



Live Line Re-Introduction



1

Background

- Worksafe raised concerns with the industry regarding Live Line work
- Health and Safety at Work Act 2015 placed greater responsibility on officers (Board members and SLT) to verify work practices complied with the Act
- Greater introspection by boards and senior leadership teams led many companies around the country to pause all live line work on their networks
- Like many others, PowerNet followed suit



2

PowerNet Internal Audit



Pre Live Line Pause Operational State

Network preference for work to be undertaken “live” whenever possible (Keep the lights on!)

Casual process to scoping and issuing live line work tasks to work crews

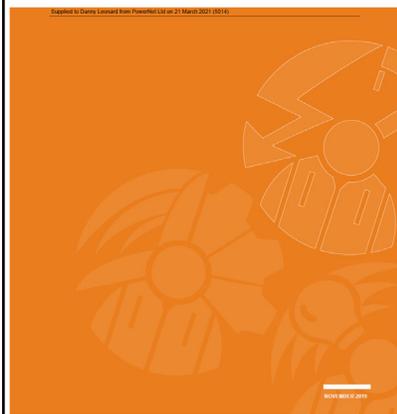
Little or no engagement with Live Line Supervisor and crew in undertaking risk assessment at the planning stage

Procedures were flexible and left to the Live Line crews to determine how the job would be completed

Discrepancies existed in the Live Line work procedures and auditing requirements across the industry

3

Guidance from the EEA



HIGH VOLTAGE LIVE WORK MODEL PROCEDURES FOR GLOVE AND BARRIER WORK

FIRST PUBLISHED: NOVEMBER 2019



LIVE LINE WORK RESTART - INDUSTRY PRACTICE NOTE

FIRST PUBLISHED: DECEMBER 2019



High Voltage Live Work Auditing and Inspection Guide

First published: March 2005 (Field Auditing of Live Line Work)
Revision 1: April 2014
Current Publication: July 2020



4

Where to from here.....

- Project plan based on the EEA Live Line Work Restart – Industry Practice Note
 - Pre-selection interviews and psychometric testing before all refresher training.
 - Engagement with Depot Supervisors regarding team make up and numbers to ensure sufficient exposures
 - Network criticality and safety risk assessment tool created
 - Live line project planning document developed requiring sign off from project manager, depot supervisor and live line team leader for each job prior to scheduling.
 - Refresher training and auditing schedule developed
 - External audit of implementation plan carried out prior to submitting to the PowerNet SLT and Board



5

So What Has changed in PowerNet

Work Philosophy

“All work defaults to de-energised, isolated and earthed unless it is clearly proven that live line is the safest option”



6

Best Practice

All live line work is based on Industry developed Standards



7

Collaborative Approach and Decision Making

The decision and justification to work live is not made in isolation:

- Project Manager involvement
- Depot Supervisor involvement
- Live Line Team Leader involvement
- Live Line Team involvement

All parties must assess and agree before implementation in the field



8

Planning and Workflow Process

OP-FRM-0021 – Approval for Live Line Work Form

Live Line Assessment Criteria Planning Stage – The following criteria must be contemplated to determine the appropriate work technique.

Security Class: PowerNet Employees & External (with NDA)

Task	Approval Number	
Location of Work		
When it is not reasonably practical to eliminate risk, De-energised work methods will be used unless a High Voltage Live Line work method is safer.		
1 Is it unreasonable in all circumstances for the line to be de-energised?		
a) Is the circuit strategically important for system security or public safety?	YES (to any of these questions) Planner to complete PHL Live Line Risk Assessment	NO – go to question b
b) Will the public or customers with special or sensitive needs be significantly affected?	YES – go to question c	NO – go to question c
c) Are there any significant public or worker safety risks that exist with de-energised work?	NO – work must be done (de-energised)	STOP
Project Manager: _____ Signature: _____ Date: _____		
2 Is it reasonable in all circumstances for workers to work on live un-insulated conductors?		
For the Depot Supervisor and Live Line Project Manager to decide:		
a) Does the risk assessment of proceeding with live work show a low risk of failure or low risk of harm?	YES – go to question b below	
b) Are suitable controls available, that can be applied to minimise the risk of harm (including where necessary the provisions of suitable protective equipment)?	YES – go to question c below	STOP
c) Can effective and appropriate work procedures be applied to ensure safe outcomes?	YES – go to question d below	
d) Are the selected workers authorised to carry out the live line procedure or technique?	YES – go to question e below	NO (to any one of these questions) - work must be done de-energised
e) Does the live line team have the appropriate and necessary tools and equipment to carry out the work safely?	YES – Depot Supervisor to sign below and contact Live Line Team Leader to assist with Section 3	
Procedure # and Title: _____ Circuit/Feeder Number(s): _____		
Depot Supervisor: _____ Signature: _____ Date: _____		

Approved by Danny Leonard, Distribution Manager. Review Category: 3 Train - Very Low Risk. Version Date: 23 September 2020. Review Date: 30 November 2023.

OP-FRM-0021 – Approval for Live Line Work Form. Live Line Assessment Criteria Planning Stage. The following criteria must be contemplated to determine the appropriate work technique.

3 Are there limitations in the scope of the work that could affect the safety of the live line work team?		
For the Live Line Team Leader and Depot Supervisor to decide:		
a) Is the complexity of the task within the safe limits of carrying out live line work?	YES – go to question b below	STOP NO (to any one of these questions) - work must be done de-energised
b) Are the mechanical and electrical characteristics of the asset to be worked on in sound condition?	YES – go to question c below	
c) Are the risks associated with the condition of the asset within the safe parameters necessary for live line work?	YES – go to question d below	
d) Is the work within the physical capabilities of the live line team or individuals (e.g. no risk of heat or cold stress)?	YES – go to question e below	
e) Is the duration of the work comfortably within the capabilities of the live line work team?	YES – go to question f below	
f) Is the asset to be worked on, easily accessible and supports using live line work techniques?	YES – go to question g below	
g) Does the task meet the safety justification required for live line work?	YES – Live Line Team Leader to sign	
Order Number: _____ Contract/Job Number: _____		
Live Line Team Leader: _____ Signature: _____ Date: _____		
4 Undertake Live Work		
a) Undertake an assessment of the proposed works: Consider loadings, capacities and clearances associated with the asset to be worked on, as well as any point, tools or equipment proposed to be used in the works. Conductor loadings to be documented on site.		
b) Undertake a site review and document a site specific Risk Assessment		
c) Proceed to planning the live line work. Confirm the following: <ul style="list-style-type: none"> • An approved procedure or technique for the work is on site • Staff are competent to carry out the procedure/technique • Appropriate plant, tools and equipment are available, in-test and on site 		
d) Initiate the Redress Block (RCB) and obtain the Live Line Work Permit. Establish communication link with System Control and confirm check-in time		
e) Proceed with the work. Work team to undertake targeted testing to reveal any risks, hazards and subsequent implemented controls, sequence of operations and emergency response plan. To be repeated if the scope of work changes during operations. Weather conditions are to be assessed – work should not proceed if weather conditions that may adversely affect the safety of the team are expected. Prior to commencing work - the Safety Observer and Site Supervisor must agree and confirm on the process for suspending the work.		

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9

Justification Process

PowerNet Live Line Risk Assessment Worksheet: Version 1.1

Recommendation: LIVE LINE JUSTIFIED

Region		South		Network Justification					
Feeder		RRD CBS		1	2	4	Score	Input Values	Notes
Strategic	N1	Operational priority of circuit	Priority 5 & 6	Priority 3 & 4	Priority 1 & 2	2		3 & 4	See PHL Definitions
	N2	Number of switching operations if work done dead (i.e. switching job out and back)	Less than 5 Switching operations	Between 5 & 15 Switching operations	Greater than 15 switching operations	2		5	Enter number of switching operations
Dunge	N3	Time to complete switching operations if done dead	Less than 1 hour to complete	Between 1 & 2 hours to complete	Greater than 2 hours to complete	2			Default time comes from selection of no. of switching operations. However, a manual override can be forced, if required. Please enter into the cell.
	N4	Number of ICs affected	Less than 5 Customers	Between 5 & 20 customers	Greater than 20 customers	2		Between 5 & 20	
Network Score							16		<input type="button" value="Clear Data"/>
				Safety Justification					
Score Factor		2	4	6	8	Score			Notes
Live Line procedure	S1	Low Complexity Procedures	Mid Complexity Procedures	High Complexity Procedures	Extra High Complexity Procedures	2		Low Complexity	Refer to PHL Live Line Procedures
Condition of Asset	S2	Good	Aged	In Doubt	Heavily Defected	2		Good	
Man hours to complete (Paymore Risk)	S3	0 - 2hr	2hr - 4hr	4hr - 6hr	6hr +	2		0 - 2hr	Refer to PHL Definitions
Access	S4	Standard pole No clearance issues	Standard pole with clearance issues	Replacing pole into same hole	Complex pole	2		Standard pole No clearance issues	
Conductor Displacement	S5	1m +	500mm - 1m	50 - 500mm	N/A	1		N/A	
Safety Score							16		



10

Training Requirements - Internal

- Live Line Risk Assessment Training for selected Project Managers and Depot supervisors
- Refresher Training System Control
- Live Line Induction training for Operations Managers/SLT/Directors
- Live Line Refresher Training carried out for selected staff at our Racecourse Road training centre



13

In summary

Post Live Line Pause

EEA guidelines adopted to guide the implementation and maintenance of Live Line work.

Work to be undertaken de-energised, isolated and earthed in the first instance; unless the live work risk assessment criteria can be clearly met

Live Line Approval form developed to ensure all stakeholders have communicated and collaborated towards the successful completion of the work

Safe Work Method Statement produced to identify risks and methods of control during the work

National suite of live line procedures produced by the EEA adopted by PowerNet

Auditing guide updated by EEA and adopted to reflect a higher level of monitoring



14