

# Northpower Network's Live Lines Down Critical Risk Journey





Z





9.5  
CAL  
HRC2

?

RISK



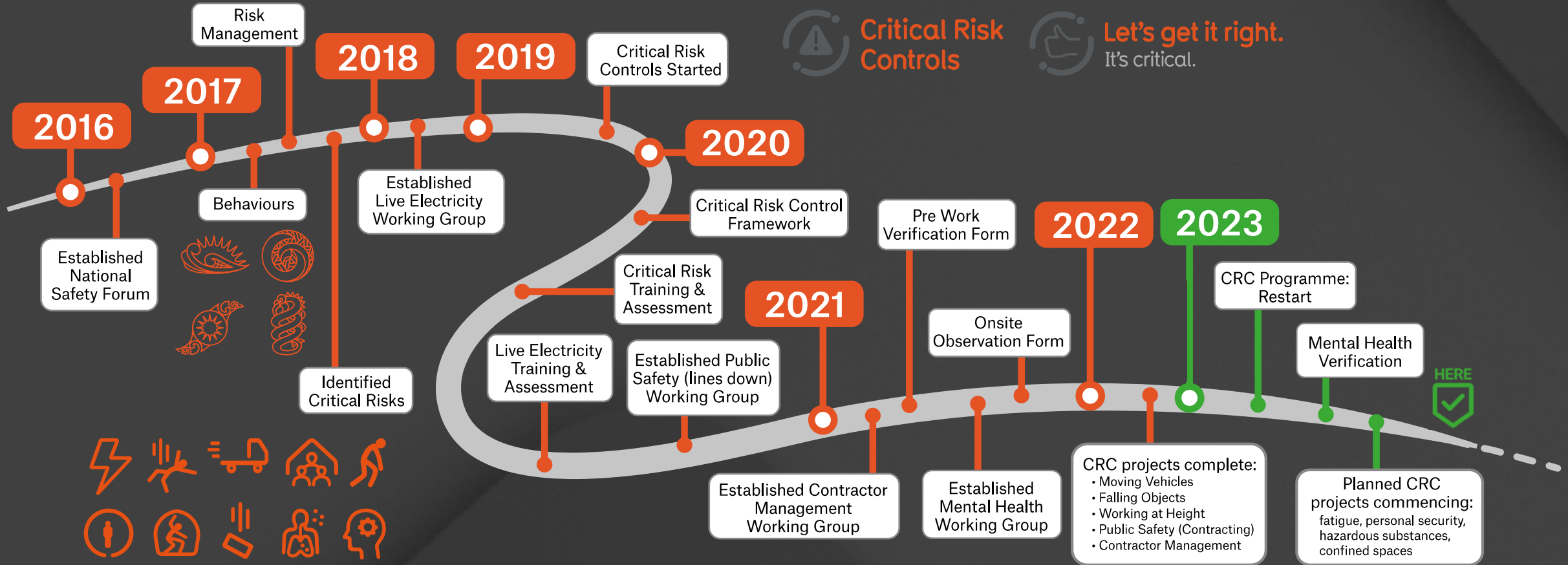


**RISK ASSESSMENT**

**ASSURANCE**

**EVENTS**

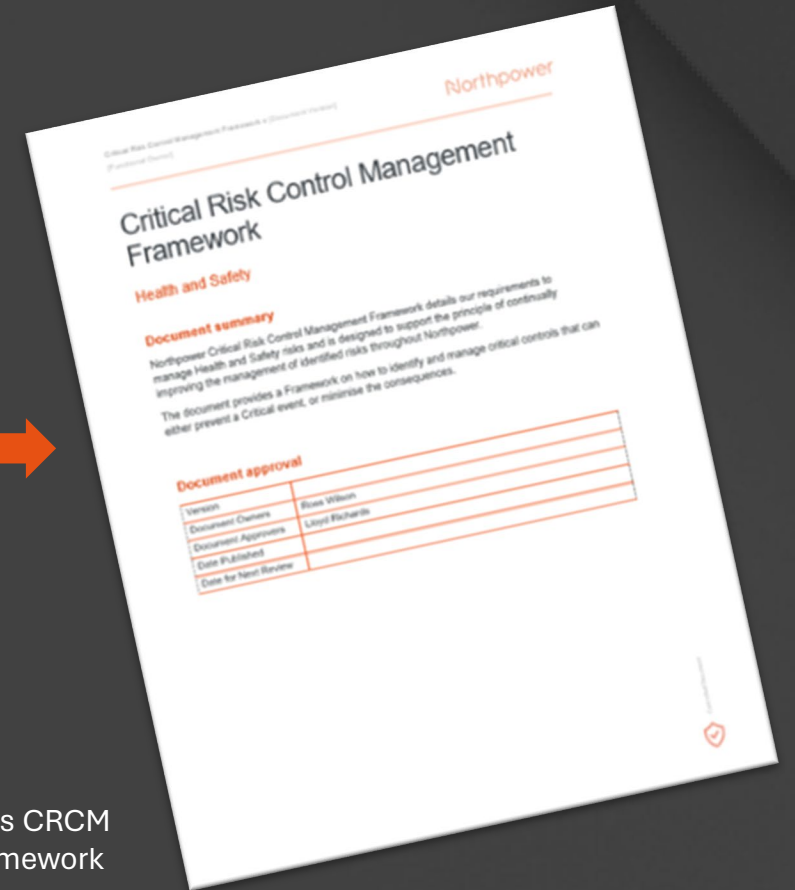
# Northpower's Critical Risk Journey



# Our CRC Management Framework

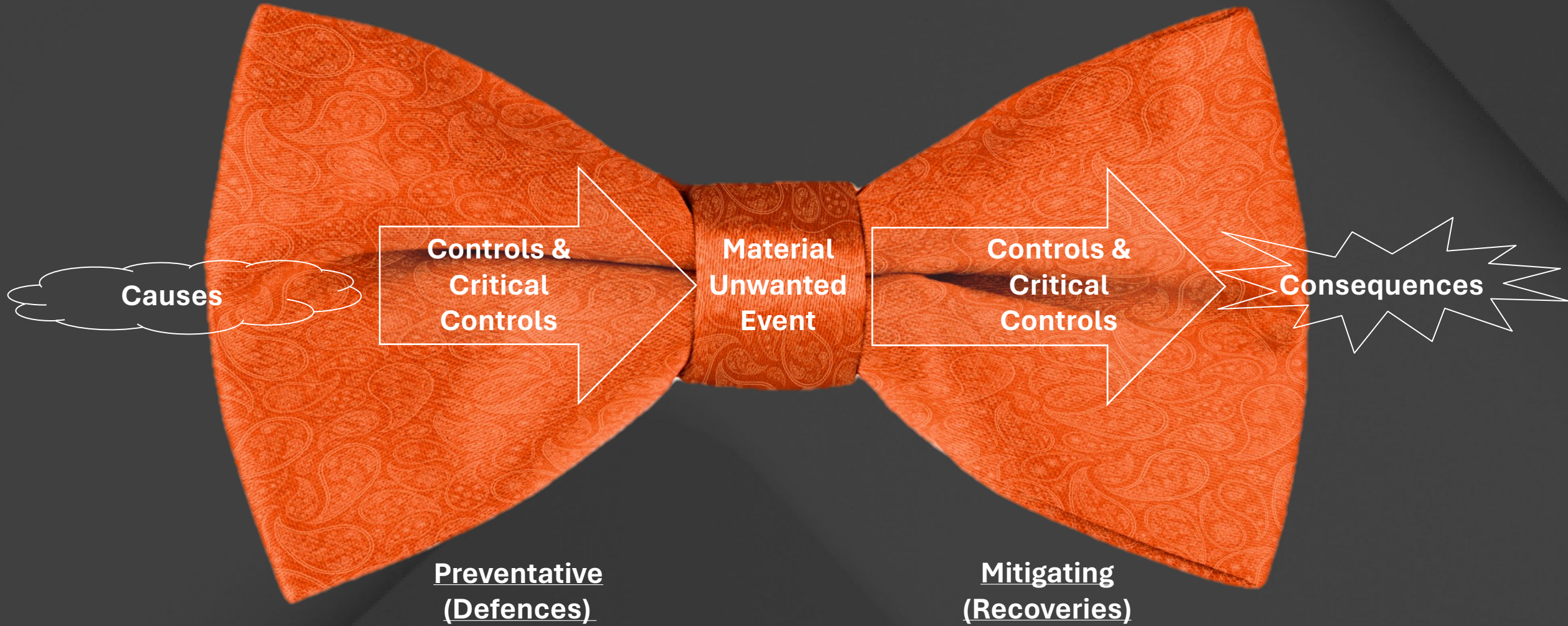


The International Council on Mining and Metals CCM guidance (2015)



Northpower's CRCM Framework







# Critical Risk, Controls & Verification





**Public exposed to  
live electricity due  
to a line down.**



**Public harmed  
through asset  
failure.**



**Public interacting  
with the Network  
assets.**



**Public exposed to live electricity due to a line down.**



**Asset within  
renewal period.**



**Design is  
compliant to  
overhead line  
design  
standard.**



**Approved  
design is used  
for installation.**



**Approved  
materials are  
used in design.**



**Overhead  
assets  
inspected every  
5 years.**





**Defects  
identified  
remediated  
within priority  
timeframes.**



**Fault defects  
remediated  
within priority  
timeframes.**



**Protection  
Tripping is  
Automated  
(HV).**



# **Remote Switching Carried Out**

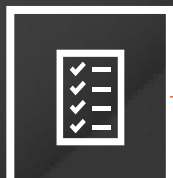
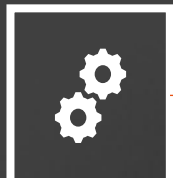
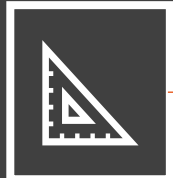


**Response Team  
Contain and/or  
De-Energize  
Line.**

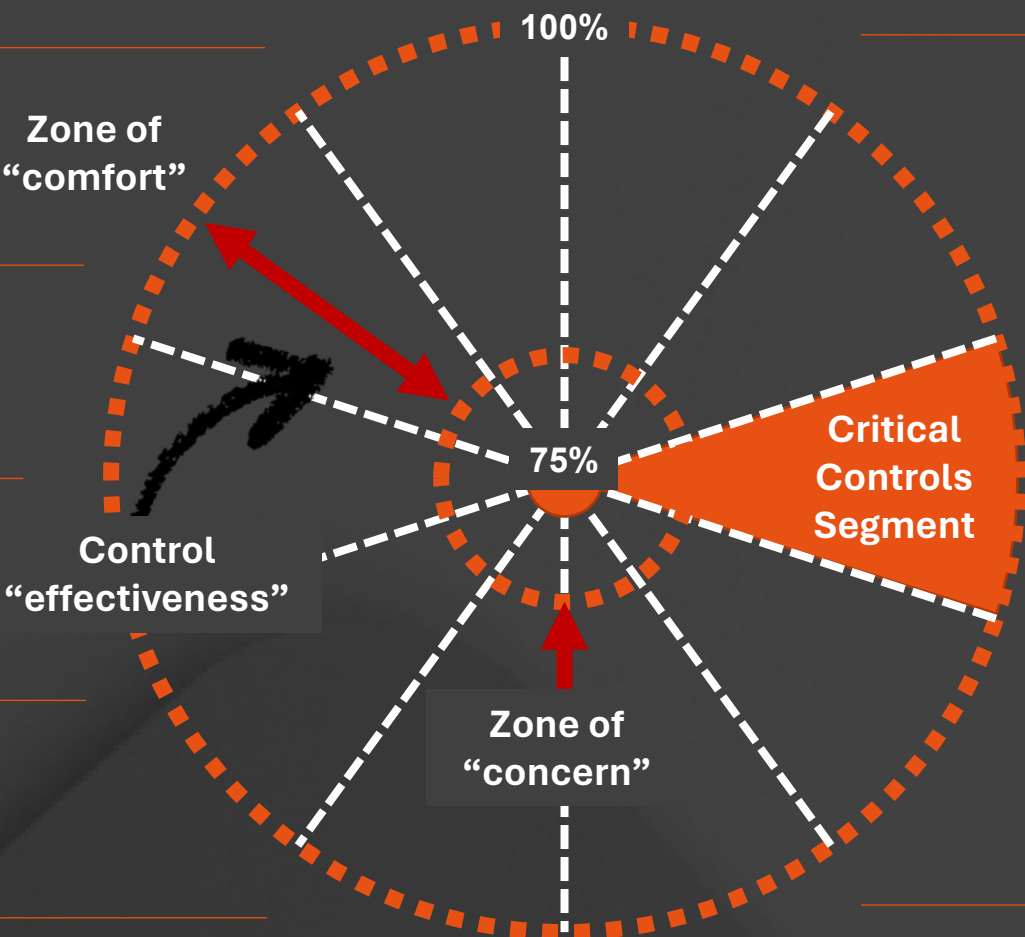
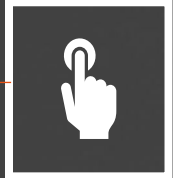
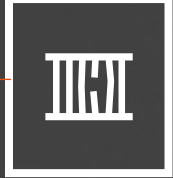




Critical Controls

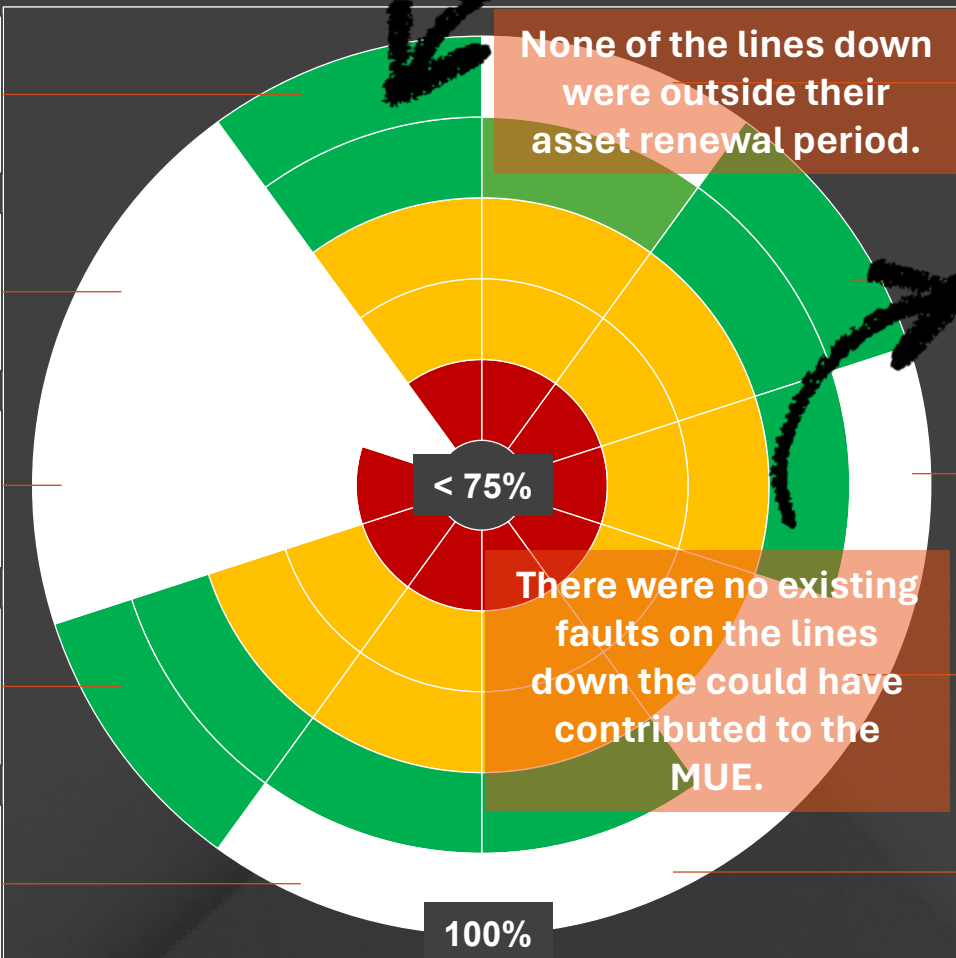


Critical Controls





	100
	69
	77
	100
	92



	92
	100
	92
	85
	92

### Critical Control Verification - Lines Down from MUEs

The Network Team apply a CCVs assessment for all lines down reported (MUEs). Each element is assessed by the area or process (critical control owner) to evaluate the critical control's effectiveness.

The score is the effectiveness of the control over the MUEs reported. N/A controls are counted as effective.

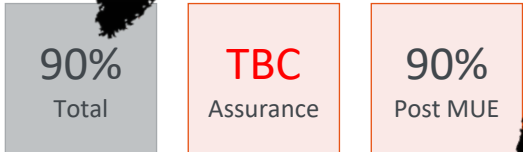
Each segment is worth 5%. The longer the segment, the more effective the control. 75% is currently the lower parameter.

In this example asset renewal, approved materials and no existing faults score 100%. Design and construction score low.

**Addition of assurance & MUE CCVs**

### Critical Control Verification

Percentage of Critical Controls in place when measured.



### Total Lines Down Events

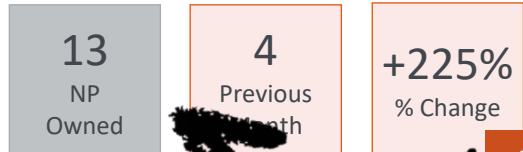
Percentage change from Previous Month



**All events in the month.**

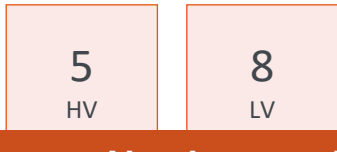
### Ownership

Northpower Owned



### Voltage Level

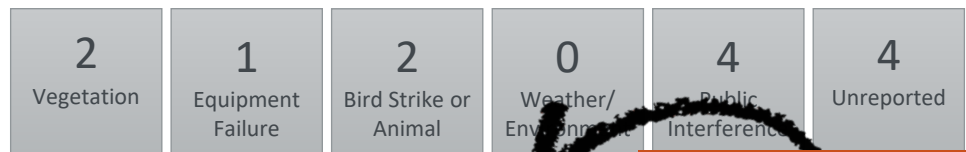
Voltage Level - HV and LV



**Focus on Northpower Lines**

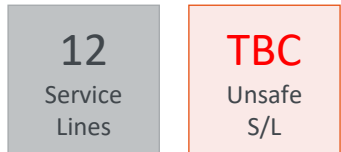
### Event Cause

Immediate cause of Northpower owned lines events.



### Service Lines

Service lines down / Service Line Down on Unsafe Register



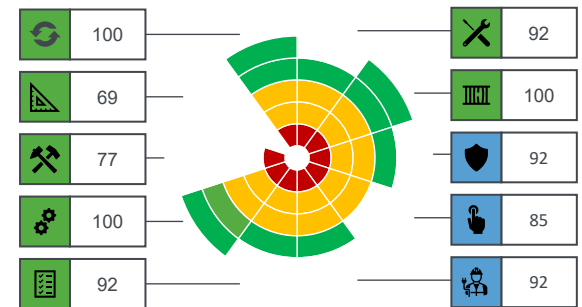
**Northpower reports unsafe service lines.**

[Lines Down /Low Lines CC Verification Data - HERE](#)

	Asset within renewal period.
	Design is compliant to overhead line design standard.
	Approved design is used for installation.
	Approved materials are used in design.
	Overhead assets inspected every 5 years.
	Defects identified remediated within priority timeframes.
	Fault defects remediated within priority timeframes.
	Protection Tripping is Automated (HV).
	Response Team Contain and/or De-Energize Line.
	Remote Switching Carried Out

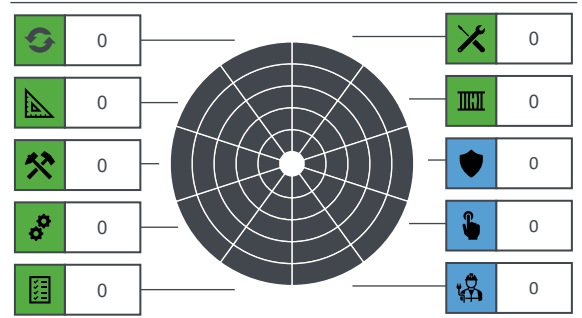
### Critical Control Verification - Lines Down

Assurance and Post Event Aggregated



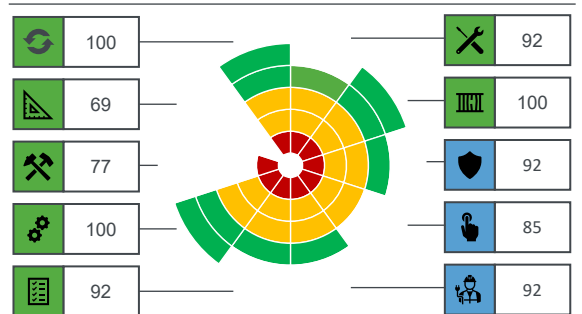
### Critical Control Verification - Assurance

CCV Checks of existing assets



### Critical Control Verification - Post MUE

CCV Checks after a Material Unwanted Event



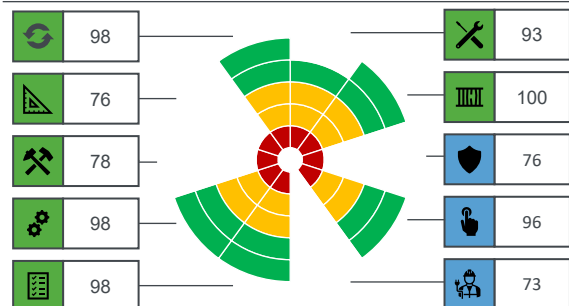




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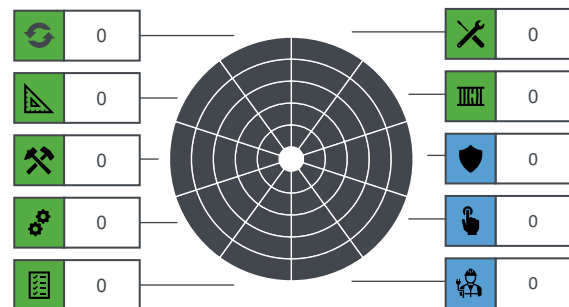
## Critical Control Verification - Lines Down

Assurance and Post Event Aggregated



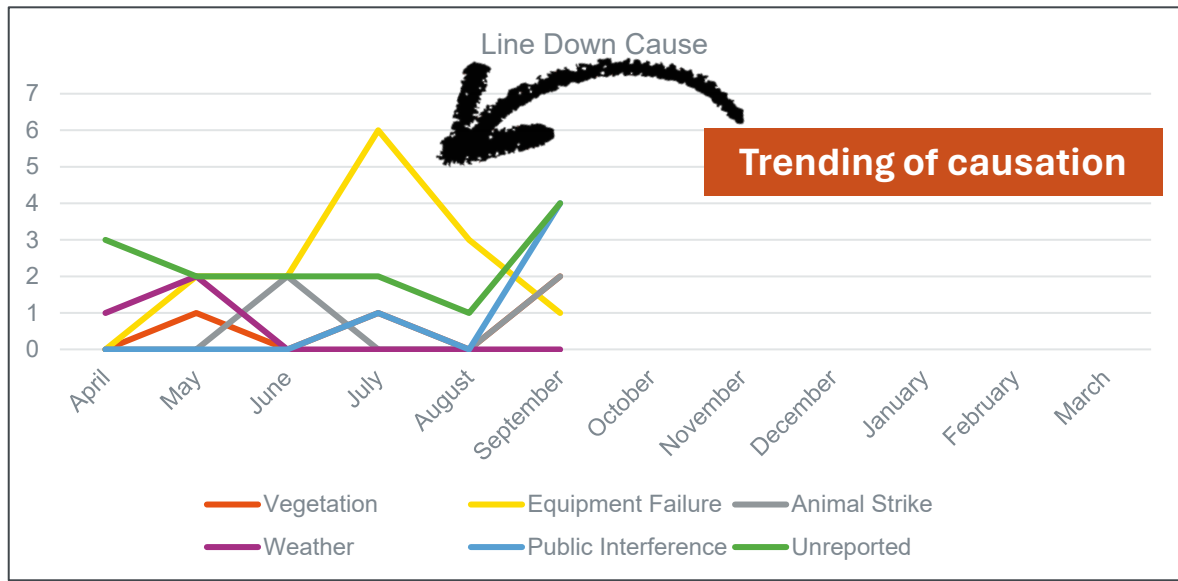
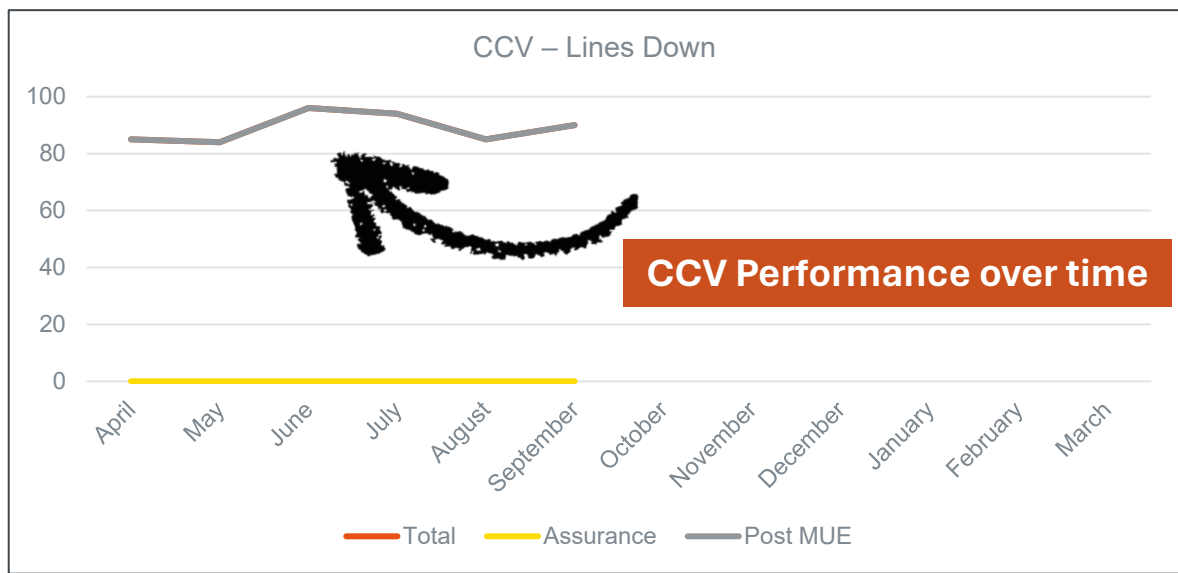
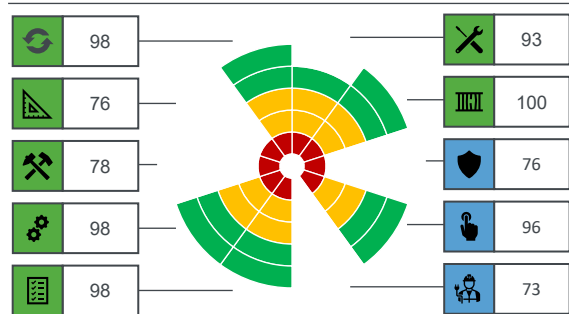
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CCV Checks of existing assets



## Critical Control Verification - Post MUE

CCV Checks after a Material Unwanted Event



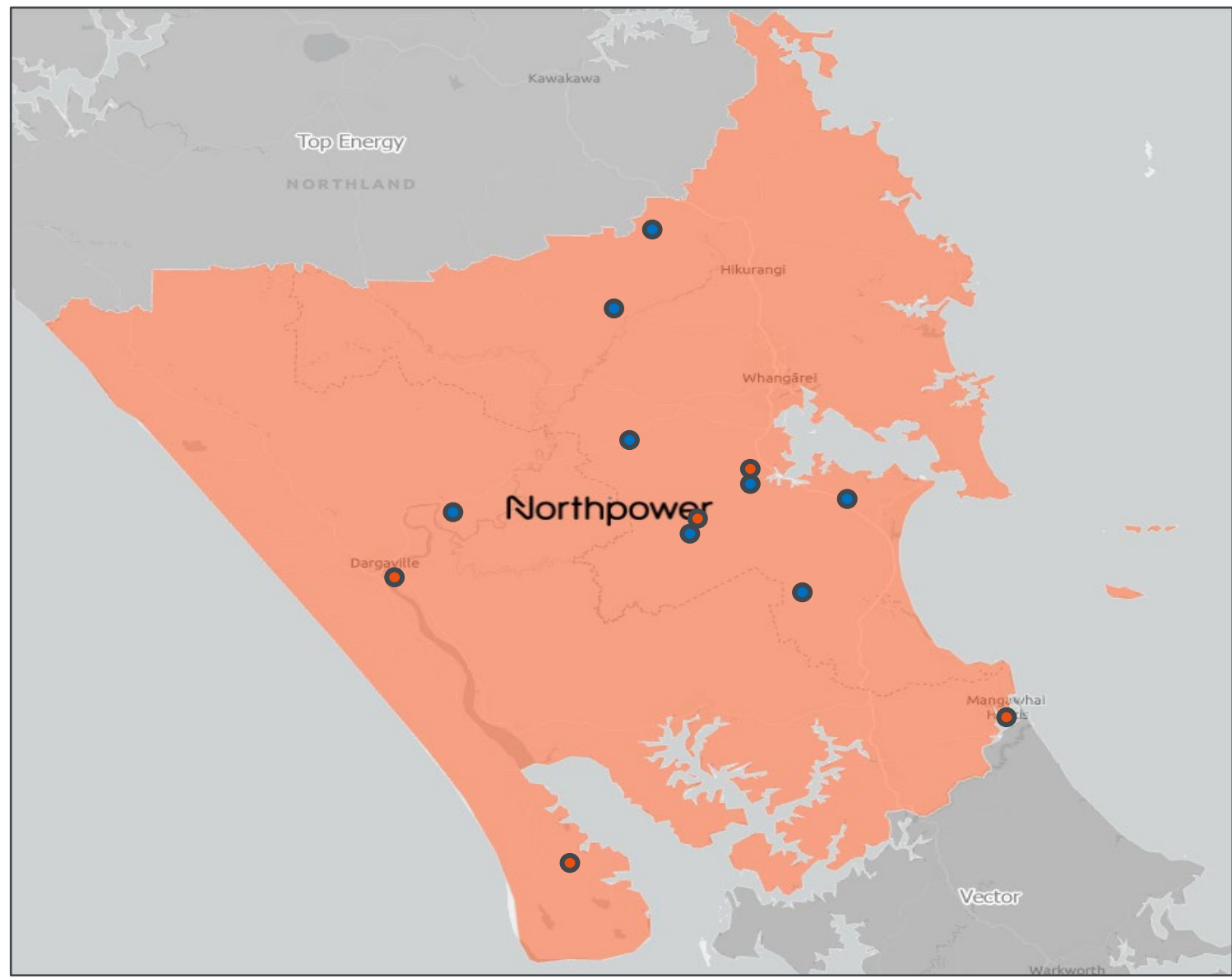


## Critical Control Verification - Lines Down

Post MUE Detail

Legend

- LV
- HV



# Reflections

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“If you want to go fast, go alone, if you want to go far, go together”. African Proverb

## Some Tips

- Back it from the beginning.
- Develop your process - trust the process.
- You've got this - You already have the answers (the framework just organises them).
- Remember Goldilocks - Not too soft, not too hard!
- Beware of chasing unicorns and hunting werewolves!

# Thank you!

