

# High Voltage Live Work Auditing and Inspection Guide



# EEA Guide Timeline

- 1999 – EEA conducted national survey of Live Working Service Providers – highlighted need for consistent auditing
- 2003 – Approval of NZ ECP46:2003
- 2005 – 'Field Auditing of Live Line Work' published
- 2014 – Revision 1
- 2017 – ECP46 Industry Practice Note
- 2020 – Current Guide 'High Voltage Live Work Auditing and Inspection Guide'

# Key Amendments

- New Section 12 – Training Providers
- Definitions and References
- Basic Principles
- Audit Frequencies
- Auditor Selection
- Non-Compliances
- Reporting
- Appendices

# Section 12 – Training Providers

Advice for Asset Owners to undertake due-diligence and review Training Providers quality management systems, in particular 2 key areas;

**Trainer Competency** – Trainers are required to be certified as competent by the Training Provider and are to achieve the following requirements;

- Competent in method being taught
- A minimum of 12 months documented experience in method being taught
- Gained competency in instructing
- Have conducted, to a certified trainer's satisfaction, a full live line work training course in the method being taught under the guidance of that certified trainer and passed that trainer's assessment of the delivery of the instruction in live line work theory and practical techniques
- Meet training providers Quality Management Systems
- Hold relevant NZQA qualification or equivalent for the training being delivered and where issuing competency certificates to students i.e. Certificate in Electricity Supply (Line Mechanic Transmission Live Work), Certificate in Electricity Supply (Line Mechanic Distribution Live Work)

# Section 12 – Training Providers

Advice for Asset Owners to undertake due-diligence and review Training Providers quality management systems, in particular 2 key areas;

**Trainer Auditing** – as per the auditing requirements of ECP46 1.3.4.5.5, Training Providers shall regularly audit the competencies of their trainers to ensure they meet industry competency requirements. EEA recommends that auditing of trainers should be undertaken at no less than 12 month intervals. Elements for auditing of trainers;

- Competent in method being taught
- Documented work experience/ exposure in the method being taught
- Competent in the instructing and training
- Knowledge and application of industry's standards
- LV works guide, knowledge and application
- Evidence of continuing professional development and NZQA qualifications
- Industry involvement and engagement
- Equipment knowledge
- Trainers personal equipment certification and testing
- *NZCEP 46 & EEA Practice Note* knowledge & application

# Definitions and References

New reference to ECP46 HV Live Line Work – Industry Practice Note 2017

'Inspection' has been defined;

- To inspect the field performance of live line work, the inspection shall address safe work practices and conformance with documented techniques. *As determined in NZECP 46: 1.3.4.5.2*

'Audit' has been defined;

- To evaluate and verify the processes and documentation used by an organisation and produce a report on findings. Also used in guide to mean inspection

# Section 4 – Basic Principles

New addition to list of Basic Principles;

- (k) Companies undertaking a live line restart should have an audit frequency no more than 3 monthly (e.g. 4 audits in the first 12 months)

# Section 6 – Audit Frequencies

New paragraph in 6.1;

- To provide an independent objective view, audits undertaken by an external auditor should be completed once a year. These audits are beneficial to organisations through the independence and fresh view of the Live Line Work



# Section 8 – Auditor Selection

4(a) Allowance for assistance;

- All Live Line Work auditors must be trained and currently competent in the Live Line Work method they are auditing or is assisted by a person who is currently competent

4(d) – All Live Line Work auditors must be Independent from the work party (was previously impartial)

# Section 10 – Non Compliances

New paragraph;

- Where non-compliances have been found, these areas shall be revisited and included as part of the refresher training programme

# Section 11 – Reporting

National Reporting Categories for Non-Conformances on Live Line Work Audits			
Cat	Live Line Work Type		
	A: Glove and Barrier	B: Hot Stick	C: Barehand
1	Procedural, technical	Procedural, technical	Procedural, technical
2	Pre-task checks and tailgate sheet sign-off	Pre-task checks and tailgate sheet sign-off	Pre-task checks and tailgate sheet sign-off
3	Contact area	Approach Distances (MAD)	Approach Distances (MAD)
4	Appropriateness and currency of work party Certificates of Competence	Appropriateness and currency of work party Certificates of Competence	Appropriateness and currency of work party Certificates of Competence
5	Safety Observer	Safety Observer	Safety Observer
6	Site Supervision	Site Supervision	Site Supervision
7	Equipment maintenance, test dates, storage and care, configuration, loading and fit for purpose.	Equipment maintenance, test dates, storage and care, configuration, loading and fit for purpose.	Equipment maintenance, test dates, storage and care, configuration, loading and fit for purpose.
8	Pre-job inspection of gloves and sleeves	Pre-job inspection of sticks and tooling	Pre-job inspection of sticks, rope and tooling
9	Application of insulating barriers	Application of insulating barriers (where relevant)	
10	Second point of contact: Difference of potentials	Second point of contact: Difference of potentials	
12	Rigging	Rigging	Rigging
13	Work site hazard / risk identification and mitigation	Work site hazard / risk identification and mitigation	Work site hazard / risk identification and mitigation
14	HV isolation/ reclose block communication procedures	HV isolation/ reclose block communication procedures	HV isolation/ reclose block communication procedures
15	Other (e.g. basic safety, traffic control, etc.)	Other (e.g. basic safety, traffic control, etc.)	Other (e.g. basic safety, traffic control, etc.)

Table 3 Non-conformance reporting

New



New



# Appendices

New Sample Assessment Form in Appendix C

Subjects Include;

Site Safety

Personnel

Documents Authorisation

Personal Safety

Equipment

Vehicle

During Procedure

Debrief

Old Appendix D now integrated into Appendix C

APPENDIX A  
 Audit Date: 23/11/2020  
 Work description: Isolate and disconnect 11kV cable  
 Contract Manager: [REDACTED]  
 Contract No.: Operating Order # J-58387-B  
 Works Order: C-220397  
 Site Location: Fiddlers Road, Motukarara  
 Live Line Work Permit: LL-49300-B  
 Weather Conditions: Fine  
 Vehicle No.: LTW121  
 Procedure Technique: NA  
 Site Supervisor: [REDACTED]  
 Safety Observer: [REDACTED]  
 Team Members: [REDACTED]

**ASSESSMENT RESULTS**

a.	Job planning	✓	n.	Tooling: general condition & cleanliness	✓
b.	Tailgate & debrief	✓	o.	Tool storage vehicle	✓
c.	Site documentation. Competencies & management. SWP & CPR / First Aid	✓	p.	Compliance with MBIE CoP's, NZECP's & regulatory requirements	✓
d.	Procedures / techniques available on site. Master copy & review process	✓	q.	Procedures / techniques followed	✓
e.	Plant & tooling preparation	✓	r.	Cover-up adequate	✓
f.	All tooling in test / showing next test date	✓	s.	LL.MAD's adhered to	✓
g.	SWL marked on load bearing tools	✓	t.	Teamwork evident	✓
h.	Plant certification – electrical	✓	u.	Communication: effectiveness	✓
i.	Plant certification – mechanical	✓	v.	Safety observer: effectiveness	✓
j.	Truck & plant earthing / bonding	✓	w.	Site supervision: effectiveness	✓
k.	Site security. TMP etc.	✓	x.	Workmanship quality	✓
l.	Team health status on the day	✓	y.	Best industry practices used	✓
m.	Personal protective equipment	✓	z.	Other;	✓

**SCORE SHEET & RATIONALE**

Ref. EEA "Guide to Field Auditing of Live Work 2014"

Non – Compliance rating criteria		Points.
1. Critical	Work stopped immediately until resolved.	10
2. Serious	Pointed out and able to be corrected at the time it occurred. If not able to be immediately and safely corrected, work is stopped.	5
3. Important	Discussed in the tailgate session following that job.	2
4. Minor	Other	1

**Note:** 2 x Criteria 1 (Critical) means live line work is stopped for 1 week while safety refresher training is completed.

**NON-CONFORMANCE CATEGORIES**

LIVE LINE WORK TYPE			
Cat	A: Glove and Barrier	Non-Compliance Rating	Points Deducted (starting at 100)
1	Procedural, technical		0
2	Pre-task checks and tailgate sheet sign-off		0
3	Contact area		0
4	Appropriateness and currency of work party Certificates of Competence		0
5	Safety Observer		0
6	Equipment maintenance, test dates, storage and care		0
7	Pre-job inspection of gloves and sleeves.		0
8	Application of insulating barriers		0
9	Second point of contact: Differential potentials		0
10	Work site hazard identification and mitigation		0
11	HV isolation/ reclose block communication procedures		0
12	Other (e.g. basic safety, PPE, traffic control, etc.		0
Total Score:			<b>100</b> 100

Date: 23/11/2020