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APPROVED

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Labour Safety Instructions for Electrical Safety of Non-electrotechnical Personnel

No. 4 (DAI - 4)

1. General Provisions

- 1.1. "Instructions for Electrical Safety of Non-electro-technical Personnel", which is hereinafter referred to as the instruction, lays down the safety requirements for the employees of the institution, whose work is not directly related to electric facilities but who, due to the nature of their work, can become subject to the impact of electric tension.
- 1.2. All employees of the institution shall get acquainted with the instruction.
- 1.3. In the institution electrical devices or equipment may only be used by the employees who:
 - 1.3.1. have been acquainted with the instruction and have got the basic idea of the danger that can be posed by electric current;
 - 1.3.2. have undergone training in labour safety, including the introductory training and instruction at the workplace.
 - 1.3.3. Electrical devices or equipment may only be repaired by attested electro-technical personnel who have undergone special training.
- 1.4. **Danger of Electric Current.** Electric current is not visible therefore the human sensory organs cannot predict the potential danger. The nature of the impact of electric current on the living tissue of a human body is diverse and peculiar. The impact of electric current harms unexpectedly and, depending on the current intensity, the duration of impact and other factors, it can cause unpleasant feelings, burns, loss of consciousness, cramps and even death. Electric current does not affect all people equally. The impact is influenced by the electrical resistance of human body, which can vary broadly, depending on the human skin humidity, the state of the nervous system, fatigue and other factors. The impact of electric current can also cause mechanical injuries to a person (by falling from a height, getting injured from the use of instruments, etc.). Electric current can have an impact on a person upon touching conductive parts, which are under voltage, or upon touching parts of an electric facility (casing, cable outlets, etc.), which should not normally be under voltage, but due to the damaged electric facility they are under voltage; such situation is called getting under contact voltage.

Getting under step voltage is a case when a person finds himself/herself near a damaged electric facility and gets flash-burn from the grounded flowing electric current, which causes voltage between both feet. The most common example for this case is a wire of overhead line, which has fallen down on the ground. Such a wire shall not be approached nearer than 8 m, but, in order to exit such an area, one should walk by putting feet to feet.

2. Main Requirements of Electrical Safety

- 2.1. Before the electric equipment or devices are put to use, it shall be checked visually whether the electric connection cables, the insulation of electrical wiring, the casings of equipment, plugs and sockets are not damaged.
- 2.2. Do not touch by hand torn-off or exposed wires that lay on the ground, hang down on the walls, from the ceiling, electric devices or equipment because they can be under voltage.

- 2.3. Do not touch simultaneously the casing of switched-on electric devices or equipment and central heating radiators, water and sewerage pipes or other grounded objects.
- 2.4. Do not dust the equipment or devices that are connected to the electrical power network with a damp cloth.
- 2.5. Electric devices or equipment can be disconnected from the electrical power network by pulling the plug. It is forbidden to disconnect them by pulling the electric cord, which can cause damage to the plugs and sockets or cause short circuit.
- 2.6. It is forbidden to use electric devices with damaged insulation, damaged electric connection cables, electric switches, plugs and sockets, equipment with damaged casing, etc.
- 2.7. It is forbidden to operate damaged electric devices or equipment (noise, sparking, increased heat, smoke, etc. can be indicative of a damage).
- 2.8. When the work is completed, the operating electric equipment and devices must be disconnected, except for the protective lighting and electric equipment that must remain switched-on pursuant to the usage regulations.
- 2.9. All damages of electric devices and equipment must be immediately reported to the immediate superior and the service staff of these devices or equipment (tel. No 67409228). If the damage is likely to endanger people's health or life, the location of damage must be marked off (to lock the premises, to put on warning signs, delimiting ribbons, etc.) and supervised to prevent the access of unauthorized persons until the electro-technical personnel arrives.

3. First Aid to Victims

- 3.1. If an accident has happened due to the impact of electric current, first of all, the victim must be freed from the impact of electric current, first aid must be rendered to the victim and medical service must be provided (an ambulance must be called up 113 or 112 or the victim must be taken to a medical treatment institution).
- 3.2. The accident must be immediately reported to the manager and the labour protection specialist (tel. No 67409117).
- 3.3. Upon releasing the victim from the impact of electric current, special precaution must be observed because, when acting inattentively, the rescuer can also get flash-burn (can get under contact voltage, step voltage). Protective measures must be taken to prevent the victim from mechanical injuries (falling from a height, etc.) upon releasing him/her from the impact of electric current. The victim's release from the impact of electric current can be achieved:
 - 3.3.1. by cutting or chopping the electrical wiring that conducts electricity to the scene of accident (**instruments with insulated handles must be used**);
 - 3.3.2. by pushing the electrical wiring away from the victim with an insulated object;
 - 3.3.3. by tearing the victim apart, snatching his/her clothes if they are dry;
 - 3.3.4. by throwing a rope or an insulated cable around the legs or body or binding a hand with an insulating material and tearing the victim apart.
 - 3.3.5. Depending on the particular circumstances, the victim can also be released from the impact of electric current in other ways.
- 3.4. If the victim is unconscious, the victim must receive first aid:
 - 3.4.1. the victim is turned round on the back, laid on a solid base and his/her respiratory tract is cleared. Victim's head is bent back, the lower jaw is protruded and victim's breathing is examined by observing the movements of chest, listening to the breathing sounds or feeling the breathing flow;

- 3.4.2. if the victim breathes, he/she is lain on one side steadily and is observed until the ambulance arrives;
- 3.4.3. if the victim is not breathing, two intakes of breath are made to the victim (artificial breathing) and the pulse of carotid artery is checked. If the pulse is found, the victim must receive artificial breathing about 12 times a minute (once in five seconds). Every minute the victim's pulse is checked;
- 3.4.4. if the victim has no pulse, indirect heart massage is carried out alternating with breathing:
- 3.4.5. victim's breastbone is pressed 15 times with the frequency 80 to 100 times a minute (the total length of massage cycle is 9-11 seconds) and two intakes of breath are made (no longer than for seven seconds);
- 3.4.6. after every four cycles of breathing and heart massage (the proportion of breathing and heart massage times 2:15. If two rescuers perform resuscitation, then one of them makes the artificial breathing and another one - heart massage, the proportion of breathing and heart massage 1:5, the check for pulse in every 10 cycles) the pulse of carotid artery is checked (the pulse check lasts for five seconds);
- 3.4.7. if there is no pulse, the breathing and heart massage must be continued;
- 3.4.8. if the pulse revives, the breathing must be continued;
- 3.4.9. if the breathing recovers, the victim must be lain on one side steadily;
- 3.4.10. if the consciousness recovers, care of the victim must be taken and his/her condition (consciousness, breathing, pulse) must be controlled. Without doctor's permission, the victim may neither move, nor resume work - it can cause sudden deterioration of victim's health;
- 3.4.11. resuscitation measures must be continued until:
- 3.4.12. the victim's pulse and breathing recover,
- 3.4.13. the resuscitation is taken over by professionals,
- 3.4.14. the rescuer becomes exhausted.

4. Final Issue

- 4.1. Upon coming into force of these Regulations, to acknowledge the invalidity of RSU Labour Protection Instruction No 4 (LSI-4) Labour Protection Instruction 1. (A) for the electrical safety group personnel, which was approved by RSU on 9 September 2010.

5. Contents of First-Aid Kit (Medicinal Products) and their Usage Instruction

No.	Names, sizes, package type of the first-aid kit objects and materials	Pcs (minimum)
1.	Kit usage instruction	1
2.	Disposable gloves	1
3.	Safety pins (medical tape 10 – 15 cm)	1(4)
4.	Scissors (10 – 14 cm) with rounded ends	1
5.	Artificial breathing mask in packaging	1
6.	Triangle bandage (96x96x136 cm) in packaging	1
7.	Spoiled adhesive tape (2 – 3 cm)	1
8.	Wound plasters (different sizes) in sterile packaging	15
9.	Net-shaped bandage No. 3 (40 cm)	3
10.	Foil cover, one side metallic, the other side in a bright colour	1
11.	Fixing gauze bandages (4 m x 10 cm) in sterile packaging	4
12.	Fixing gauze bandages (4 m x 5 cm) in sterile packaging	2
13.	Pressing bandage packet in sterile packaging (instead of tourniquet)	2
14.	Gauze set (600 m x 800 mm) in sterile packaging	1
15.	Gauze set (400 m x 600 mm) in sterile packaging	1

Minimum first-aid kit usage instruction

- 5.1. Disposable gloves are used to protect yourself from infection with AIDS and other blood infections. Put on the gloves, if you render help to a bleeding victim!
- 5.2. Safety pins are used to fasten a large size bandage.
- 5.3. Scissors are used for cutting the victim's clothes to get access to a burn or a bleeding wound of the injured body and for cutting of bandage materials.
- 5.4. Artificial breathing mask. Take out the mask! The mask valve must be opposite to your mouth and must let in the air of your exhalation (verify!). Apply artificial breathing to the victim "from mouth to mouth" through the mask valve.
- 5.5. Triangle plaster is used for the fixation of an arm, the application of a pressing bandage or the wound closure.
- 5.6. Fixation of an arm. The injured arm is hung in one neckerchief, whose corners are tied up on the nape; make a scarf from another neckerchief and tie up the arm, which is hung up to the neck, to victim's chest.
- 5.7. The application of pressing bandage to a heavily bleeding wound. Make a scarf from one neckerchief and pull it over a roller of material (an unopened bandage packet, a spool of gauze bandage, a full pack of cigarettes, etc.), which is put on the wound, so tightly that the bleeding stops. It is advisable to cover the wound with bandage compress before applying the bandage.
- 5.8. The adhesive tape is used to fasten the bandage. Cover the wound with a sterile compress and fasten the compress edges to the skin with the adhesive tape. Similarly you can fasten the end of a gauze bandage.
Attention! The adhesive tape does not stick to damp (bloody) skin or bandage. The adhesive tape may only be fastened to undamaged skin.

- 5.9. A wound plaster is used for small wound binding. The wound may only be covered with plaster's pad, but no way with its sticky part.
Remember! Upon storage the adhesive tape loses adhesiveness fast therefore wound plasters and the adhesive tape in the first-aid kit must be replaced on a regular basis.
- 5.10. The net-shaped bandage is used to fasten the bandage compress on the wound. The wound is covered with the compress and the net-shaped bandage is put on the injured body part thus pressing the compress to the wound. These bandages are the most convenient for binding an arm, a leg or the head.
- 5.11. The pressing bandage packet is used for the fixation of an arm, the application of a pressing bandage or the wound closure. The packet consists of a bandage with a bandage compress at its end. The application of pressing bandage to a heavily bleeding wound: put the compress on the wound, fasten it with several bandage windings, then put a roller of a solid material (best of all, another bandage packet with the whole packaging) on the wound and bind it tightly to the wound. Wound closure: put a compress on the wound and fasten it with a bandage.
- 5.12. 11.,12.,14.,15. Gauze bandages are used for wound closure.
- 5.13. Upon bandaging a larger wound, cover it with a bandage compress beforehand.