



POWER CONTROL ENGINEERS

ELECTRICAL EQUIPMENT FAILURE INVESTIGATION

Why investigate electrical equipment failure?

INVARIABLY THE TOTAL COST ASSOCIATED WITH AN ELECTRICAL EQUIPMENT FAILURE FAR EXCEEDS THE COST OF THE FAULTED COMPONENT.

PERSONS RESPONSIBLE FOR THE MANAGEMENT OF ELECTRICAL INFRASTRUCTURE ARE OBLIGED TO ENSURE THE SAFE AND RELIABLE OPERATION OF THEIR SITE IS MAINTAINED.

ELECTRICAL EQUIPMENT FAILURE INVESTIGATION

- All seemingly isolated failures should be investigated
- Two similar failures will most certainly result in further failures
- Multiple failures can erode management or customer confidence
- Insurers may require remedial works to be implemented to prevent further failures (reduced premiums)

ELECTRICAL FAILURE INVESTIGATION PROCESS

It is vital to preserve evidence.

- Critical evidence can be lost
- Most companies do not have adequate processes or appropriate resources to investigate failures
- Suppliers or manufacturers can have vested interests in the outcomes of failure investigation - an unbiased investigation is vital

The investigation process.

- Determine if there have been any recent changes to equipment or configuration
- Interview operators and maintainers to get an understanding of the equipment history
- Understand the sequence of events preceding the failure
- Confirm the operation of protection systems is consistent with the events
- Objectively look at the evidence without a preconceived failure theory
- Undertake taproot analysis to determine the most probable root cause
- Document the findings
- Identify recommendations to prevent further reoccurrences of the event

INVESTIGATION EXPERTISE

PCE has considerable experience and expertise necessary to adequately investigate electrical equipment failures.

Access to external resources is available if required for specialist areas.

Types of failure and fault investigations include:

- Power transformers
- High voltage cable and termination failures
- Inadvertent protection tripping
- Electric shocks and incidents
- High voltage switchgear
- Switchboard faults

Industries:

- Heavy industry - aluminium smelting, steelmaking, coal handling
- Infrastructure – utilities, generation, solar, wind
- Manufacturing – food, building products, OEM's
- Agriculture – cotton, grain, meat

Contact us for more information.

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