



Mounting of a power plug in a sanitary



Warning sign on the work area of an outdoor substation

The ISSA Electricity Section

The ISSA Section for Electricity is one of thirteen international sections of the International Social Security Association (ISSA) which are divided according to industrial sectors.

The Electricity Section was founded in 1971 with the objective to promote occupational safety and health protection as regards to the commercial production and distribution of electricity and gas worldwide. The Section encourages international exchange of experts with symposia, international workshops and working groups and with international training courses with regard to crucial issues of occupational safety and health protection in this sector. Moreover, the Section publishes the results of its work in form of guidelines and brochures.



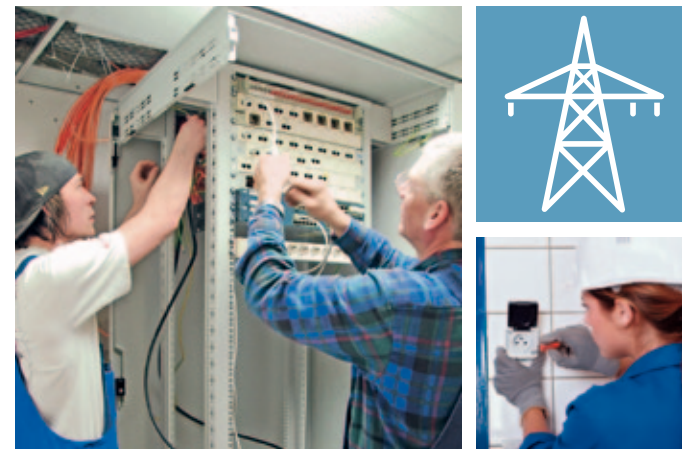
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Five Safety Rules Working in a de-energised state



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Insertion of cables in a control cabinet in a de-energised state

Crucial Requirements before starting electro-technical works in de-energised condition:

- A person responsible for the installation and a person in control of the work activity shall be nominated
- Such persons must be competent to carry out the planned work activities safely
- Do the work activities have to be co-ordinated with other work activities of other enterprises?
- Provisions should be made to enable rescue in an emergency
- Appropriate and safe working equipment and work protection shall be provided to safely carry out the work
- A written permit for the working area should be issued, e.g. if various enterprises carry out works
- Identify adjacent areas with energised parts

The equipment to be worked on is regarded as being de-energised only if the Five Safety Rules have been complied with.

Five Safety Rules

1. Disconnect completely

- Make sure that the equipment to be worked on is completely disconnected
- Ensure that the equipment that will be used to isolate equipment does not produce an electric arc
- In case of remote control ensure that the instructions of the conversation are understood

2. Secure against reconnection

- All switching devices used for disconnection of equipment to be worked on should be secured against reconnection e.g. with lock-out device or blind inserts
- All such switches should be marked with warning signs which give all the necessary information, e.g. point of isolation
- The warning signs and tags and their meaning should be familiar to all employees



3. Verify that the installation is de-energised

- To verify the de-energised state apply appropriate testing equipment, e.g. two-pole low voltage tester
- All testing equipment used shall be tested at the point of work to ensure correct operation
- Disconnect all sources of electrical energy near the work area

4. Carry out grounding and short-circuiting

- Are grounding and short-circuiting measures necessary?
- The grounding and short-circuit protection should be designed to withstand the short-circuit forces on the installation location
- Make sure that the safety measures remain effective during the whole working procedure
- A visual examination of the earthing and shorting device should be carried out prior to appliance

5. Provide protection against adjacent live parts with covers or barriers

- Is the distance determined to adjacent energised parts?
- Are further safety measures e.g. supervision necessary?
- Ensure safe working access clearance from adjacent live parts
- Place danger notices on covers of adjacent live equipment
- Consider of personal supervision is required



Simulated electric arc in a laboratory for testing of workwear

Work Permit

- A written permit which allows the work is required to carry out the work
- The person in control of the work activity may issue work permit after strict compliance with the Five Safety Rules

Reconnection after completion of the work

- Ensure all employees have reported the completion of the work activities
- Make sure that all tools, equipment and devices have been removed from the worksite
- Inform all employees that the work permit is cancelled and the equipment is to be reenergised
- Remove the grounding or short circuits
- Remove locks, notice and tags
- Re-energise the equipment

As soon as one safety measure which ensures the de-energised state is cancelled all de-energised parts must be regarded as energised.