CRITICAL CONTROL MANAGEMENT SERIES

CCM-05 · Critical Control Management Implementation Toolkit

Product Overview

For: Businesses with fatal or catastrophic risks, and whoever runs WHS or risk in them

Version 1.0 · 8 November 2026

The editable bowties, registers, standards and verification tools to run critical control management day to day.

Training builds understanding; the toolkit is what people use afterwards. It contains the tools needed to run critical control management: identifying critical risks, building bowties, selecting and documenting critical controls, verifying them in the field and responding when one fails, organised into four stages.

An implementation guide explains how the tools fit together, the order to introduce them in, why to start with one critical risk rather than all of them at once, and how to adapt the tools to your organisation's existing risk framework. It carries one critical risk, mobile plant and pedestrian interaction, through every tool.

With the toolkit in place, your business can

- Identify and prioritise critical risks consistently
- Build bowties and select critical controls against clear criteria
- Document each critical control with a performance standard and a named owner
- Verify critical controls in the field on a planned schedule
- Respond consistently when a critical control is missing or fails
- Report critical control performance, and track corrective actions to completion

What is in the toolkit

Stage	Tools
Identify	I1 Critical risk identification worksheet; I2 Critical risk register (Excel); I3 Bowtie analysis template; I4 Bowtie workshop facilitation guide
Define	D1 Critical control selection worksheet; D2 Critical control register (Excel); D3 Critical control performance standard template; D4 Critical control owner accountabilities
Verify	V1 Verification program planner (Excel); V2 Field verification checklist template; V3 Worker critical control checklist template; V4 Verification results summary
Respond and improve	R1 Control failure response guide; R2 Control failure report and investigation record; R3 Corrective action tracker (Excel); R4 Critical control performance report template; R5 Review triggers
Guide	How the tools fit together; why to start with one critical risk; fitting them to your own risk framework; a twelve-month sequence; tool-by-tool notes; a worked example that carries one critical risk through every tool

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Folders

Folder	Contents
01_START_HERE	Read Me First, Product Overview, Permitted Use Terms, Version Information
02_IMPLEMENTATION_GUIDE	Implementation Guide (.docx and PDF), with the twelve-month sequence and the worked example
03_IDENTIFY	I1 Critical Risk Identification Worksheet, I2 Critical Risk Register (.xlsx), I3 Bowtie Analysis Template, I4 Bowtie Workshop Facilitation Guide
04_DEFINE	D1 Critical Control Selection Worksheet, D2 Critical Control Register (.xlsx), D3 Critical Control Performance Standard Template, D4 Critical Control Owner Accountabilities
05_VERIFY	V1 Verification Program Planner (.xlsx), V2 Field Verification Checklist Template, V3 Worker Critical Control Checklist Template, V4 Verification Results Summary
06_RESPOND_AND_IMPROVE	R1 Control Failure Response Guide, R2 Control Failure Report and Investigation Record, R3 Corrective Action Tracker (.xlsx), R4 Critical Control Performance Report Template, R5 Review Triggers

You will need

- Microsoft Word and Excel, or compatible software
- Someone with authority to introduce the tools into your risk management system

Document control

Item	Detail
Product	CCM-05 Critical Control Management Implementation Toolkit
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Implementation Guide

How the seventeen tools fit together, the order to introduce them, why to start with one critical risk, how to fit them to your own risk framework, and one critical risk carried through every tool.

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1. What this toolkit is

Training builds understanding; the toolkit is what people use afterwards. It contains the tools needed to run critical control management: identifying critical risks, building bowties, selecting and documenting critical controls, verifying them in the field and responding when one fails, organised into four stages.

An implementation guide explains how the tools fit together, the order to introduce them in, why to start with one critical risk rather than all of them at once, and how to adapt the tools to your organisation's existing risk framework. It carries one critical risk, mobile plant and pedestrian interaction, through every tool.

It is written for businesses with fatal or catastrophic risks and for whoever runs WHS or risk in them: often an operations manager, a WHS adviser or a supervisor who does it alongside another job. It is not a training package, a policy or a legal compliance checklist. It is the set of working documents that let a business find its critical risks, select the few controls that must not fail, write down what 'working' means for each, prove they are working, and act the same way every time one is not.

Code	Stage	Tool	Format
I1	Identify	Critical risk identification worksheet	DOCX
I2	Identify	Critical risk register	XLSX
I3	Identify	Bowtie analysis template	DOCX
I4	Identify	Bowtie workshop facilitation guide	DOCX
D1	Define	Critical control selection worksheet	DOCX
D2	Define	Critical control register	XLSX
D3	Define	Critical control performance standard template	DOCX
D4	Define	Critical control owner accountabilities	DOCX
V1	Verify	Verification program planner	XLSX
V2	Verify	Field verification checklist template	DOCX
V3	Verify	Worker critical control checklist template	DOCX
V4	Verify	Verification results summary	DOCX
R1	Respond and improve	Control failure response guide	DOCX
R2	Respond and improve	Control failure report and investigation record	DOCX
R3	Respond and improve	Corrective action tracker	XLSX
R4	Respond and improve	Critical control performance report template	DOCX
R5	Respond and improve	Review triggers	DOCX

With the toolkit in place, a business can:

- Identify and prioritise critical risks consistently
- Build bowties and select critical controls against clear criteria
- Document each critical control with a performance standard and a named owner
- Verify critical controls in the field on a planned schedule
- Respond consistently when a critical control is missing or fails
- Report critical control performance, and track corrective actions to completion

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2. The method on one page

Critical risk management identifies the critical risks and maps them with bowties. Critical control management makes sure the controls on those bowties hold.

Non-negotiables

1. Critical risks are written as specific unwanted events, consequence first, and prioritised.
2. Bowties are built with the people who do the work, and walked in the field before they are trusted.
3. First 'is it a control?', then 'is it critical?'. Documents, forms, training records and monitoring without action are not controls.
4. Critical controls are few. Mitigating controls can be critical, especially when they are the last line of defence.
5. Every critical control has a performance standard and a named owner with the authority, time and resources to keep it working.
6. Verification is proof, not assumption: in the field, on a schedule, rated Pass, Non-conformance or Fail.
7. A failed critical control is a high potential incident, even if nobody was hurt: stop, report, escalate, investigate and tell the business.
8. A corrective action closes only when the control has been verified again.
9. Verification results are reported as a leading indicator, alongside incident data.

Key definitions

Term	Definition
Control	An act, object, or technical system that actively prevents or mitigates the risk of an unwanted event.
Critical risk	One whose worst credible outcome is a fatality, serious injury or catastrophic event.
Critical control	A control that is crucial to preventing a critical risk event or limiting its consequences, so that its absence or failure would significantly increase the risk despite other controls being in place.
Critical control performance standard	A clear and practical set of rules that describe how a critical control must be implemented, maintained and verified.
Critical control verification	The process of regularly checking that critical controls exist, are in place and in good condition, are functioning as designed, are being used properly, and are not being bypassed or failing silently.
Control owner	Responsible for the day-to-day implementation, monitoring, and verification of controls designed to mitigate risks.
Risk owner	Accountable for understanding, managing, and reporting on a particular risk.

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Rating a check or verification

Rating	What it means	Response
Pass	In place and effective	Review against other metrics (hazards, incidents) to ensure quality of pass results.
Non-conformance	In place, not effective	Log an action for corrective measures and establish temporary controls, such as barricading, if necessary.
Fail	Not in place or failed	Immediate actions like job stoppage and incident reporting.

A critical control failure found in a check, even with nobody hurt, is a high potential incident. CCV results are a leading indicator: report them alongside, not instead of, incident data.

What critical control management is not

Not	Why
A long list of generic controls	More controls do not mean more protection. CCM is about the few that matter most.
A safety procedure or policy	Written documents alone are not controls. If no one is checking a control's function, it is not managed.
An audit or inspection program	CCM needs specific verification activities that test the function of each critical control, not broad compliance checks.
A visible leadership program	Leadership visibility is valuable, but it does not replace structured technical verification or clear control ownership.
A compliance activity	Treated as box-ticking, CCM loses its power.
A duplicate of maintenance inspections	Routine maintenance is not critical control verification. CCM is about assurance of control effectiveness, not only the condition of assets.
A lagging indicator	By the time an incident shows up, it is too late. CCM is a leading practice that finds weak points before something goes wrong.

3. How the tools fit together

The tools follow four stages. In practice the business sets up a few things first, then works through the stages for one critical risk at a time, and the last stage loops back to the first.

Stage	What it is for
Identify	Find the critical risks, prioritise them, and map the first one with a bowtie built with the people who do the work
Define	Select the few critical controls against clear criteria, write down what 'working' means for each, and give each a named owner
Verify	Prove the critical controls are working, in the field, on a planned schedule, and give workers a check they do before every task
Respond and improve	Act the same way every time a critical control is missing or fails, fix it and prove the fix, report performance, and review

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Stage	Tools
Set up	R1 the response rules and R3 the action tracker, so a failure has somewhere to go; D4 the owner roles; the organisation settings in the guide
Identify	I1 critical risk identification; I2 critical risk register; I4 workshop guide and I3 bowtie for the first critical risk
Define	D1 selection; D2 critical control register; D3 a performance standard for each; D4 owners named and accepted
Verify	V1 the program; V2 field verification; V3 the worker checklist; V4 the monthly summary
Respond and improve	R1 response; R2 failure report and investigation; R3 corrective actions; R4 performance report; R5 review triggers; back to I3

The tools are linked by reference numbers. A critical risk found in I1 becomes a row in I2 (CR-01) and gets a bowtie (I3). Its critical controls, selected with D1, are rows in D2 (CC-01.1), each with a performance standard (D3) and an owner (D4). Each is verified with V2 on the V1 schedule (VP-01); the result goes in the V1 results log and on D2. A result that is not a Pass goes through R1; a Fail gets an R2 report (R2-03); every action goes in R3 (CA-07) and closes only when the control passes again. V4 and R4 report the results; R5 sends anything that has changed back to the bowtie.

NOTE The Excel tools are separate workbooks, so they do not update each other. Copy the references across as you go, or join them in your own system.

4. Start with one critical risk

The most common way to fail at critical control management is to start everywhere at once.

- A bowtie built properly, with the people who do the work, takes a morning, and its performance standards and verification take weeks more. Doing that for one critical risk is achievable; doing it for ten at once means ten half-finished bowties and no verification.
- The first critical risk teaches the business the method: how to run the workshop, how hard selection is, how long a standard takes, what a real verification finds. The second goes faster and better.
- Verification is where the value is. One critical risk with four verified critical controls protects people; ten bowties on a shelf do not.
- Workers and supervisors judge the program by the first one. If it changes something real on the floor, the next one gets their time.
- Start with the highest priority critical risk in I2. Take it all the way, from bowtie to the first month of verification results, before starting the second.

SAY *We are going to do one critical risk properly before we start the next. By the end of month six it will have verified critical controls, not just a bowtie.*

Expect the first verifications to find failures, although nothing in the workplace has changed. A control that was assumed to work and has never been checked is now being checked. Tell the owners before it happens: every early Fail is a free kick, found before anyone was hurt.

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5. Fitting the toolkit to your existing risk framework

Critical control management sits inside your risk management, not beside it. Keep what works; add what is missing.

Where	What to do
One register, linked	Keep your general risk register. I2 holds only the critical risks; give each the same reference in both, and record in your register that the risk is managed through its bowtie and critical controls.
Your risk matrix	Use your own matrix for everything else. I2 decides 'critical' from the worst credible consequence alone: a fatality, serious injury or catastrophic event. A rare catastrophe stays a critical risk however its likelihood is rated.
Existing bowties	Do not start again. Take each through the I3 validation questions and D1: most old bowties have vague events and documents listed as controls. Then walk them in the field.
Existing standards or procedures	Map what you have onto the nine parts of D3. Most procedures cover performance requirements and training; few cover failure modes, verification or corrective actions. Fill the gaps rather than rewrite.
Existing inspections and audits	Keep them, and do not count them as verification. A general inspection checks broad compliance; V2 tests one critical control. Some inspection items can move into V2.
Existing pre-start forms	If workers already use a Take 5 or a pre-start card, put the task's critical control checks (V3) on it, rather than adding another form. Change the form, not the habit.
Your incident system	Add 'critical control failure' as an incident type, with 'high potential incident' as its classification. R2 can be your system's investigation record or sit beside it.
Mining and other regulated industries	If your industry has its own law on critical controls or principal hazards, use the toolkit to do the work that law requires, and check its specific requirements (section 11).

6. Setting the toolkit up

Fill this in once. Several tools refer to it.

Setting	What to record	Ours
Who runs the toolkit	Name and role, and how much time they have for it	
Who sponsors it	An owner, director or senior manager who will receive R4 and resource the actions	
Our existing risk framework	Risk matrix, risk register and procedures: where they are, and how critical risks link to them (section 5)	
WHS or OHS law and regulator that apply	Act, regulations, relevant codes of practice, any mining or industry law, regulator (section 11)	
Health and Safety Representatives and committee	Names, work groups, how and when we consult	

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Setting	What to record	Ours
How incidents and failures are reported	The system, form or app; where a Fail is recorded; who is told	
Who may restart work after a Fail	The risk owner, or who else, for each critical risk	
How long help takes to arrive	Ambulance and fire to each site; this sets the mitigating critical controls for fast events	
Where completed tools are kept	System or folder, and who can see them	

Consultation: talk with your workers, and give them a real opportunity to contribute before decisions are made, when identifying critical risks, building the bowtie, selecting and standardising the critical controls, and changing them. Good consultation is timely (before decisions are made), genuine (views are considered, not just collected), inclusive (everyone affected, contractors included), documented (it shows how input was sought and used). The workshop record, the standards and the review record each have a place to record it.

7. The first twelve months

Period	Do	Output	Do not
Month 1	Name who runs the toolkit and who sponsors it. Fill in the settings. Set up R1 and R3 so a failure has somewhere to go. Run I1 with the people who know the work, and start I2.	I2 with the critical risks prioritised; R1 agreed	Start bowties for every critical risk
Months 2 and 3	Take priority 1 only. Prepare and run the I4 workshop; build the I3 bowtie; walk it in the field. Run D1 and enter the critical controls in D2. Name owners (D4).	One validated bowtie; four or so critical controls with owners	Select more critical controls than you can verify
Months 3 and 4	Write a performance standard (D3) for each critical control, with the people who use it. Build the V2 checklist and the V3 worker checklist from the standards. Set up V1.	Approved standards; V2 and V3 in use; V1 planned	Write standards nobody in the field has read
Months 4 to 6	Verify on the schedule. Use R1 every time a result is not a Pass, and R2 for every Fail. Track actions in R3 to re-verification. Write V4 each month.	Monthly V4; every Fail investigated	Log a Fail as just an action
Months 7 to 9	Take priority 2, then 3, through the same steps, faster. Report to the owners or directors with R4. Use R5 when anything changes.	Two or three critical risks verified; first R4	Report only the green results
Months 10 to 12	Review the first bowtie (R5). Check Pass quality against hazard and incident data. Review I2 with the same people as month 1. Plan year two.	Reviewed CR-01; reviewed I2; year two plan	Stop verifying a control because it keeps passing

NOTE A business of fifteen people with one afternoon a month: set up R1 and R3, then take your single worst critical risk through I3, D1, D2 and V2. Verify its critical controls monthly, respond to every Fail, and add the next critical risk only when the first is running.

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8. Tool by tool

I1 Critical risk identification worksheet (docx)

Purpose: Finds the events that could kill or permanently disable someone, consequence first, writes each as a specific unwanted event, and prioritises them

When: Setting up; every year; after a fatality or serious incident anywhere in your industry; when the business takes on new kinds of work

Who: The owners or senior people, whoever runs WHS or risk, supervisors, the Health and Safety Representative and experienced workers, together

Connects: Feeds I2. The highest priority critical risk goes to an I4 workshop and an I3 bowtie first.

I2 Critical risk register (xlsx)

Purpose: One row per critical risk: the unwanted event, its worst credible consequence, its priority, its risk owner, where its bowtie is up to and when it is next reviewed

When: Kept continuously; reviewed on the schedule it sets

Who: Whoever runs WHS or risk keeps it; risk owners keep their rows current

Connects: Fed by I1. Bowtie status from I3; critical control counts from D2; review dates from R5.

I3 Bowtie analysis template (docx)

Purpose: Maps one unwanted event: its causes and preventive controls on the left, its consequences and mitigating controls on the right, read left to right

When: One per critical risk, starting with the highest priority; filled in during the workshop (I4)

Who: The workshop group, recorded by the facilitator

Connects: Built in the I4 workshop for one row of I2. Every control on it goes through D1.

I4 Bowtie workshop facilitation guide (docx)

Purpose: How to plan and run a bowtie workshop with the people who do the work: who to invite, what to bring, the running order, the questions to ask and the traps

When: Before each bowtie workshop, and for reviewing a bowtie

Who: Whoever facilitates: often whoever runs WHS or risk, or an experienced supervisor

Connects: Produces I3 and the first pass of D1. Actions from the workshop go to R3.

D1 Critical control selection worksheet (docx)

Purpose: Takes every control on the bowtie through two questions in order: is it a control, and is it critical? Records why each was or was not selected

When: In the bowtie workshop, or straight after it; whenever a control is added or changed

Who: The workshop group or a smaller team with the risk owner

Connects: Takes the controls from I3. Selected critical controls go into D2 and each gets a D3 and an owner in D4.

D2 Critical control register (xlsx)

Purpose: One row per critical control: the risk and cause or consequence it acts on, its owner, its performance standard, how and how often it is verified, and the last result

When: Kept continuously; updated after every verification

Who: Whoever runs WHS or risk keeps it; control owners keep their rows current

Connects: Fed by D1. Each row has a D3 and an owner from D4. Verified on the V1 schedule with V2; results recorded here.

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