



NHAP

‘Winery Resources

–

Future Challenges’

The background of the slide is a grayscale aerial photograph of a city. A prominent river flows through the center, with several bridges crossing it. In the foreground, there are various buildings, including a large, modern skyscraper that stands out significantly. The city extends to the horizon under a clear sky.

Fact File

Electrical and automation products, systems and solutions

95%
Delivered in full on time

Over
45
locations

75,000
Marketed lines

Turnover over
\$AUD400M

Over **750**
employees



Local Service & Support

We are here for you

Our locally based teams provide service and support resources when, where and how you need them: 24/7, 365 days.



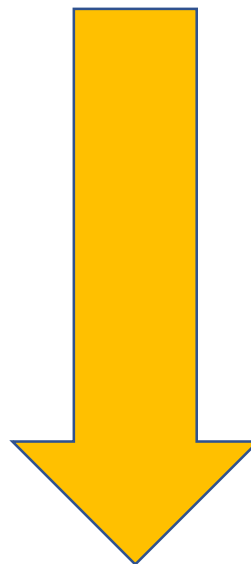


Asset Sweating

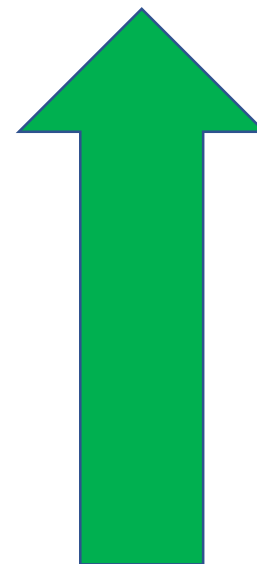


To extract the most possible work from your equipment or people

Cost



Output



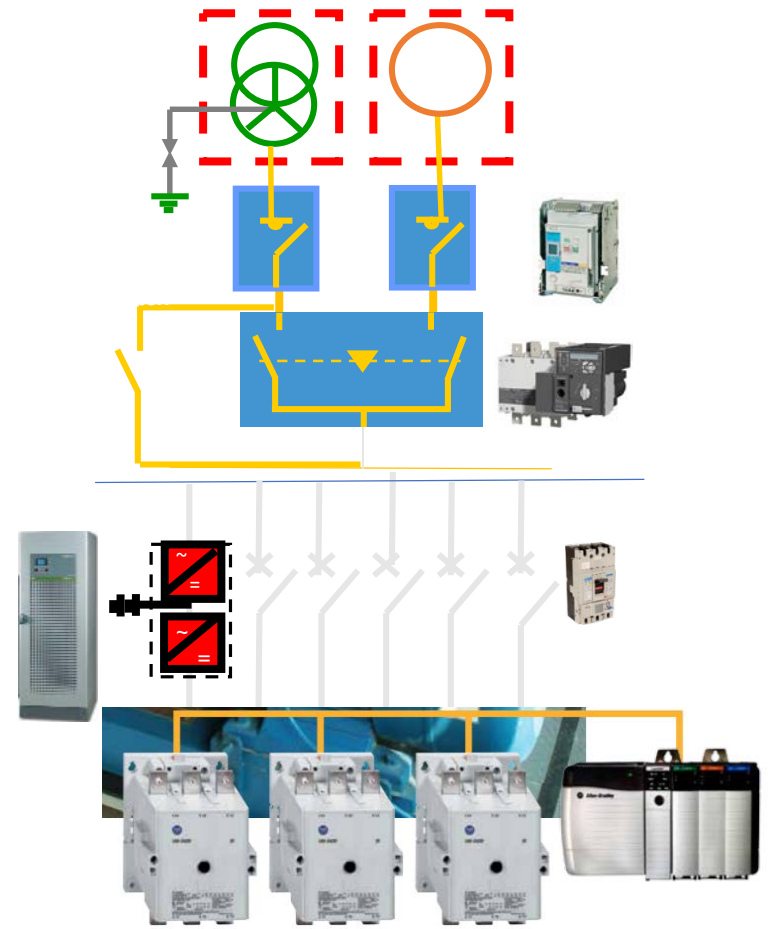
Critical LV Switchgear

Top of the reticulation system:

- Single point of failure

Mitigation strategy

- Maintain
- Monitor
- Modernisation



Maintain: Aging Electrical Infrastructure

- 3% typical failure rate first 5 years
- Wearing of mechanical gears
- Burning out of coils
- Auxiliary Contacts become unreliable
- Faulty tripping mechanism
- Overheating of main contacts
- Trip unit failure (15-20 years)



Maintain: How Serious Could It Be?

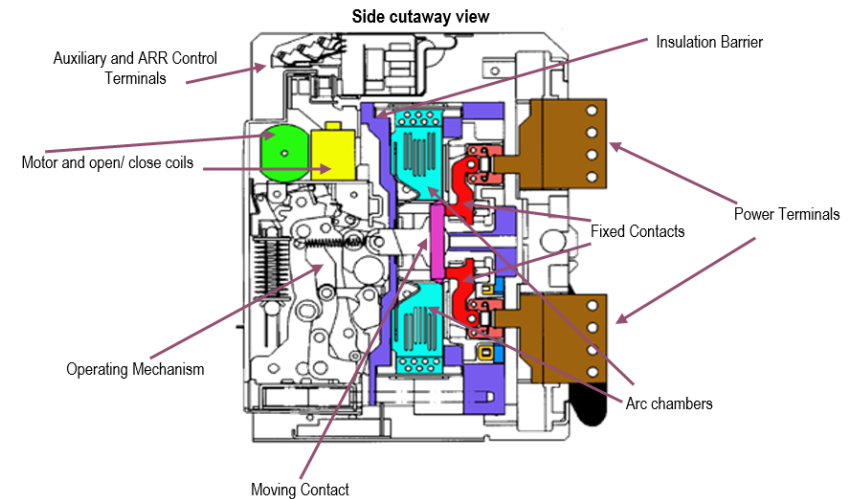
- Loss of production
- Damage to electrical infrastructure
- Fire / arc flash / toxic smoke
- Increased Insurance costs
- Damage to company image
- Injury or death of people



Maintain: ACB Typical Service

- Trip unit calibration / trip mechanism
- Finger isolating cluster condition
- CT condition
- Arc Chutes
- Coil and contact resistance
- Insulation integrity
- Lubrication points

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Maintain: ACB Service Frequency

- Conditions and environment
- Duration
- Mechanical and electrical stresses
- Open-close cycles

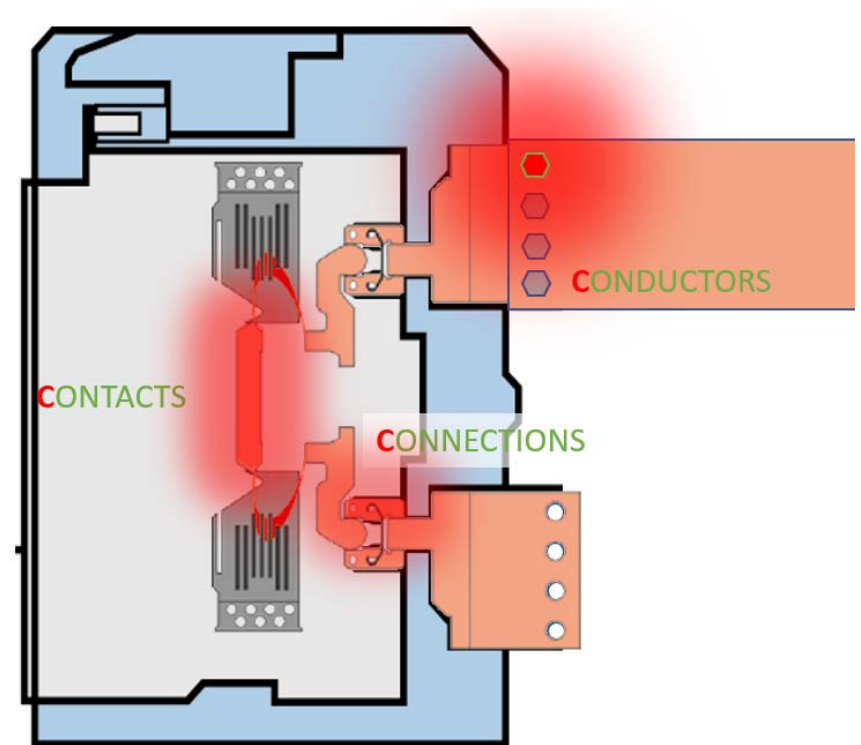
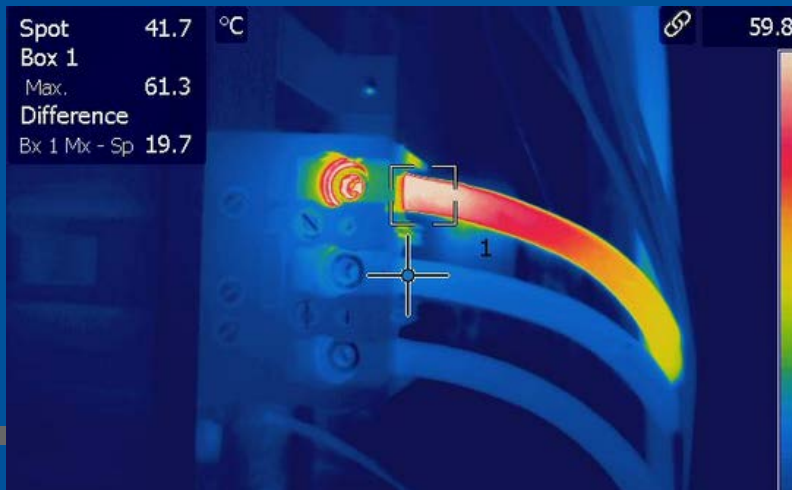


Frequency of an ACB service?

Monitor: Predictive Maintenance



- Heat is a key indicator:
- IR scans
- Switchboard temperature sensors
- ACB integrated overheating sensors





Monitor: Predictive Maintenance





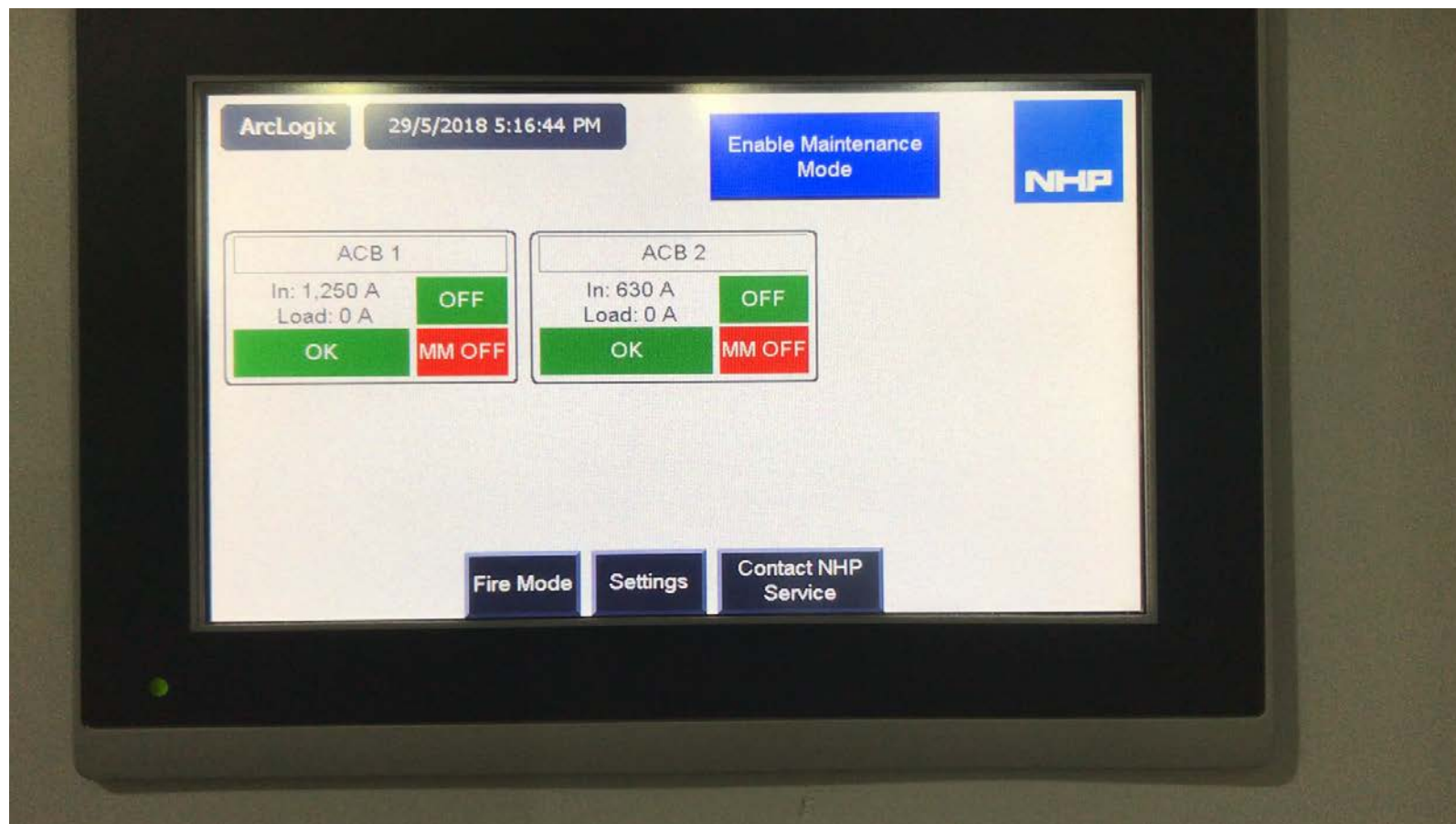
Monitor: Arc Flash Mitigation

Most Important Asset





Monitor: Arc Flash Mitigation

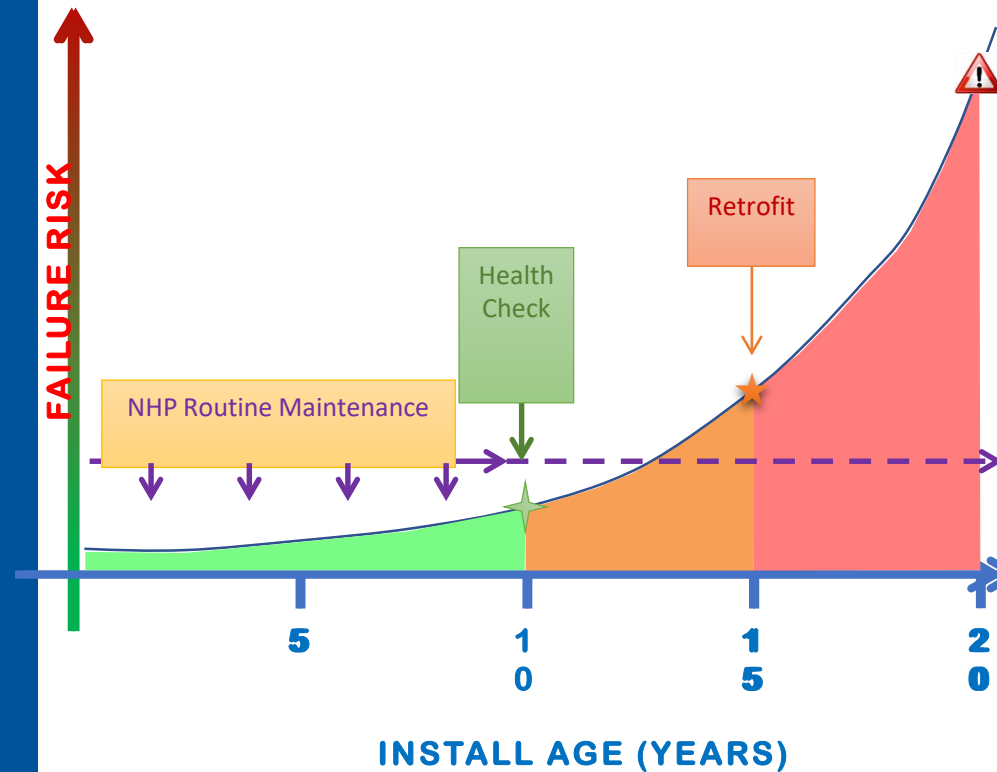


Modernisation: ACB Lifecycle

Life After Asset Sweating

- Many of the ACBs in service are no longer manufactured. These have been superseded over time by newer models.
- Depending on the age and the place of manufacture, parts and servicing may not be available.
- Servicing (when possible) is also expensive and mostly requires the ACB to be worked on at the service company's factory. This does not take into account the plant down-time.
- Although ACBs are generally reliable devices, they are subject to deterioration over time as is all mechanical/electrical equipment.

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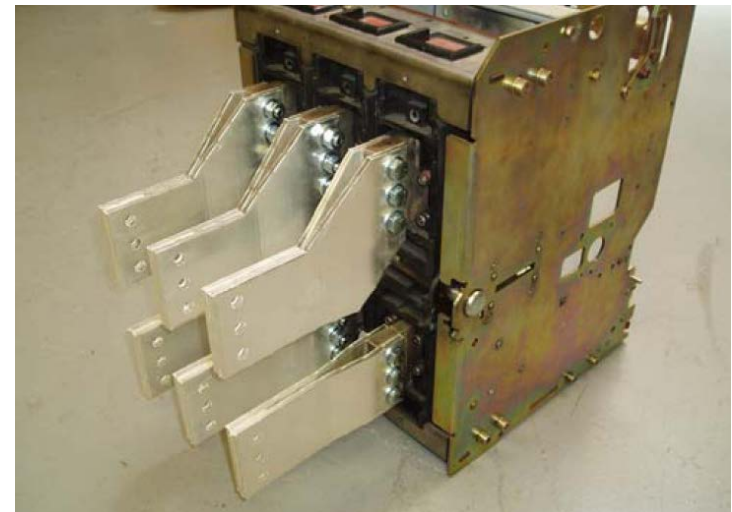


Modernisation: Retrofit Solutions

- Retrofit : this is the remaking of connections to suit the new ACB. Typically the existing carriage remains in an altered form.
- Installation : duplicates the connection and fixing points of the original ACB. Typically the existing carriage is fully removed. Switchboard isolation is required.



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Modernisation: Retrofit Failing Switchgear

Why retrofit:

- More cost effective than full replacement
- Shorter shut down time
- Introduce the latest protection technology
- Extend the life of the switchboard
- More environmentally friendly





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Thank you for your time