SA ENERGY COAL

Risk Management Process Training

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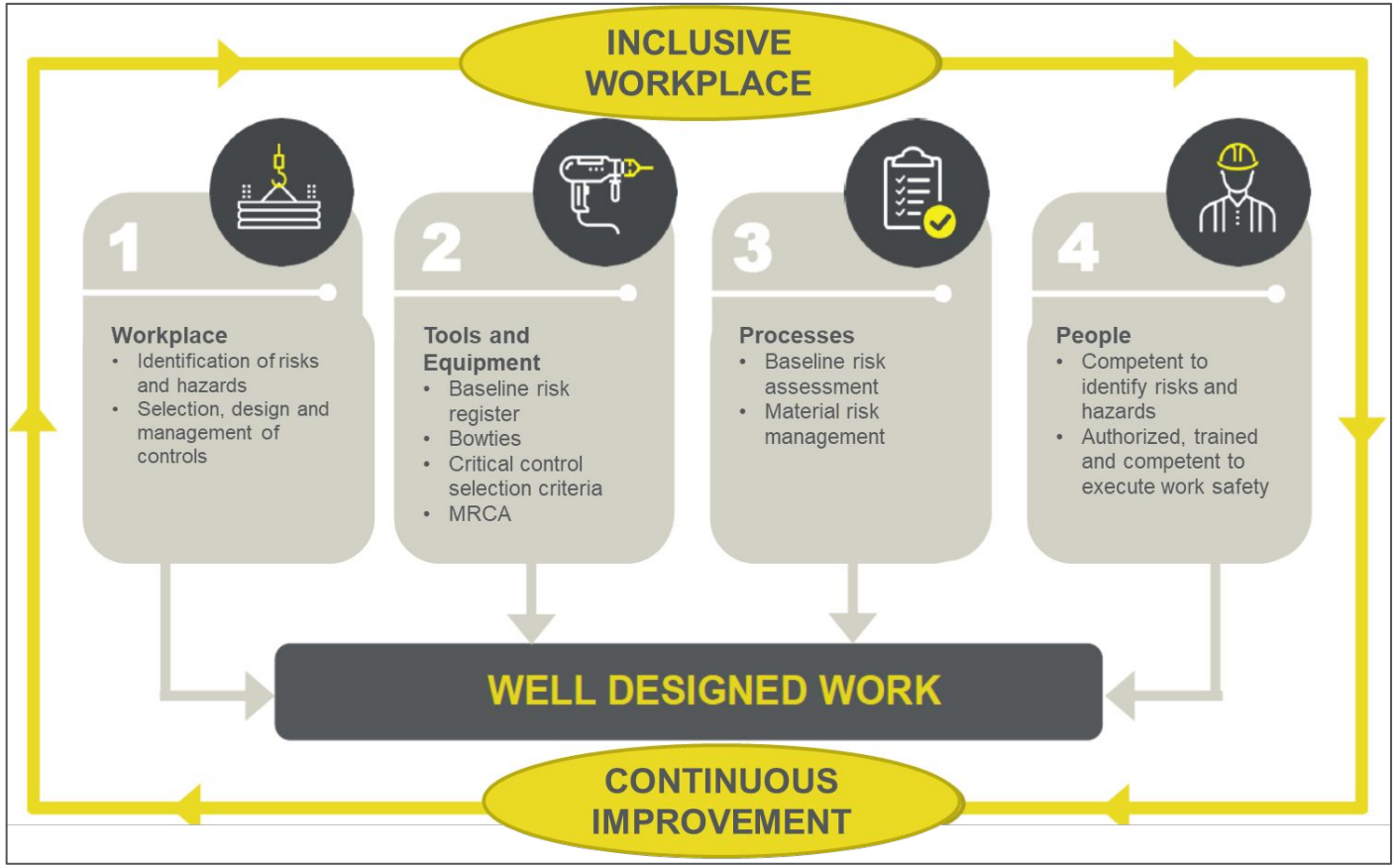
OVERVIEW

Risk management is one of the key processes in the Care Strategy which supports well designed work. Risk understanding and tolerance for risk are therefore key considerations in all decision-making processes.

The care strategy provides the well designed work elements which provide guidance for managing risks in our organisation

- Providing a safe workplace
- Providing the right tools & equipment
- Identifying the correct processes
- Ensuring competence of people to influence correct decisions & behaviour

This training will provide direction and tools to the SAEC Risk and Control Owners to ensure a consistent and effective approach to material risk management as well as single fatality risks across the business and to ensure compliance to the performance requirements set out in the South32 Material Risk Management Standard.



RISK MANAGEMENT DEFINITIONS

Term	Definition
Baseline Risk Registers	A repository of all risks at all levels of the organisation.
Bowtie	A risk analysis tool to define and record the linkages between risk events, causes, controls and impacts for a risk event.
Control	An object, action or system that reduce the likelihood and/or impact of a risk. A **proactive control** is a control which is used to manage the causes and thereby reduce the likelihood of occurrence of the material risk. A **reactive control** is a control which will reduce the impacts which flow from a material risk.
Critical control	An object, action or system that is independent and that actively prevents the initiation of the risk event and/or prevents the direct escalation of the event. There may be more than one critical control for a material risk. Elements to be considered in determining a critical control: • The only barrier/layer of protection available for the occurrence of the event or the impact exposure. • Used to prevent multiple causes/impacts. • Is independent from other controls. • A single activity. • Control is further along the hierarchy of controls than other controls under consideration. • Used to prevent escalation of the event.
Critical Control Verification	A task executed to provide assurance that critical controls are in place and accurately executed in line with the performance standards.
Critical Task Observation / Risk Control Verification	A physical check that control objects are in place or control activities have been completed and is conducted by a person other than those conducting the work.
Hazard	Something that has the potential to cause harm, ill health or injury, or damage to property, plant or the environment.

RISK MANAGEMENT DEFINITIONS

Term	Definition
Hierarchy of Controls	A ranking of controls according to their level of protection and reliability. The controls ranked from highest level of protection and reliability: • Elimination; • Substitution; • Engineering; • Administrative; • Personal Protective Equipment.
High Risk Work	The numerical rating applied to a risk, calculated as the product of the highest impact factor and a likelihood factor (Appendix 1). It represents the level of residual risk associated with a material risk after taking into account the effectiveness of the proactive and reactive controls. In proposals of future work and projects where there are no “existing” controls in place, the reactive controls planned and budgeted for must be assumed when selecting the ‘expected’ impact
Intolerable Risk	Risks with an RRR ≥ 90 or MRCA assessed as ‘Requires Significant Improvement’
Maximum Potential Impact (MPI)	The impact sustained by South32 in the plausible worst case scenario for that risk. All impact types in the impact table must be assessed. In a plausible worst case scenario, all risk controls ‘including insurance and hedging contracts’ are assumed to be ineffective.
Residual Risk Rating (RRR)	The numerical rating applied to a risk, calculated as the product of the highest impact factor and a likelihood factor (Appendix 1). It represents the level of residual risk associated with a material risk after taking into account the effectiveness of the proactive and reactive controls. In proposals of future work and projects where there are no “existing” controls in place, the reactive controls planned and budgeted for must be assumed when selecting the ‘expected’ impact
Risk or Risk Event	An event that describes the potential or uncertain occurrence of a particular set of circumstances that has a negative and/or positive impact on the achievement of Our Purpose, strategy and business plans. The risk should be described so that it is differentiated from associated impacts, causes or a control.

RISK MANAGEMENT ACCOUNTABILITIES

Risk Owner

- Appoint Critical Control Owners to critical controls for material risks.
- Ensure the accuracy, quality and timely completion of all material risk data and assessment information.
- Ensure critical controls are accurately identified, implemented and assessed; and when applicable remediate.
- Perform the Material Risk Control Assessment (MRCA) rating; and when applicable remediate.
- Consider whether a risk event requires a stand-alone business continuity plan to support the execution of reactive controls.

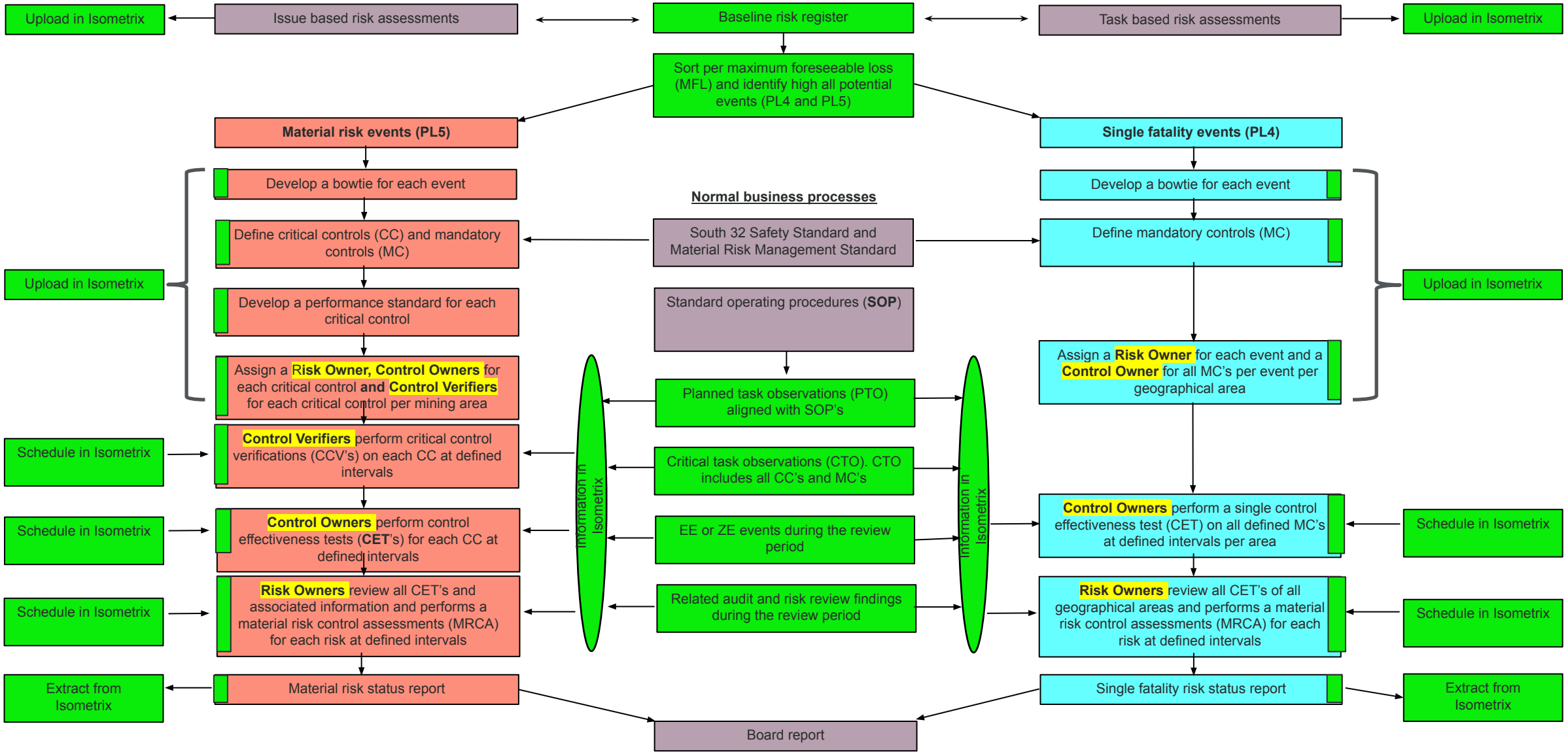
Control Owner

- Ensure critical controls owned have a specific design, operating and monitoring criteria.
- Ensure critical controls operate as designed by monitoring their effectiveness over time.
- Perform the Control Effectiveness Test to monitor the effectiveness of the critical control.
- Create and close-out remediation plans when controls are assessed as deficient.

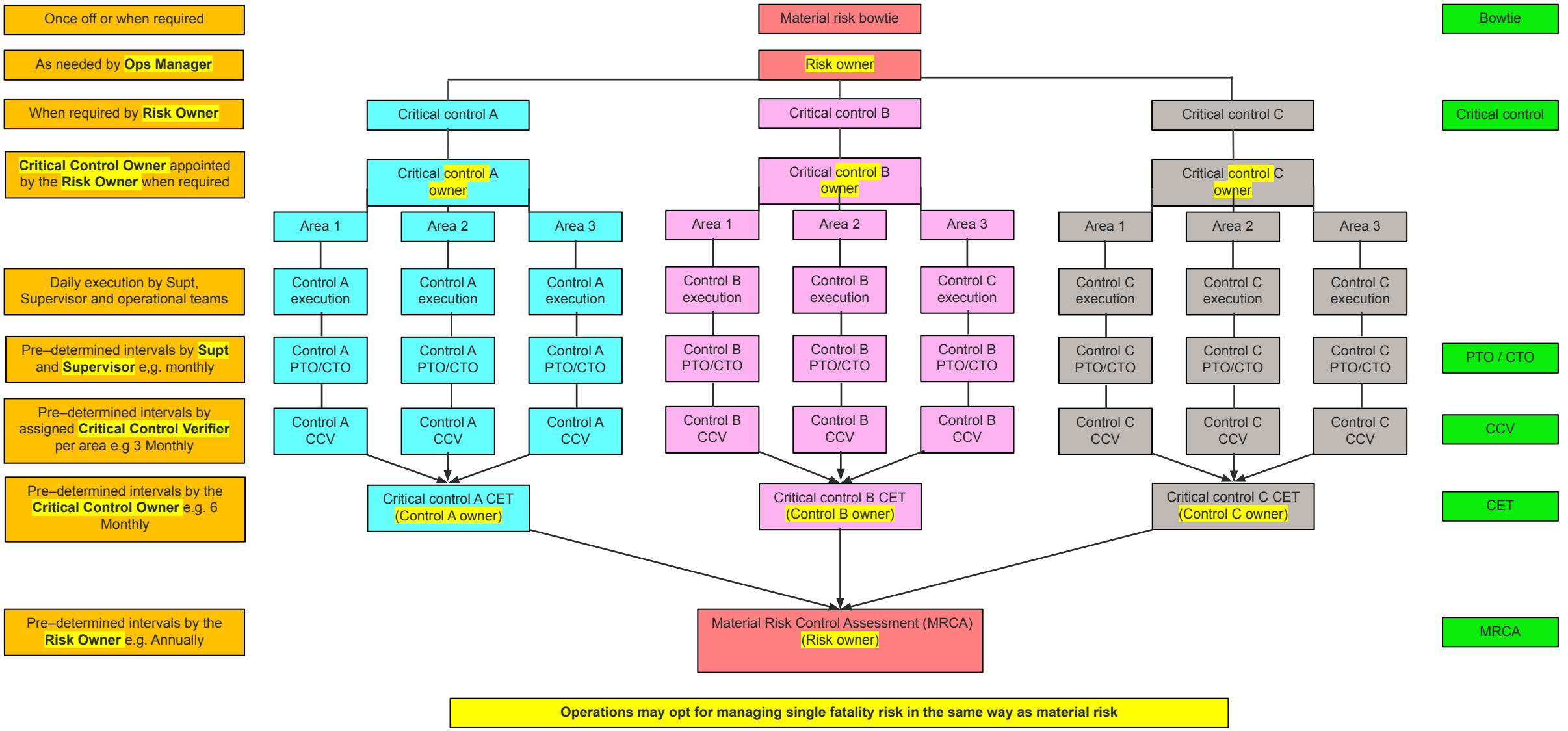
Risk Support / Function

- Provide coaching and support to enhance quality of material risk management data and assessments.
- Provide reporting (monthly and biannual, as agreed) to Management and Group Risk and Assurance/RAC/SUSCO.
- Maintain and govern risk management data capture and reporting tools.
- Maintain and govern material risk library (standardised risk and controls) if applicable.
- Govern quality of material risk and critical control master data.
- Govern adherence to Material Risk Standard and material risk management metrics.

MATERIAL AND SINGLE FATALITY RISK MANAGEMENT

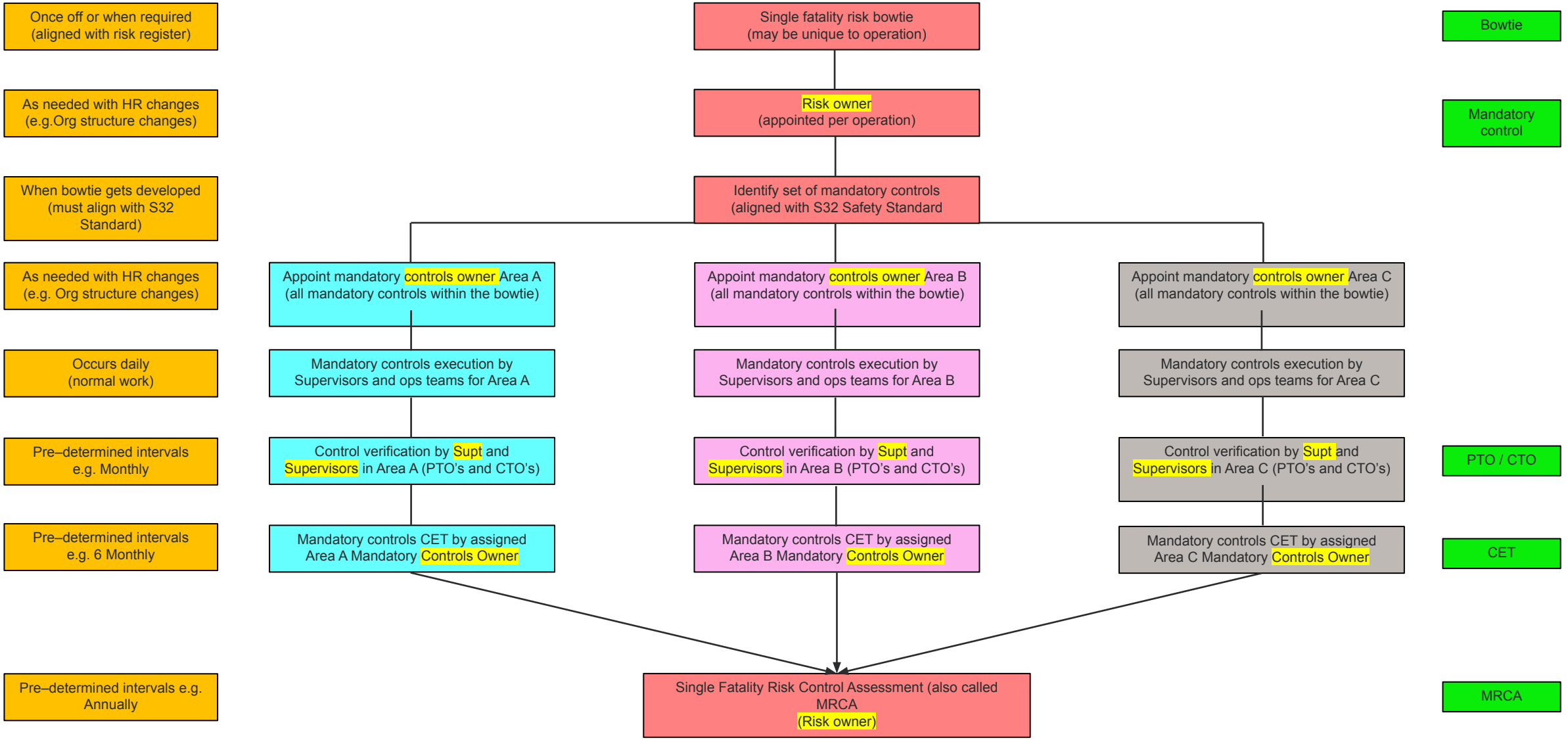


MATERIAL RISK MANAGEMENT PROCESS



Operations may opt for managing single fatality risk in the same way as material risk

SINGLE FATALITY RISK MANAGEMENT PROCESS

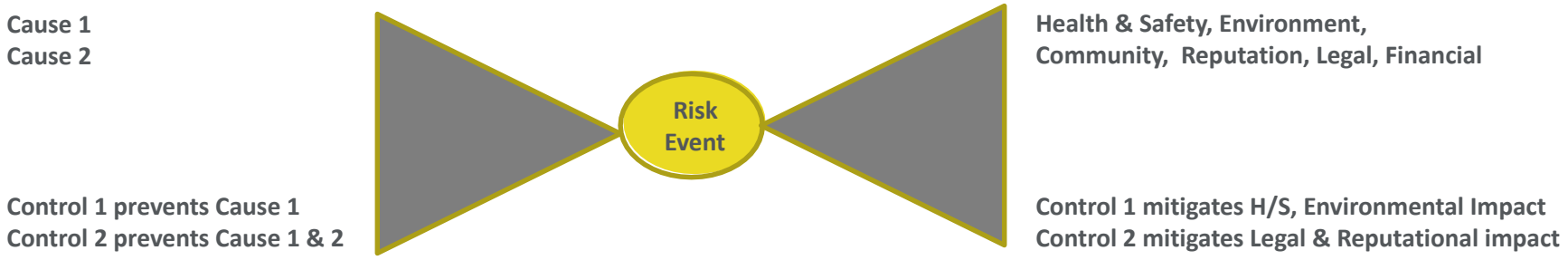


BASELINE RISK ASSESSMENT

- The baseline risk register documents all risks identified within the organisation
- When new risks are captured on the baseline risk register, the Risk Owner performs an initial assessment to determine the MPI.
- A risk assessment must be prepared by a team with experience and understanding of the proposed risk
- The risk owner defines the purpose, scope, causes, impact rating of the highest impact type, MPI & RRR of the risk, assigns controls to the risk and improvement actions are registered and workflows to the relevant action owners
- **If the risk meets MPI materiality criteria it will workflow to the Bowtie risk analysis module. Material for South32 is MPI ≥ level 5; and 9 common fatality risks (ref: Safety Standard v6).**
- **Lower level risks** that are **managed by operational and functional** risk management processes must be excluded from the Bowtie risk assessment process.

BOWTIE RISK ASSESSMENT METHODOLOGY

- Clearly define the **scope**
  - Detailed description of the risk event
  - Clear boundaries of what has been included and excluded from the risk, where does it start and stop? (E.g. Include: Vehicle collision in the pit and exclude vehicle collision in the processing plant)
- Identify **causes** for this risk event
  - Causes give rise to the material event as described in the scope
  - Ineffective controls should not be listed as causes
- Identify **proactive controls** to prevent the cause
  - Proactive controls must be existing controls
  - Future controls must be listed as improvement plans
- Identify **impacts** of this risk event
  - Consider all impact types as per the Impact table in the Material Risk Management Standard
- Identify **reactive controls** to reduce the severity of the event
  - Reactive controls must be existing controls
  - Future controls must be listed as improvement plans



SELECTING CRITICAL CONTROLS AND CONTROL OWNERS

When selecting critical controls, the risk owner would:

- List all existing proactive & reactive controls
- Apply the Critical Control Selection Criteria to each of the controls to determine which would meet the materiality criteria
- Once the Risk Owner has selected the possible critical controls, it is his/her responsibility to make a decision on the final critical controls (typically not more than 3 or 4)
- In making this selection, the Risk Owner may consult the Control Owners, Subject Matter Experts or benchmark similar risks and associated controls/critical controls
- The Risk Owner appoints a Control Owner based on expertise/area of responsibility

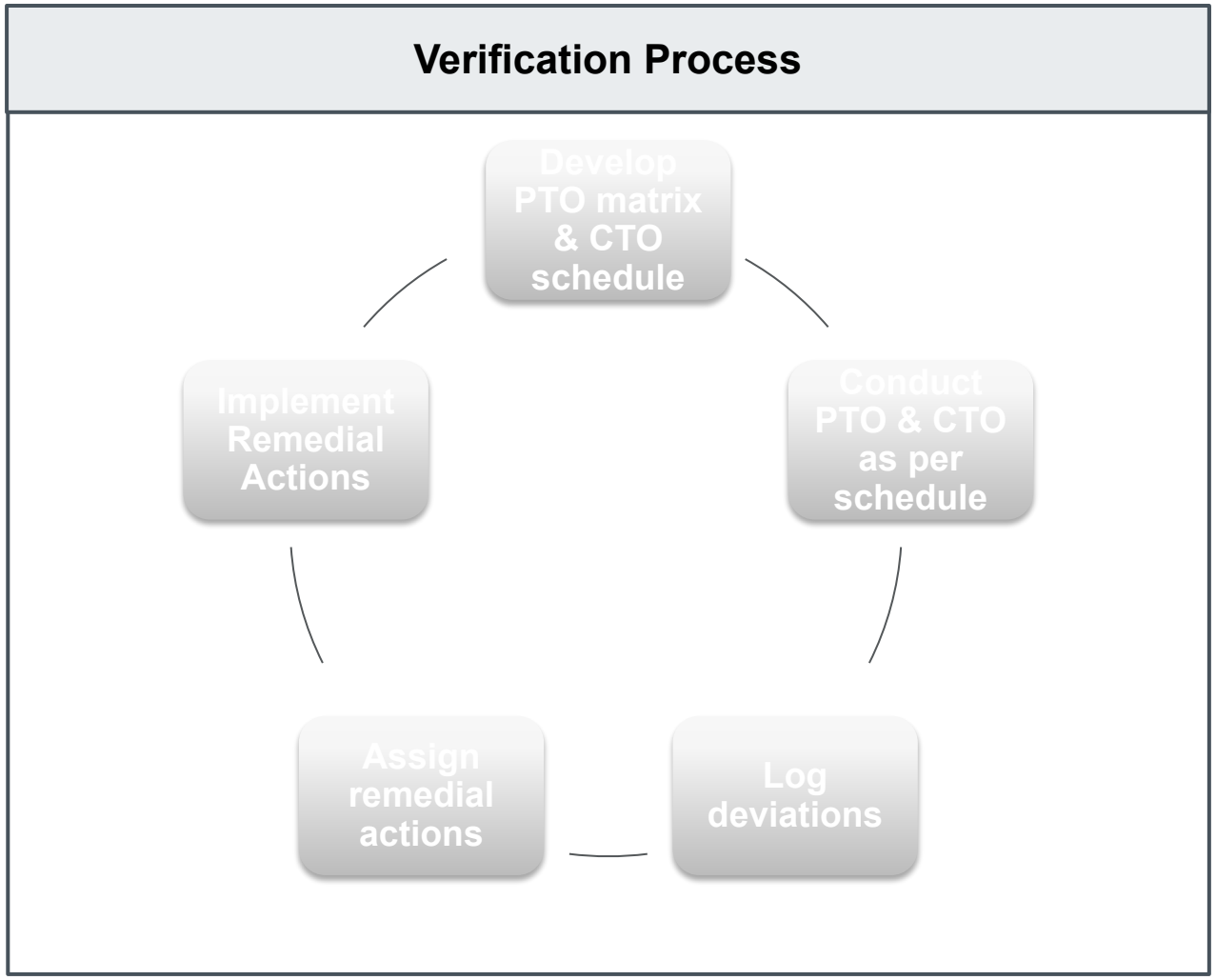
SELECTING CRITICAL CONTROLS AND OWNERS

An object, action or system that is independent and that actively prevents the initiation of the risk event and/or prevents the direct escalation of the event. There may be more than one critical control for a material risk. Elements to be considered in determining a critical control:

1. • The only barrier/layer of protection available for the occurrence of the event or the impact exposure.
2. • Used to prevent or mitigate multiple causes/impacts.
3. • Is independent from other controls.
4. • A single activity.
5. • Control is further along the hierarchy of controls than other controls under consideration.
6. • Used to detect or prevent escalation of the event.

Once Critical Controls have been selected, Risk owners Identify Control Owners based on the area of expertise or area of responsibility

RISK IDENTIFICATION AND VERIFICATION PROCESS



1. **Risk Identification**
   - From the baseline risk register, identify material and single fatality risks
   - Material risks (PL5+ and 9 common fatality risks specified in the Safety Standard) managed in IsoMetrix as per S32 Material Risk Standard
2. **Process & Control Design**
   - Develop bowtie risk assessments for all material risks and single fatality risks
   - Complete Issue Based Risk Assessment, draft COP/SOP with Issue Base Risk Assessment as input inclusive of PTO/CTO
   - Identify Risk Owner, Control Owners and Control Verifiers for each risk and critical control respectively
3. **Verification**
   - Schedule CCV's in IsoMetrix as per frequency specified in the performance standard
   - Develop site specific PTO matrix / matrices and CTO schedule
   - Verify critical control effectiveness using relevant CCV templates
   - Verify process and controls through CTO's as per site schedule
   - Verify controls through PTO's as per site PTO Matrix
   - Critical control verification as scheduled in Isometrix
   - Conduct focused VCL's (including high risk work verification)
   - SAEC Leadership Risk Reviews as per schedule

CONTROL EFFECTIVENESS TESTS

Control Effectiveness Test

A control effectiveness test is conducted to provide assurance that a critical control is in place and effective (operating as designed) in managing the risk.

Key focus areas of the effectiveness test include:

- Review of controlled documents which support critical controls (SOP/Standards)
- Completion of Critical Control Verification and CTO/PTO
- Critical control failures and significant events
- Internal and external audit findings
- Management reviews
- The control owner may also want to consider Industry alerts

Assess and record the effectiveness of each identified critical control periodically and at least annually. Consider the reliability of the control and the speed with which it can change or fail when determining the frequency of monitoring. An Adhoc CET should be performed if any of the above factors indicate a critical control failure. In this instance, the CET must be rated as deficient and an action plan put in place.

Some practical considerations when completing a CET include:

- Each question is rated as a pass or fail and must be justified with adequate comments to support the rating. This includes uploading supporting documentation or providing relevant document references and providing details of CCV, CTO/PTO and documents reviewed.
- An effective and achievable action plan is identified to address critical controls rated as deficient.

MATERIAL RISK CONTROL ASSESSMENTS

The material risk control assessment is completed once the Risk Owner has read / understood the CETs provided by Control Owners for each critical control.

The MRCA must be completed **at least annually**. However the following events will also trigger completion:

- When a critical control has failed and
- Change to the risk
- When an action plan has been identified or actioned

Some practical considerations when completing an MRCA

- When completing a review of the effectiveness tests, the Risk Owner should consider the following:
- Are they adequate and relevant to support ratings?
- For any issues raised and critical control failures, have appropriate action plans been raised and actioned?
- Is there clear document references or supporting documentation

Each material risk must be assessed and a rating given (Well controlled, Requires some improvement or requires significant improvement). The material risk control assessment must consider the critical control operating assessment results, actual control failure or a control failure that resulted in a similar material risk, internal audit findings, external audit findings and management reviews. Assessments must have sufficient detail to be executed reliably over time. Its purpose is to assess the level of control and tolerability of a material risk. All ratings must be justified.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