Promoting and Developing
Social Security Worldwide.

Live Working in Global Electricity Distribution Sector

Dominique VACHER

ISSA electricity section member http://www.issa.int
Professor at Cnam, H&S department http://www.cnam.fr

Owner of DVConseils http://www.dvconseils.fr

Summary

1. Dead work or live work ?
2. Live working in the history
3. Live working: different methods
4. Live working in France & examples
5. Training and competences

1. Dead work or Live work?

What are you paid for?
Are you paid to manage falls from height?
Are you paid to manage electrical risk?

Or are you paid to distribute electricity?

The modern vision is to stop to manage OSH.
The modern vision is to produce and work in safe conditions.

Live working is a response to this modern vision.

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. **Human risks**
2. **Industrial risks**
3. **Commercial risks**
4. **Economical risks**
5. **Utility's reputation and image**.

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. **Human risks**

   1.1 Medicalised ill people at home

   When electricity is switched off, if not prepared, medicalised people at home can face a life issue.

   1.2 People in hospitals

   When electricity is switched off, if not prepared, hospitals have to self generate their electricity. This necessitates maintained equipments: their generators MUST be operational

   1.3 Public life risks

   When electricity is switched off, public life may be affected, for example in case of absence of road fire signalisation, etc…

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. **Human risks**
   1.4 Utility's employees

What is the difference between these 2 networks ?

One is live, the other one is dead !

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. **Human risks**
   1.4 Utility's employees

Statistics show that it is better to know that you are doing live work, rather to believe that you are performing dead work...

But… « avoid the risk » is the first Prevention Principle in EU.

That means that you have to prefer dead work to live work, except when you take more risks by performing dead work.

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. **Human risks**
   1.4 Utility's employees

Statistics show that Low Voltage is more dangerous than High and Extra High voltage (cf Jens Juhling yesterday).
In France, statistics in distribution sector show that dead work is more dangerous than live work.

Low voltage risks are often underappreciated by electricians.

High and Very High Voltage risks are well taking into account by electricians.

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. Human risks
2. **Industrial risks**

When electricity is switched off, industries can be impacted in their production: process and equipment may be affected.

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. Human risks
2. Industrial risks
3. **Commercial risks**

When electricity is switched off, the satisfaction of the utility's clients may be impacted ☹

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. Human risks
2. Industrial risks
3. Commercial risks
4. **Economical risks**

When electricity is switched off, the utility does not sale electricity.
In case of damage to the life of people or to the installation of its customers, the utility's responsibility may be engaged and reimbursements can be necessary.

1. Dead work or Live work?

What are the common risks you have to manage in order to make the appropriate choice between dead or live work ?

1. Human risks
2. Industrial risks
3. Commercial risks
4. Economical risks
5. **Utilitity's reputation and image**

From all the previous risks, utility's reputation and image can be affected.

CONCLUSION: Live work is an answer to the risks management of a distributor of electricity: it allows him to manage his business in healthy conditions for his employees.

2. Live working in the history

1910

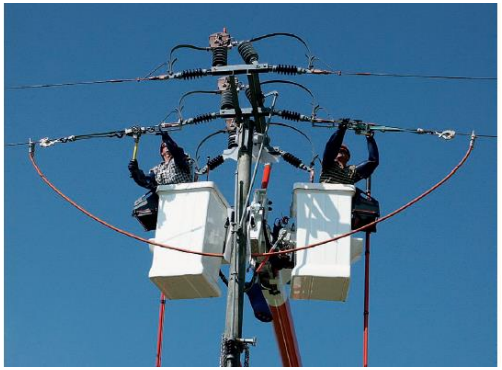
1950

1960

1970

1990

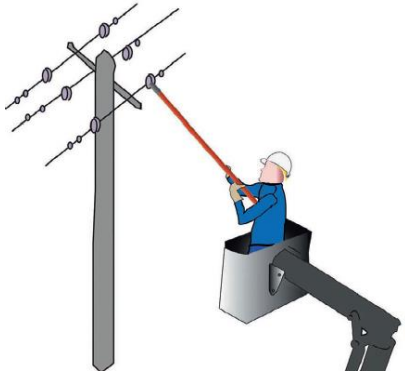
2000



Nowdays

3. Live work: which methods?

There are three methods of live working:



1. Hot stick or Live Line Tool

Hot sticks are used in live line work by having the worker remain at a specified distance from the live parts and carry out the work by means of an insulating stick.

2. Insulating Gloves or Rubber Gloves

A live line worker is electrically protected by insulating gloves and other insulating equipment, and carries out the work in direct mechanical contact with live parts.

3. Barehand or Potential

The barehanded approach has a live line worker performing the work in direct electric contact with live parts. Before contact, the worker's body is raised to the same electric potential as the live parts, and then held there by electric connection, while maintaining suitable isolation from the surroundings which are at different potentials.

4. Live working in France

Live working in France is realised on:

- Low Voltage: Over Head Lines, Cables, Cabinets, Metering
- High Voltage & Very High Voltage: Substation and only on Over Head Lines (not cables)

4. Examples

High Voltage Over Head Line reparation by performing live work with a combination of two methods, **Hot stick & potential**

Very High Voltage Over Head Line reparation by performing live work at **potential** with an helicopter

5. Training and competences

To perform Live work in France, electricians must:

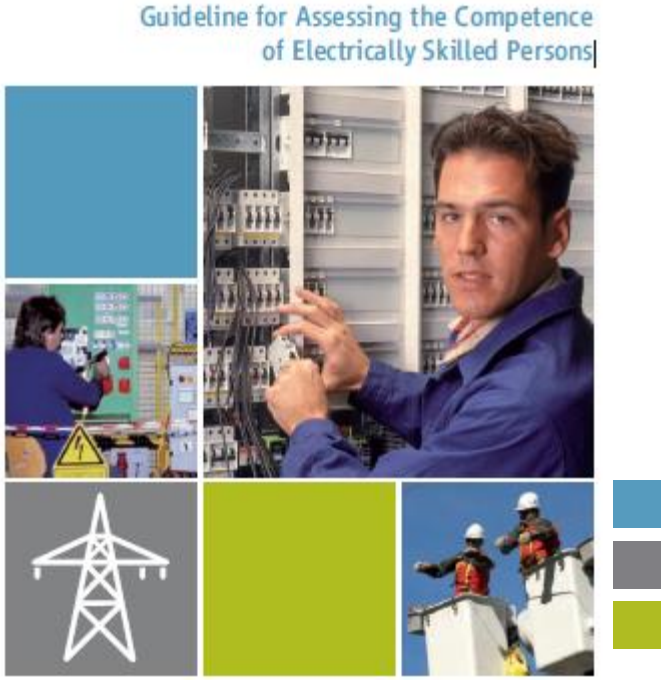
1. have a specific training with periodic updates
2. be fit to work with a medical check and a formal authorisation
3. have a formal recognition from their employer concerning their technical (including safety) competences to perform live working.

5. Training and competences

Concerning the last point 3 (formal recognition from their employer), ISSA has led an international working group which has defined some « International codes for electrician's skills ».

These codes are presented in the « Guideline for Assessing the Competence of Electrically Skilled Persons » available :

https://www.issa.int/details?uuid=8aa3bcf4-b423-4511-8171-dc70c19c3178



Thank you for your attention !

Dominique VACHER
dominique.vacher@dvconseils.fr

http://www.dvconseils.fr