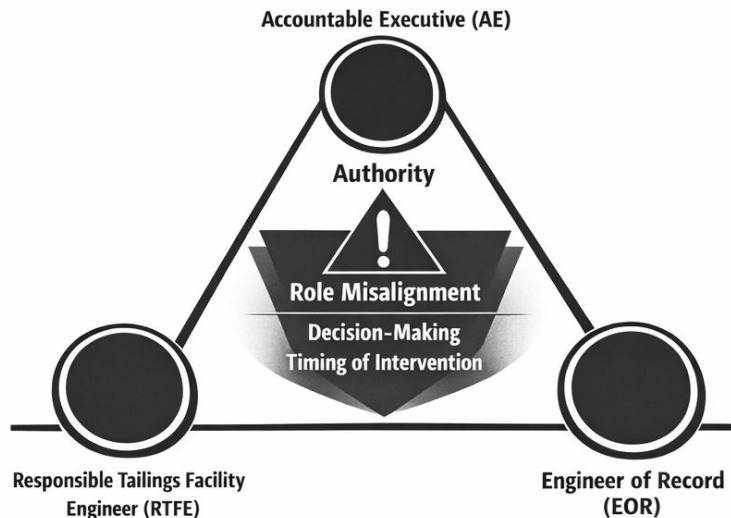
Governance systems rarely fail loudly - they erode quietly.

Misalignment is not just about *who* is responsible.

It is also about:

- **When** decisions are made
- **How quickly** risk can be escalated
- **Whether authority exists to act**

Misalignment is systemic - not personal failure.



Role Misalignment in TSF Governance

Type of Misalignment	Description	Illustrative Example
Ambiguous AE–EOR Accountability	AE retains ultimate accountability but fails to empower the EOR, leading to blurred decision-making.	AE delegates critical design changes to operations without consulting the EOR, who is then held responsible for a facility they did not meaningfully influence.
RTFE Appointed Without Technical Alignment	RTFE lacks geotechnical/structural expertise, weakening facility oversight.	RTFE from a metallurgical background prioritises production over TSF stability.

Role Misalignment in TSF Governance

Type of Misalignment	Description	Illustrative Example
Delegation Without Empowerment	Tasks are assigned without giving authority to act.	Junior engineer identifies a concern but cannot implement corrective measures. EOR expected to maintain oversight without a formal appointment.
Filtered Communication Through Management Layers	Risk information becomes diluted or delayed before reaching decision-makers.	EOR raises a slope-stability concern; internal reporting softens it to avoid production impacts.

Why the EoR may be left exposed



Why the EoR Is Structurally Vulnerable

- The EoR is appointed for independence, which is critical for technical integrity.
- The EoR sits outside the organisation, they hold no inherent authority within it.
- Their influence depends entirely on AE empowerment.
- Without that empowerment, the EoR may be held responsible for risks they had no mandate or authority to control.
- Engineers still carry a professional and moral duty under the Engineering Professions Act, regardless of organisational constraints.
- This vulnerability is structural, not competence-related.

ALARP as a fault line

Different Interpretations, Divergent Risk Thresholds

ALARP requires reducing risk “as low as reasonably practicable,” balancing mitigation effort with proportional benefit.

Different Perspectives		
AE	RTFE	EOR
Often framed through a corporate lens – Safety vs Financial/ Production trade-offs	Typically more reactive Focused on continuity and compliance under operational pressure.	Interprets ALARP as an <u>ethical and professional obligation</u> to minimise risk to life and environment, independent of commercial influence

These differing interpretations create inconsistent ALARP application across the governance system.

What this means for industry

Summary

The GISTM provides a robust governance framework, however, implementation remains uneven across industry.

Many organisations achieve procedural compliance yet fail to translate this into behavioural or cultural change.

Governance often becomes documentation-heavy but engagement-light, creating gaps between policy and practice.

Collaboration within the Governance Triangle is frequently weakened by hierarchical reporting instead of peer-level dialogue.

Under-resourcing and limited availability of competent professionals constrain governance capacity, especially at AE, RTFE, and EOR levels.

Without active role embodiment, GISTM risks becoming procedural reassurance rather than meaningful stewardship.



Advancing governance maturity requires shift from compliance to role embodiment. Progress demands more than formal procedures – it requires continuous learning, professional courage and empowerment.

Conclusion

What This Paper is NOT Saying

- Engineers should replace executives in decision-making
- Production pressures are illegitimate or unethical
- All current TSF governance is failing
- Accountability can be delegated away from leadership

What This Paper IS Saying

- Authority must match responsibility
- Technical judgement must reach decision-makers unfiltered
- Governance failure is structural, not personal