

Tailings Storage Facilities

Our Requirements

Why is this important?

A failure of a Tailings Storage Facility is a material risk that could impact the safety of our people and local communities, cause social and environmental harm and have significant reputational and financial repercussions.

We must effectively manage this risk when we plan, design, construct, operate, maintain, conduct surveillance, close and make decisions regarding our Tailings Storage Facilities.

Who does this apply to?

- Anyone (internal and external to BHP) involved in the planning, design, construction, operation, maintenance, surveillance and closure of new, active, inactive or closed Tailings Storage Facilities (TSFs) at BHP operated sites and legacy assets.
- Anyone in assets or functions accountable for work that directly or indirectly affects TSFs at BHP operated sites and legacy assets.
- Anyone involved in investment and divestment decisions related to assets with TSFs at BHP operated sites and legacy assets.

Tailings storage facility (TSF) management

BHP is required to demonstrate conformance to the [Global Industry Standard for Tailings Management \(GISTM\)](#), as a condition of membership to the International Council of Mining and Metals (ICMM). For all new (in planning, design or construction phase), active, inactive or closed TSFs, develop and implement a management system that meets all of the principles and requirements of the six [GISTM](#) topic areas (listed below) and, in addition, meets the BHP specific requirements set out below, including for roles and responsibilities and independent assurance across the entirety of the mine life cycle. Where these requirements or local laws or regulation in relation to tailings management require a higher standard than the [GISTM](#), apply that higher standard.

The six GISTM topic areas

The [GISTM](#) includes 15 principles and 77 requirements in the following topic areas:

- Topic I: Affected Communities.
- Topic II: Integrated Knowledge Base.
- Topic III: Design, Construction, Operation and Monitoring of the Tailings Facility.
- Topic IV: Management and Governance.
- Topic V: Emergency Response and Long-Term Recovery.
- Topic VI: Public Disclosure and Access to Information.

Additional BHP specific requirements

- Do not use TSFs for water storage unless:
 - it is part of normal safe operation of the TSF in accordance with the design intent; or
 - it is risk assessed and approved.
- Conduct a dam design in accordance with the [GISTM](#) (including obtaining the approvals specified therein) for each new TSF, and maintain an up-to-date dam design assessment for each existing (including closed) TSF, that:
 - minimises the operational complexity and on-going maintenance requirements of the dam;
 - incorporates BHP's mandatory minimum performance requirements for closure and complies with [Our Requirements for Environment and Climate Change](#), and other federal, state and license requirements in the ultimate design requirements.
- Make sure TSFs are designed to not accumulate water above the level necessary for normal safe operation.
- Make sure that critical and non-critical controls exist that achieve the following minimum key control outcome areas:
 - Dam Integrity (integrity of site selection, facility type selection, design and construction);
 - Operation, Maintenance and Surveillance practices; and
 - Emergency Management.
- Make sure business planning processes comply with BHP's mandatory minimum performance requirements for corporate alignment planning:
 - include a plan and budget for resources, capital and operating expenditure for the safe construction, operation and management and closure of TSFs.
- Get approval for the management plan and manuals and updates to these from the Dam Owner.
- Maintain data and records related to design, construction, operation, deposition, surveillance and maintenance.
- Record the industry dam codes or guidelines used for TSF management and the justification for their selection.
- If industry dam codes or guidelines provide conflicting guidance, follow the more conservative guidance or record justification for not doing so.

- As far as practicable, separate people from areas that could be impacted by TSF failure.
- Develop an emergency response plan that is proportionate to the potential impact of TSF failure and includes actions and responsibilities.
- For TSF failure events that could impact permanent communities or occupied mine infrastructure:
 - Have monitoring and emergency warning systems to enable evacuation under the identified dam break and inundation models.
 - Establish, maintain, rehearse, record and improve evacuation procedures.

Roles and responsibilities (does not replace key roles and functions mentioned in the [GISTM](#))

- Make sure there is an Accountable Executive for each TSF (one or more Accountable Executives may be designated within BHP).
- The Accountable Executive:
 - must be a BHP executive;
 - is directly answerable to the CEO on matters related to the TSF, the [GISTM](#) and this Our Requirements;
 - communicates with the Board of Directors on matters related to the TSF, the [GISTM](#) and this Our Requirements;
 - is accountable for the safety of the assigned TSF and for minimising the social and environmental consequences of a potential TSF failure;
 - may delegate responsibilities but not accountability.
- Make sure there is a Dam Owner for each TSF.
- The Dam Owner:
 - must be an internal BHP person at an organisational level with sufficient authority and control over the end-to-end management process of the TSF;
 - is accountable for making sure resources, processes and systems are in place to manage the TSF proportionate to its complexity and risk;
 - must conduct verification activities to satisfy themselves of the overall integrity of the TSF.
- Make sure there is a Responsible Tailings Facility Engineer (RTFE) for each TSF (previously referred to as a Responsible Dam Engineer). If multiple RTFEs are required for a TSF due to technical or operational complexity, make sure their responsibilities are clearly defined, coordinated and integrated.
- Each RTFE:
 - must have the experience, skills and knowledge to oversee the risk and complexity of the TSF;
 - is accountable for coordination of management and inspection activities for the safe design, construction, operation, maintenance and closure of the TSF;
 - interacts with the Accountable Executive or delegate, Dam Owner, Risk Owner (if separate) and the Engineer of Record on all significant TSF management activities and informs the Dam Owner of the status of the TSF;
 - makes sure that the TSF data, management plan, manuals, and other records are kept current.
- Appoint, and get approval for, an Engineer of Record (EOR) and a Deputy EOR for each TSF.
- The EOR and Deputy EOR:
 - must be external (i.e. non-BHP), registered or qualified professional engineers in good standing supported by an engineering firm;
 - must have capability in dam design, construction, operation and performance evaluation proportionate to the risk and complexity of the TSF; at least 10 years' industry experience; and thorough knowledge of the latest techniques and applicable local and international regulations and standards;
 - make sure the TSF is safe by being designed, constructed, operated, maintained and/or closed in line with regulations, statutes and standards and best applicable industry dam guidelines or codes;
 - design, or endorse designs, of components of the TSF that could affect its integrity;

- advise the Dam Owner and RTFE(s) of risks and risk reduction actions identified and/or required to be implemented;
- conduct an annual dam safety inspection.

Independent external assurance

- For each TSF, schedule, implement and work manage independent Dam Safety Reviews that meet best applicable industry dam codes or guidelines for frequency and detail, based on the operating phase, risk and complexity of the TSF.
- Additionally, for each active, inactive or closed TSF, schedule, implement and work manage reviews:
 - by a multidisciplinary review board with at least two approved external and independent technical reviewers for TSFs with a [GISTM](#) classification of very high or extreme every year or when there is a material change to design, construction, operation or failure consequence;
 - by an approved senior external and independent technical reviewer for TSFs with a [GITSM](#) classification of low, significant, or high every 2 years or when there is a material change to design, construction, operation or failure consequence, unless frequency of review is otherwise approved by the Accountable Executive;
 - to review the adequacy of planning, design, construction, operation, surveillance, maintenance, emergency preparedness or closure, as appropriate to the status of the TSF;
 - to identify and recommend actions to reduce risks and improve operation, and verify that actions have been appropriately completed.
- Independent technical reviewers must:
 - be external (i.e. non-BHP) and independent of design or operational work(s) conducted within the last five years associated with the specific TSF;
 - have at least 20 years' experience in the disciplines representative of the high-risk area(s) for the specific TSF; and
 - not be professionally associated with the incumbent EOR or Deputy EOR of the specific TSF.