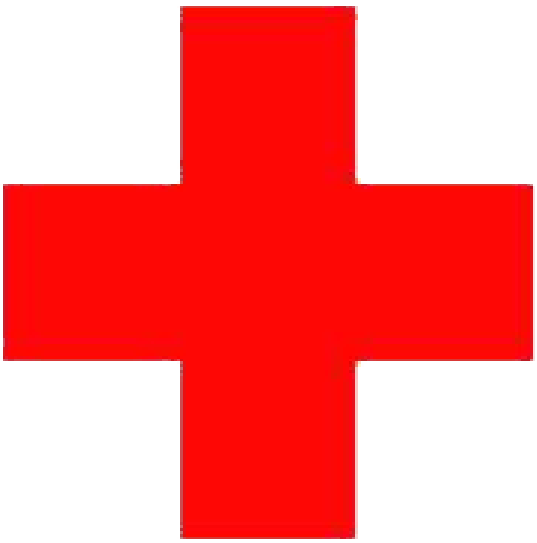
# ACTION PLAN FOR EMERGENCY PREPARDNESS, ENVIRONMENT ACCIDENTS AND FIRE PROTECTION



## CONNECTED WIND SERVICES AB

Skapad 2009-02-10, KF. Reviderad 2012-12-12, AMM. Godkänd 2012-12-15, KF. Rev. 4. Reviderad 2015-02-27, CED, Rev.5. Reviderad 2016-02-10 CED Rev.6.

## INDEX

# 1 BACK GROUND

## 1.1 Purpose

The purpose of the action plan is partly to prevent accidents and illness in connection with the work, and partly to have preparedness for an accident or other crisis situation if it would happen. The action plan also contains information on how fire protection is organized and how it is followed up.

# 2 EXPLANATION

## 2.1 First aid

First aid means the aid operations that must be carried out immediately when a person has been injured or is acutely ill. For example, it may be to keep a person alive until the ambulance comes or to reduce the damage if someone has gotten corrosive substance in the eye or elsewhere. First aid also means ensuring that the injured person or the sick person comes under care. In order to do this, you need preparedness and knowledge for first aid as stated in this action plan.

## 2.2 Crisis and crisis support

A crisis is often described as an event where one's previous experiences and learned approaches are insufficient to understand and manage the current situation. A crisis can be triggered by various events such as accident, death, disability and threats. Both the victim and those involved in the event may need crisis support. Crisis support means the immediate care of a person in crisis and any subsequent professional efforts. Emergency preparedness is about our ability to prevent, resist and handle extraordinary events before, during and after a crisis.

# 3 THIS HAPPENS IN A CRISIS

## 3.1 The crisis reaction´s four phases[1]:

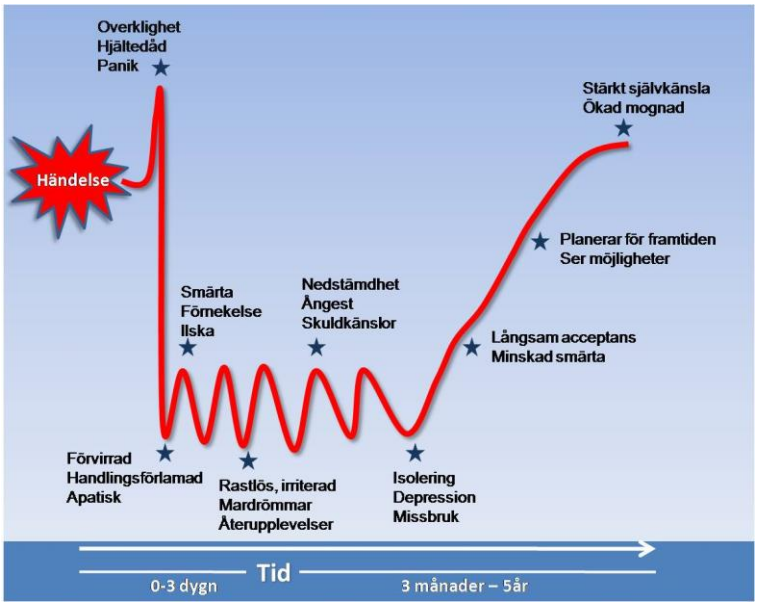
**The shock phase** can be from one minute to three days. It is common to become paralyzed, change memory and be emotionally turned off, but the victim can react in different ways. The basic need in this phase is safety, caution, holding hands, getting something hot to drink, etc. Deeper conversations about what has happened, feelings should wait. If the shock phase becomes prolonged, the risk of self-destructive impulse acts increases and it is therefore important to never send someone who is in shock home to loneliness. Contact relatives, friends or colleagues.

**Reaction phase** is characterized by longing, protest, pain and depression. Denial (a defense mechanism) means that some people do not tell you that an important life event has occurred, but only about their anxiety (as a result of the experience) or their sleeping problems. Therefore, the affected person must get the opportunity to tell and describe their life events.

[1] POSOM, The phases of the crisis

**Processing phase** is a process that can take time. The crisis / loss is realized and processed step by step. The sorrow can recur in irregular waves and can easily be misinterpreted as a depression unless the events and relationships behind it are identified.

**New orientation phase** is when the crisis / loss no longer needs to interfere with other people and activities. These phases are described in the picture below.




Figur 1. Illustration av krisens faser. Källa: POSOM.

## 4 PREVENTIVE ACTIONS

Workplace risks must be mapped and assessed according to the risk assessment routine. All risks should be avoided, if it is impossible to avoid completely the risks should be prevented, for example by using other materials, working methods or division of labor. If the risks persist, there should be detailed instructions on how to perform the work. There should also be personal protective equipment for the tasks that involve extraordinary risks.

Before commencing work that may entail an increased risk to employees' safety or the environment, the risks shall be identified and a work and environmental plan shall be established by the responsible project / supervisor. The plan shall report identified risks and what measures should be taken to reduce them.

If work where there is a risk of employee safety shall be performed in a different place or country than the main and local offices in Sweden, the responsible person shall establish a list of important local telephone numbers that may be needed during a crisis: hospital, poison information and possibly other local emergency numbers. The responsible person shall also state where the work is to be carried out to the responsible in the office.

Everyone is responsible for reporting incidents, improvement proposals and dangerous situations to prevent accidents and to improve work.

# 5 RISKS

The following risks have been identified as serious in the company's risk assessment.

## 5.1 Traffic accidents

Travel by car is a natural part of the work, which means that the risk of traffic accidents is relatively high. Limiting the harmful effects of a traffic accident is an important part of the preventive work. The working hour law must be followed. If tired, take in at a hotel if possible. Cars purchased / rented must maintain a high level of safety, both active and passive. The cars should be equipped with ABS brakes and airbags. All cars must be fitted with the first aid equipment and possibly fire extinguishers.

Heavily loaded service cars make the risk of traffic accidents bigger, eg. puncture, extended braking distance, etc. Therefore, trailers should be used for transport at oil changes.

## 5.2 Falling accident

It is mainly employees of Connected Wind Services who carry out high-altitude work to a large extent. A falling accident almost always means fatal outcome. Safety training is given to everyone who is to climb the work / mast (high altitude work). Safety equipment, both personal and in the turbines, is checked for function. Service technicians and others who always climb are given a longer security education and are also subject to regular medical examinations. Company safety precautions must be respected.

## 5.3 Injury caused by electrical current

When working with electrical systems in wind turbines there is a risk for injury by electrical power. An accident can cause severe burn and shock damage. Employees working with or near electrical equipment are trained in electrical safety issues. People who work with power must have competence for it. Each service car is equipped with an electrically insulating tool and necessary measuring equipment.

## 5.4 Hydraulics

During work on or near hydraulic systems there is a risk of damage caused by high pressure, oil mist and clamping and crushing of movable machine parts. Employees working with or near hydraulics must have a good knowledge of the risks of hydraulic systems.

## 5.5 Rotating machine parts

There is a danger of getting caught with clothes or equipment in rotating machine parts, especially in confined spaces in a wind turbine. Employees are made aware of the risks. Work on rotating machine parts should be avoided as far as possible. When working on or close to rotating parts, the fall protection equipment must be taken off. Loose clothing, long hanging hair, etc. must be avoided.

### 5.6 Clamp and crush injuries

Clamp and crush damage can occur when working with replacement of main components, when using hydraulic tools and when using mobile cranes or other lifting equipment. Protective equipment such as steel reinforced shoes, helmets and protective gloves should be used. Service technicians should be aware of the hand signals when lifting.

### 5.7 Hot works

When doing hot work there is a risk of personal injury and property damage. Only staff with a certificate of hot work may work with this and only with permission from the manager or owner. Equipment must be checked before the work starts. Protective equipment must be used. Fire extinguishers and fire blanket should always be accessible.

### 5.8 Work with high voltage

When working with high voltage there is a risk of severe burns and accidents in the worst case of fatal outcome. The staff should therefore follow the safety manual and have ESA training.

### 5.9 Falling objects

There is a risk that both employees and third parties will be injured by falling objects, when lifting and lowering material to the machine house at the turbine. Therefore, contact between the person on the ground and the person in the machine house is important. Prohibition to stand under suspended load. Visitors should also take caution and use protective equipment.

### 5.10 Strain injuries due to heavy and uncomfortable work

Particularly in the field of service and maintenance of the wind turbines, heavy components need to be lifted in place in difficult accessible areas. Load on the back and muscles can cause back injuries and stretches. Service and assembly work is facilitated through the procurement of machinery and tools to improve the working environment. Employees are alerted to the risks and are trained in lifting technology. Protective shoes and other applicable equipment shall be used. Further guidance for limiting risks can be found in the Safety Manual.

## 6 ORGANISATION

### 6.1 Safety representative

In a workplace that has more than 5 employees, a safety representative and a replacement are appointed. The safety representatives represent the employees in the work environment work and shall:

- Ensure that the working environment is good
- Check that a systematic work environment work is done, ie risk assessment, risk reduction and follow up the work environment work.
- Participate in and plan all aspects of the work environment, such as before a reorganization or when new work methods are introduced.

More information regarding safety representative can be found in the routine "Rental of premises and occupational safety check".

### 6.2 Fire protection

The company has a fire protection organisation with fire protection responsible at respective offices and service stations. More information about the company's fire protection can be found in section 12 below.

## 7 HELP TO GET IN OUR VICINITY

**The Poison Information Center (GIC)** has the primary task of informing by telephone about the risks, symptoms and treatment of various types of acute poisoning. Telephone counseling is available 24 hours a day every day for the public and health care facilities.

**Previa** (occupational health care) can assist with guidance on dealing with crisis situations, first aid training, and training of resource staff, help from business professionals, nurse, psychologist, etc.

**Primary health care** in the municipality can be used for practically the same as occupational health care services.

**On duty priest** can be a resource in difficult situations.

**The Occupational Safety and Health Council** (Arbetsmiljöverket) shall be contacted in the case of accidents involving death or more serious personal injury or if an accident has affected several workers. The same applies to casualties that have posed a serious danger to life or health. The notification must be made to the Social Insurance Office (Försäkringskassan) in case of occupational injury, in consultation with the safety representative.

## 8 LIFE SAVING FIRST AID[2]

Check step by step:

1. Consciousness
2. Breathing
3. Pulse

Then give the necessary help.

**1. Is the person conscious?**

1. Shake gently the shoulders and shout "How are you?".
   Yes, the person reacts: stay there - the person may get worse.
   No, the person is unconscious: check the breathing.

**2. Does the person breath?**

2. Open the airways by bending the head of the unconscious person backwards using a hand on the forehead.
3. Raise the chin with two fingers.

[2] Vårdguiden Stockholms Läns Landsting, Anna Bendt, 2009-12-09

4. Check if the chest rises.
5. Listen for normal breathing sounds. Do you feel any breathing on your cheek?
   Yes, the person breathes normally: put in stable side mode. Call 112.
   No, the person does not breathe: check the pulse and call 112.

**3. Does the person have a pulse?**

Put your fingers in the pit beside the larynx and feel for a pulse for no more than ten seconds.
No, no pulse: Call 112 and start immediate heart-lung rescue (CPR).

### 8.1 Heart and lung rescue (CPR)

The following are important to consider in cardiovascular and pulmonary resuscitation:

- Make sure that the person is on the back, preferably on a hard surface.
- CPR is going to continue all the time.
- Do not stop breathing or pulse control.
- If possible, replace the one that compresses every two minutes.
- Only quit CPR if the person starts to breathe normally.

**Here is how to do it:**

1. Put your hands (one on top of the other) in the middle of the chest where the ribs meet.
2. Press down the chest with straight arms about four to five centimeters (use your own body weight to help). Press quickly and fast 30 times, faster than one pressure per second.
3. Release the chest between each pressure (compression).
4. After 30 compressions, you make two ventilations, see mouth-to-mouth breathing below.
5. Then repeat 30 compressions and two ventilations until the pulse returns, or as long as you are able to until the paramedics arrive.

### 8.2 Mouth-to-mouth-resuscitation

1. Make sure that the person has free airways
2. Open the airways by bending the head of the unconscious person backwards using one hand on the forehead and two fingers under the chin.
3. Squeeze the nostrils.
4. Take a normal breath, let your own mouth cover the unconscious person's mouth.
5. Gently blow air until it appears that the chest is raised. The ventilation should take a second. Always make two ventilations after each other.
6. Alternate 2 ventilations with 30 chest compressions.
7. Continue until paramedics arrive.
8. Put the person in recovering position if the person starts to breathe.

### 8.3 D-CPR, use of defibrillator[3]

1. Start CPR as soon as possible and continue until ready for defibrillation, follow the instructions for CPR as described above under item 8.1.

[3] Kursbok: D-HLR, HLR med halvautomatisk defibrillator, från HLR rådet (2011)

2. Retrieve the defibrillator and place the device next to the person.
3. Start the defibrillator.
4. Remove the person clothes, wipe off if necessary and shave off hair where the electrodes should sit, then attach the electrodes. However, avoid placing the electrodes directly over the dose if the person has a pacemaker. Wet floors are no problem but do not stand in the same puddle.
5. The defibrillator analyzes the heart rate to determine the need for defibrillation.
6. Follow the defibrillator's instructions:
   - For advice to defibrillate, CPR should stop and no one must touch the person, so say loudly, "Do not touch him / her I defibrillate now".
   - For advice not to defibrillate continue CPR until the defibrillator provides new advice.
7. Continue CPR for 2 minutes immediately after defibrillation, minimize the retention, then the defibrillator will make a new assay with the following advice to follow.
8. Always follow the advice of the defibrillator until the person shows clear signs of life, then put the person in recovery position or until the paramedics arrive

### 8.4 Recovery position

Recovery position facilitates breathing and prevents choking. Here is how to do it:

1. Put the person on their back.
2. Get on your knees on the side of the person.
3. Place the arm nearest you straight out and bent upwards.
4. Place the other arm over the chest.
5. Bend the distant leg.
6. Grasp the shoulder of the person and push down the knee on the bent leg. The person then rolls over so that the bent knee forms almost the right angle.
7. Place the person's hand under the cheek and make sure that the person is laying steadily.
8. Check that the airways are open.
9. Keep the injured person warm.

### 8.5 First aid in case of burns

Cool the burned surface with water for at 15 minutes, but preferably 30 minutes. Keep in mind that the water should not be too cold as there is a risk of frost bite instead.

### 8.6 First aid in case of bleeding

1. Remove any covering clothing.
2. Put pressure on the wound with fingers or hand, preferably with a bandage or clean cloth.
3. Enhance the bandage if it bleeds through.
4. Raise the injured body part above the heart height.

**Squirting, pulsing or severe bleeding**

1. Hold the wound edges together and push inwards at the same time.
2. Make a pressure bandage and place it over the wound.

3. Finish by wrapping a bandage or fabric around the injury to maintain the pressure across the wound. If it is a neck injury, hold the wound edges together and press the wound.
4. Place the bleeding body part high, as it cuts the blood pressure slightly.
5. Call for ambulance or go to the hospital.

### 8.7 First aid in case of splashing in the eye

Rinse with water for a few minutes, at least 20 minutes when splashing with corrosive substances.

### 8.8 First aid in case of inhalation of hazadous substance

Take the injured person into fresh air, loosen the clothes, call 112 and request Poison Information – open 24 hours every day.

### 8.9 First aid in case of electrical accident[4]

1. Make a quick assessment of the situation
2. Cut the power and loosen the injured person without exposing yourself to danger.
   - Switch off the power with the switch by pulling out the plug or otherwise.
   - If the power can not be quickly broken, loosen the injured with an insulating tool, eg. with a dry piece of floorboard, a string or a fabric.
   - Never use a damp object or metal object for detachment.
   - In case of high-voltage accidents, the actual rescue measures should never be taken until a professional in the electrical industry has broken the power.
3. Check the condition of the injured person
   - Address and shake the shoulders on the injured person. If he/she does not answer or move, he/she is likely unconscious.
   - Check the breathing by placing your back of your hand in front of the unconscious nose and mouth. If you can feel an air flow with your hand and see that the chest moves, the person is breathing.
   - Now you can turn him/her into recovery position to ensure breathing and make an emergency report.
4. Call for help; call 112

If the person is seemingly lifeless, call the emergency number 112 first.

1. Be calm and speak clearly:
2. Tell us about the electric shock.
3. Tell us if there are people in danger.
4. State the exact address and, if necessary, the driving instructions.
5. Tell us about the condition of the injured person: Can he/she be woken up and breathe normally. If the patient is seemingly lifeless, inform that you start resuscitation.
6. Answer the questions.
7. End the call only when you are allowed to do so.
8. Immediately return to the patient and start resuscitation.

[4] Tukes Säkerhetsteknikcentralen, 2007-03-01

**First aid in case of shock**

Electrical accidents often cause shock conditions where shock symptoms develop rapidly:

- Vertigo
- Thirst
- Rapid and weak heartbeat
- Pale and cold skin

Without the first aid, the shock condition becomes more difficult and can lead to unconsciousness. The harmful effects that the shock causes can be prevented by the right first aid:

1. Lay the person down on the ground
2. Raise the person's legs
3. Make sure help is called
4. People in shock are freezing - keep the person warm with a blanket, coat or a heat blanket
5. Perform calmly
6. Do not leave the shock patient alone if it is not necessary to call for help

# 9 ACTION PLAN IN CASE OF SEVERE ACCIDENT

**You who are first in site or first gets informed will be responsible for the first actions!**

- **Call 112** and request an ambulance, fire department or police as required.
- Provide first aid as needed, stop bleeding and ensure that the air ways are free, provide CPR, etc.
- Secure the accident location for further accidents and for investigation.
- Make sure someone meets the paramedics and shows them the way.
- Use a checklist for a workplace accident to get guidance and to tick off the actions taken.

# 10 EMERGENCY PREPARDNESS IN CASE OF ENVIRONMENTAL ACCIDENT

Risk of environmental impact occurs primarily in service work on wind turbines, but also in mast work. The greatest risk arises when handling oils in connection with oil change in gearbox and hydraulic systems. Equipment used for lifting of oils should be checked before use. Defective equipment must be discarded.

In the case of accidents or mishaps that affect or threaten to affect the external environment, measures must be taken to prevent or limit environmental impact. In each service car there must be equipment for cleaning oil spill. This will be used to pick up the oil that is on the ground and can be disposed of immediately.

Contaminated materials such as absorbents, gravel etc. should be taken care of to the greatest possible extent. The contaminated material is collected in a sealed plastic bag or similar and sent to the municipal waste disposal plant.

If the emission is so large that the above measures are insufficient, measures should be taken to prevent or limit the extent of the emission, see checklist below.

**Checklist for action in case of environmental accidents.**

- Prevent the accident from worsening by stopping the source of the spill, such as stopping the oil spill
- Limit the spread of potential emissions through embankment, absorbent material or other appropriate measures
- If a discharge of oils or chemicals is so large that it can not be managed on its own, alert the Rescue Service via 112 and announce what has happened
- Describe the road to the accident site as accurately as possible for the Emergency Service or meet them at the appropriate place
- Contact the supervisor as soon as possible and report what has happened and what actions have been taken
- Management takes the necessary measures, such as contacts with owners of the wind farm, answering any questions from the media etc.
- Responsible manager compiles a report of the event and reports on to the management.

All environmental accidents must be reported to the municipality's environmental office, telephone number can be obtained from the directory inquiries (995) 118 118. In all environmental accidents, a TAF report must also be written.

## 11 ILLNESS AND DEATH

### 11.1 Illness of an individual person

Efforts may need to be taken in, for example, high stress or other ill health. The respective CEO decides whether support persons should be contacted for action. The support persons decide on a case-by-case basis with the person concerned which measures need to be taken. The measures may consist of contact with occupational healthcare, priest or other professional person who can assist in the current situation.

### 11.2 Death of employee during working time

- Call 112
- Directly involved persons are gathered and informed by the CEO or by this delegated person.
- The CEO or the delegated person informs the police who in turn informs relatives.
- Others are informed.
- Gather at a certain time for joint processing, preferably with external support.
- Contact educated crisis and conversation personnel.

Post work

- The CEO contacts relatives for decisions on what to do with personal belongings in the office
- The CEO or the delegate will find out when the funeral is and inform the affected, send flowers and representatives to the funeral, follow up and keep in touch with relatives for at least 3-6 months.

### 11.3 Death of employee during free time

- All employees are gathered and informed by the CEO or by the delegated person.
- Gather at a certain time for joint processing, preferably with help and support from outside.
- Others are informed.
- See "Post Work" above in Chapter 11.2.

### 11.4 Death/severly ill relative

- If a relative of a worker dies, the person concerned shall be offered to travel home immediately.
- Appointed by the crisis group shall offer to keep the employee company until he/she is with the family.
- Appointed by the crisis group must respect the employee's decision as to whether the rest of the employees should be informed.
- Appointed by the crisis group serves as a support for the employee in planning time off and work in the meantime after the death.
- If necessary, the employee is offered conversations with educated crisis and conversation personnel.

## 12 IN CASE OF FIRE

**Fire protection policy**

Our workplace should be safe for our employees, visitors and society at large. Our overall focus area is preventive work.

We will continuously carry out a systematic fire protection work and through this work:
O Minimize fire hazard
O Facilitate effective fire fighting
O Avoid personal injury in case of fire
O Limit material damage in case of fire

First of all, we should work to prevent fires from occurring. Fire protection work shall be governed by the risks at each workplace.

The operation shall be organized so that the responsibility for fire safety is clear. All employees should know how and by whom fire protection issues are handled.

All employees should be able to prevent fires through knowledge of fire hazards at the workplace.

At each workplace fire protection must be documented. The documentation shall describe how fire protection is organized within the current operation and established in accordance with current regulations.

## 12.1 General fire protection regulations

**Arrangement of combustible material and containers**
Fires in containers and combustible structures are commonplace. Containers, wooden pallets or other combustible material must be stored at least 6 meters from the house or the roof.

**Flammable goods**
Flammable goods shall be placed at the designated place after the end of the work.

**Electrical installations & technical areas**
Power stations shall be free from combustible material (1.2 meters in front).
Technical spaces such as electrical rooms, server rooms may not be used as storage spaces for unintentional combustible material.

**Escape routes**
Evacuation routes, pathway for evacuation routes and evacuation signs must not be blocked or obscured.

**Fire-fighting equipment**
Fire extinguishers, fire blankets and associated warning signs must not be blocked or obscured.
The equipment and signs must be visible in the premises / workplaces.
Used extinguishers should be reported immediately to the local fire protection officer.

**Smoking**
Smoking must only be done outdoors. Cigarette butts and ashes must not be thrown away from combustible material.

**Hot work**
In case of hot work, the certificate for the performer is required for the work permit.

**Candles**
Candles may only be light up during surveillance.

**Vehicles**
The service cars must be equipped with fire extinguisher, fire blanket and first aid kit.
NOTE! Local fire protection regulations may also occur, information about this can be found in the premises fire protection binder or by contacting the local fire protection officer.

### 12.2 In case of a fire alarm

If possible use the template "Checklist in case of Fire; Evacuation". If it starts to burn, it's most important for you and others come to safety. Warn the surroundings that a fire or other acute event has occurred. Then alert the rescue service by dialing 112. Talk about what's happened, where you're calling from, and who you are. Try to extinguish the fire, but only if you or others are not at risk of injury.

When you call be prepared to inform about:

- who you are and where you are calling from
- what happened and how many people are involved
- type of injury or discomfort
- You may need to provide directions

Go out and meet the ambulance or other emergency vehicle

**SAVE** everyone who are in obvious danger and warn the surroundings

**ALARM** rescue service, ambulance and police via SOS on phone 112

**EXTINGUISH** if you are able to do it without taking any unnecessary risks

**EVACUATE** via available escape routes and go to collection point

**If the escape routes are filled with smoke**

If the escape routes are filled with somke, evacuate through windows or alternatively stay in the room and wait for the emergency service. Close doors to prevent the spread of smoke and fire. In the event of fire the smoke rises upwards. Therefore, it is easier to see and breathe down the floor. **Always crawl out of a burning or smoke-filled room**.

**Advice**

- Close the doors after you when you go out to reduce the spread of smoke and fire
- Burn in a saucepan - move the pan from the plate and quench the fire with a lid

**Use of fire extinguisher**

- Remove the lock and then loosen the hose and direct it towards the fire
- Place yourself as close to the fire as possible
- Trigger the extinguisher
- Always keep a low body position when spraying the extinguisher against the fire
- Move around the fire to allow you to extinguish properly

**Exemple of use:**

| | |
|---|---|
| **Carbon dioxide** | Against fire in liquids, plastics and electrical equipment |
| **Foam** | Against fire in wood, fabric, paper, plastics, liquids |

### 12.3 In case of a false alarm

1. Look up the alarming detector.
2. Turn off the alarm detector on the control panel.
3. Note that the alarm must not be turned off before the entire building has been searched if no alarming detector is found.

### 12.4 Education and competence

The person appointed as fire protection responsible shall have relevant training and skills to carry out the systematic fire protection work on the site. The education should also be adapted to the risks at the current workplace.

As part of the preventive fire protection work it is also important that the employees get basic knowledge. This is done by informing all employees about the company's fire protection when recruiting. The following information must be included:

- Our fire protection work (Fire Protection Policy, Organisation, Fire Protection Regulations, etc.)
- Fire hazards on site
- Related routines depending on risks (eg hot jobs, chemical handling)
- Escape management (Save - Alarm - Extinguish)
- Fire extinguisher and first aid equipment function and location

### 12.5 Evacuation exercise

All employees should have the knowledge so that they can help to quickly evacuate the building in an emergency. Therefore, evacuation exercise should be carried out if necessary, but at least once a year. During the exercise the following should be considered:

- Routines for the fire alarm
  - Where are the evacuation alarm buttons?
  - How to activate the evacuation alarm?
  - How does the evacuation alarm sound?
- Location of evacuations routes
  - How to open the evacuations routes?
  - Go the evacuation routes all the way out
- Assembly point
  - Where is it?
  - Routines at the assembly point?
- Fire extinguising equipement
  - Where are the extinguishers?