



RioTinto



Rio Tinto's Approach to Safe Tailings Management & Governance

Imran Gillani, Principal Advisor, Surface Mining Centre of Excellence

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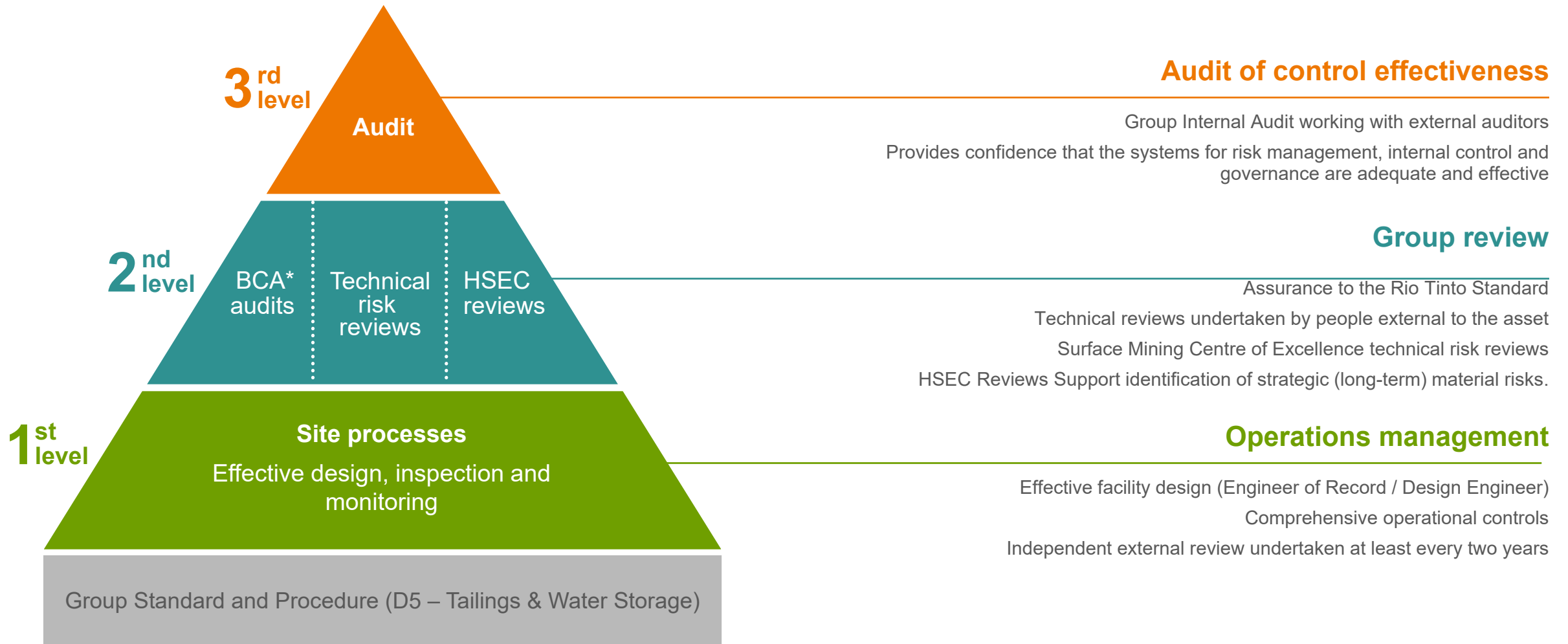
What have we learned from recent tailings failures?



- Good planning essential to establish resources for tailings management
- Designs must be reviewed by independent specialists
- Water management is critical
- **Accountabilities** of all parties must be well established
- Competent designers must be engaged
- Ongoing monitoring and **independent operational reviews** are critical to provide assurance
- **Management of Change** and risk assessment are essential for all significant changes

These learnings form the basis of Rio Tinto's tailings and water storage standard and associated guidance

Three levels of assurance for managing tailings & water storage





How do audits improve operations?



Rio Tinto's Tailings Management Standard – D5 Standard



- Mandatory standard applicable to all Rio Tinto managed tailings and water dams including closed sites – part of Rio Tinto HSEC assurance process
- Covers all development phases from planning, design, through construction, operation, closure and post-closure
- Safety standard as opposed to an Environmental standard
- Development of standard started prior to Mt. Polley failure in 2014
- D5 Standard is not entirely a technical standard but a management standard for technical risk reduction
- Its organisation is typical of any other management standard



- **Auditable** via internal audits and external independent operational reviews



D5 Standard Highlights



- Clear identification of “**accountable**” and “**responsible**” roles – Nominated Manager, Design Engineer, Independent Reviewer, etc.
- Emphasis on risk based approach in planning, design, construction, and operation
- Stress on **good documentation** – management plans, design and construction reports, operating manual, emergency response plan, etc.
- Focus on keeping **design engineer engaged during construction and operation** – design engineer to provide written confirmations of meeting design intent
- Mandated independent design reviews and independent operational reviews
- Management of Change process required for Design/Construction/Operation
- Heavy focus on effective monitoring and design verification

Alignment with ICMM



International Council on Mining and Metals (ICMM) Working Group formulated with participation from 23 companies

Position Statement

Key recognition statements:

- Tailings production is inherent to mining industry
- Management of change is integral to TSF safety
- TSF failures are unacceptable and **owners are accountable**
- **Science and expertise exist for preventing TSF failures**

Six elements of Tailings Storage Facilities governance framework, published by ICMM:

1. Accountability, Responsibility, and Competency;
2. Planning and Resourcing;
3. Risk Management;
4. Change Management;
5. Emergency Preparedness and Response;
6. Review and Assurance

All these six elements are specifically covered in Rio Tinto's tailings management standard



Fundamentals of Safe Tailings Management

Design

- Completed by a qualified design engineer
- Based on best practice and sufficient investigations
- Independently reviewed

Construction

- Supervised by a construction supervisor
- Must meet design intent
- Periodic reviews by design engineer

Operation

- Must meet design intent
- Monitoring and design verifications
- Design engineer engaged during operations
- Independently reviewed by a specialist(s)

Tailings Dam Safety





Questions and discussion



Imran Gillani

Principal Advisor – Tailings & Dams, Surface Mining Centre of Excellence

Rio Tinto

Email: imran.gillani@riotinto.com <http://www.riotinto.com>