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HDI-Gerling Risk Engineering Services

Risk Engineering Guideline

Impairment of fire protection systems

Basic protection systems
should not be impaired without
adequate compensation.

international



An impairment of fire protection systems increases the risk.

In order to reduce the risk of fire during the impairment of fire protection systems, additional fire prevention measures must be taken.



1 Introduction

Fire protection systems, as for example automatic fire extinguishing systems and automatic fire alarm systems, are essential components of fire protection concepts. They also provide a high success rate in extinguishing and/or detecting fires. Multiple examples of losses show that companies without adequate fixed fire protection in place often suffer a total fire loss with high property damage and business interruption claims.

The efficiency and reliability of fixed fire protection is thus an essential factor to reduce potential fire damage and to maintain the business continuity of a company. In order to guarantee this to a maximum extent, repair works, periodic

servicing and corrective maintenance to the fire protection systems cannot be avoided. Important: During an impairment, the risk of having a loss increases mainly because of two reasons: Firstly, the protection systems that are relevant for the safety are not in operation. Secondly, servicing and maintenance include activities that increase the risk of starting a fire.

Proactive planning of the impairment plays an important role to ensure that servicing, maintenance and repair works are carried out properly as well to restore the fire protection system immediately after the works have been completed. This guarantees that the work can be carried out as smoothly as possible and that the fire protection system is again operational as quickly as possible.



For this reason, it makes sense to subdivide the measures for the impairment of fire protection systems as follows:

- Measures **before** the impairment
- Measures **during** the impairment
- Measures **after** the impairment/restoration of the fire protection system

2 Risk situation

Based on experience, the majority of losses happen outside of the “normal” operations. Why is the risk for a company increased specifically during repair, service and maintenance works? The reason is given by the fact that the adequate protection level is not provided and that activities can therefore be carried out outside everyday operations. Additionally, repair and service works often involve activities with an increased accident risk or ignition potential, such as welding, separating and cutting.

In order to reduce the risk of fire during the impairment of fire protection systems, additional fire prevention measures must be taken.

3 Measures before the impairment

Servicing, repair and maintenance works should be carried out by a (VdS-) accredited installer; preferably by the company that originally installed the fire protection system. The servicing company must be certified for the systems concerned.

Basically, the planned impairment should be reported to HDI-Gerling (possibly via the insurance broker) at least 14 days before the start and any compensation measures required are to be clarified. (Attached form “Impairment notification”.) Unplanned interruptions (disruptions) are to be reported without any delay. If an unplanned impairment should occur during the night, HDI-Gerling (possibly via the insurance broker) is to be informed on the following day. This obligation to inform does not apply if it concerns the impairment of e. g. a single automatic fire detector – under the condition that monitoring of the area involved is not compromised.

The impairment can only be instructed by an employee familiar with the areas and their associated risks and hazards. This should be closely coordinated with the fire safety officer. The instruction should be given in written form and after the impairment, the document is to be kept on file for at least half a year.

The wide variety of different fire protection systems does not allow to go into detail on all necessary measures. This is why the following list of items does not pretend to be complete and should be adopted or extended to the respective fire protection system when required. Furthermore, reference is made to the relevant sections in the various (VdS-) guidelines to ensure the operational readiness or respectively for preventive measures and standard operating procedures if a system is not fully operational.





The following should be considered before the impairment:

- Optimal preparation and organisation of the activities, in order to keep the impairment as short as possible. This includes, among others:
 - the setting up of a time schedule,
 - the provision of all required materials (e. g. replacement parts, seals etc.),
 - the coordination of required specialised staff,
 - the avoidance of work interruptions, e. g. of repair works during night-time periods, week ends or public holidays.
- Definition of the areas to be impaired:
 - restriction to small sections if possible,
 - no general impairment of the entire system.
 If work is being carried out on the pipework of an extinguishing system, only the respectively affected section should be shut off. If the zone protected by one section covers several rooms, appropriate measures should be taken, e. g. by insertion of blind flanges, protective caps, etc., to isolate the pipework only in the rooms where the work is being carried out.
- When work is being carried out on the water supply of (e. g. a sprinkler system), one source of water should be kept operational (compressed air water tank or pump) whenever possible or an alternative feed should be established.
- When the only water supply for an extinguishing system is shut down or fails, an alternative water supply should be provided. If the system is equipped with a fire department connection (e. g. DN 150 with 4 x B-fitting), a hose connection should be set up between this connection and the next hydrant, integrating a booster pump if necessary.
- Provision of suitable substitute systems (e. g. mobile fire alarm systems).
- Provision of suitable manual fire extinguishing equipment (fire extinguishers, installation of fire hoses ready for use, etc.) combined with a fire watch, or at least an increased number of patrols, e. g. by guards.
- Before a system is partially or completely impaired, all parts of the company site should be inspected in order to ensure that there are no hazards or signs of a fire.

- If on a site with multiple users a common fire protection system is operated, all the users must be informed about the impairment of the system and joint compensation measures should be taken.
- Notification of the responsible public fire brigade and the works fire brigade.
- Notification of the employees, the plant management and the internal security/safety management.
- Any work that involves a fire hazard, e. g. welding, cutting and burning operations, may not be carried out in the areas affected by the impairment or may only be carried out with strict adherence for the applicable safety regulations for operations involving fire hazards (see HDI-Gerling Risk Engineering Guideline “Hot works” and “Hot work permit”).
- In order to be able to respond at short notice in case of an unforeseen impairment of fire protection systems, detailed procedures should be elaborated in advance. These are then immediately available whenever required.

If fire alarm and extinguishing systems are a safety-relevant element of the building permit and the occupancy permit, this permit for use could be restricted in principle by this impairment. Additional protective measures defined by the responsible authority (e. g. fire protection service department) may have to be taken into account.



5 Measures after the impairment

Ensuring complete automatic operational readiness without delay should include the following:

- Check of all fittings and switches for (automatic) operational readiness, if necessary securing in open/closed position with a pad-lock.
- Performing a flushing test at the riser of a sprinkler system.
- Notification of all departments involved in the process (employees, safety organization, public fire brigade or works fire brigade etc.).
- Resetting the fire alarm control panel and notification of the alarm receiving station.
- After the work has been completed, the full operational readiness of the system should be confirmed in writing by the specialist company carrying out the works. Furthermore, the activities should also be recorded in the logbook of the system.

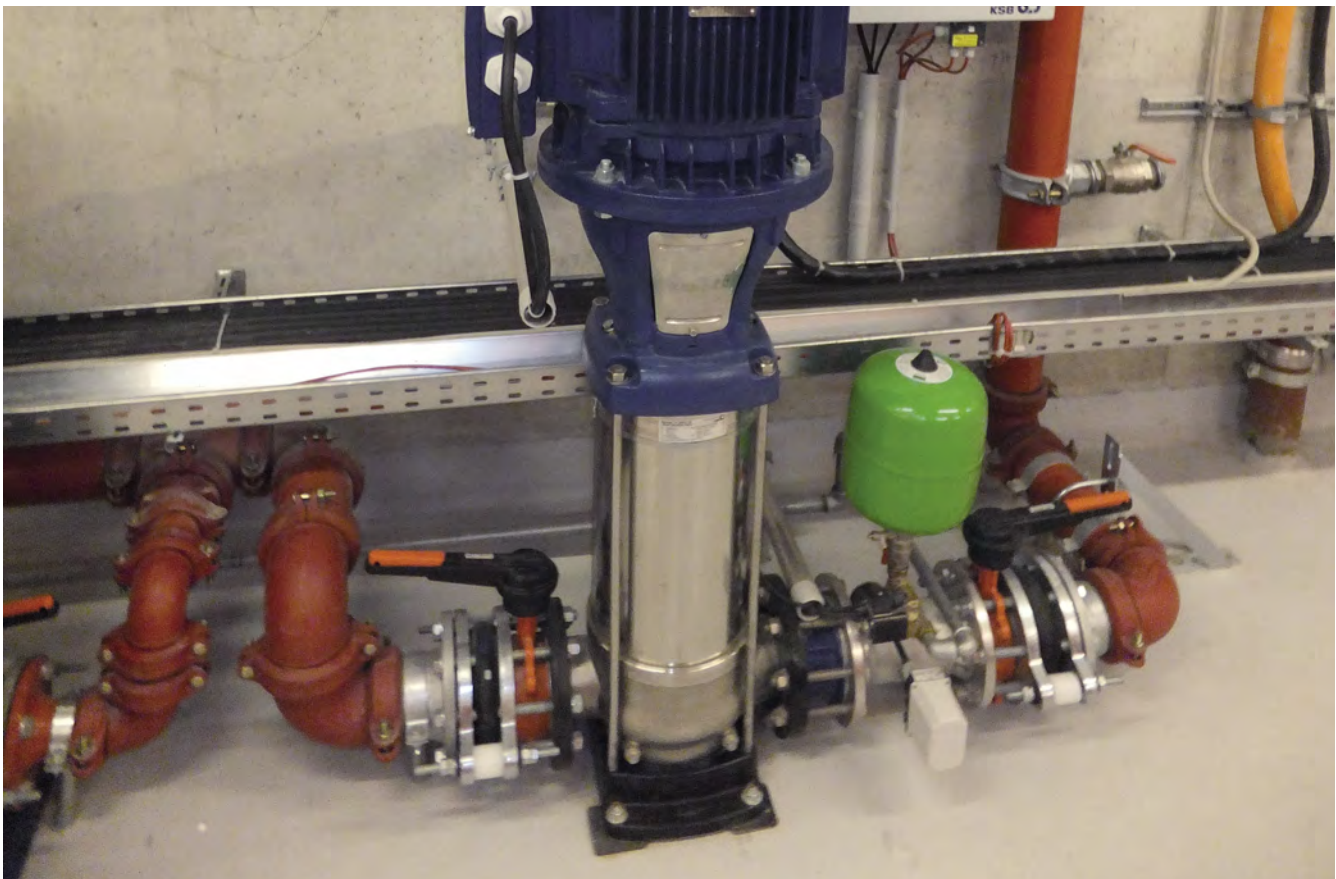
- Notification of HDI-Gerling (possibly via the broker) and – if necessary – the responsible public fire brigade and/or building permit authority about the restoration of the fire protection system.
- Removal of the warning notices.

If fire protection systems are under impairment, the risk of a major loss is increased, but can be reduced to an acceptable level by adopting the measures described above.

6 Note

This Risk Engineering Guideline is not intended to be complete and does not provide any release from the duty of compliance with statutory or legal regulations. Any liability is excluded.

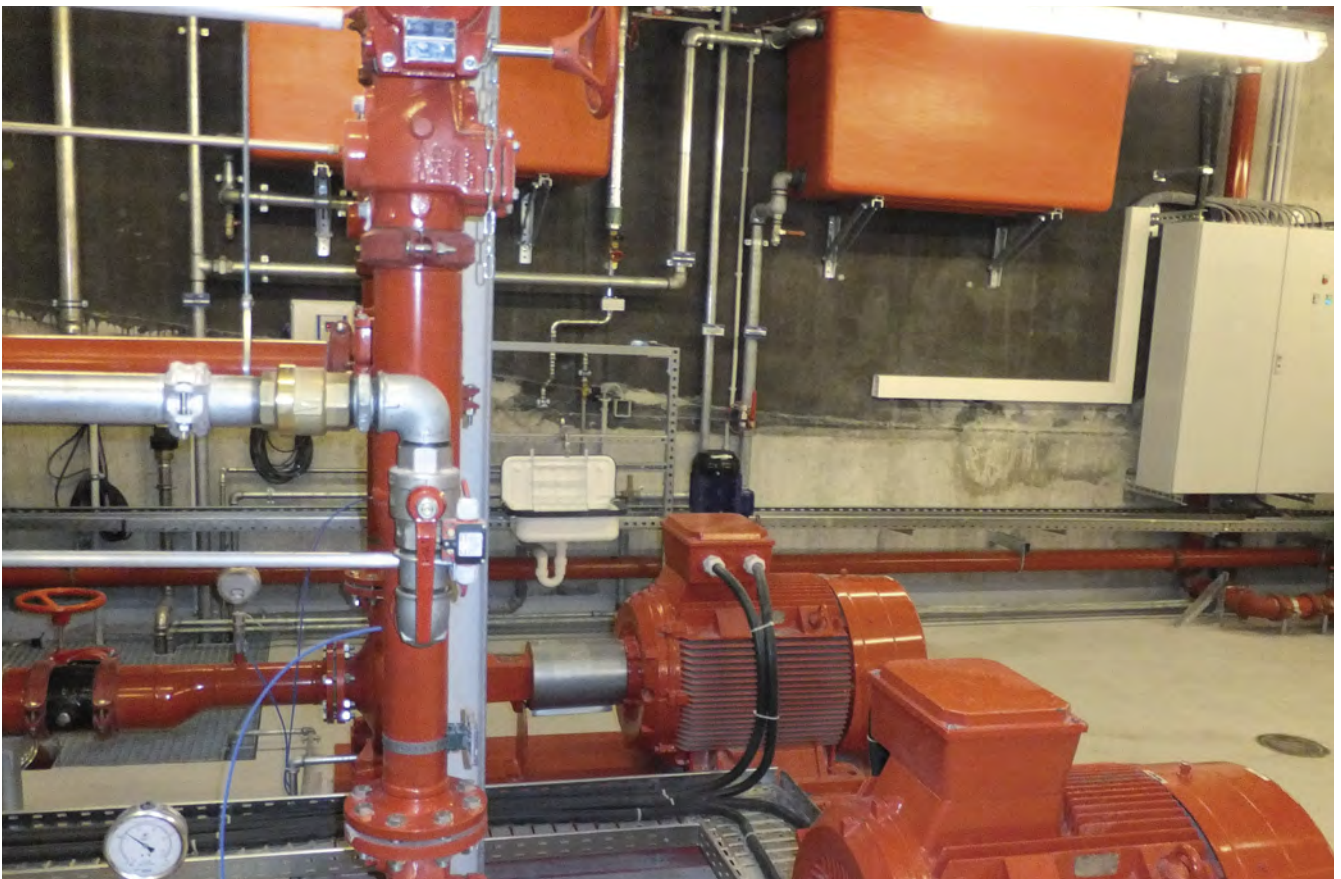
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7 Sources/references:

- VdS 2000:** Not available in English
- VdS 2091en:** Maintenance of operational readiness of water extinguishing systems
- VdS 2093en:** CO₂-fire extinguishing systems, planning and installation
- VdS 2095en:** Automatic fire detection and fire alarm systems, planning and installation
- VdS 2106en:** Spark detection, spark separation and spark extinguishing systems, planning and installation
- VdS 2108en:** Foam extinguishing systems, planning and installation
- VdS 2109en:** Water spray systems, planning and installation
- VdS 2182:** Not available in English
- VdS 2212en:** Log book for water extinguishing systems
- VdS 2240en:** Log book for gas and powder extinguishing systems

- VdS 2241:** Not available in English
- VdS 2304en:** Local application protection for electric and electronic equipment, planning and installation
- VdS 2380en:** Fire extinguishing systems using non-liquefied inert gases, planning and installation
- VdS 2381en:** Fire extinguishing systems using halocarbon gases, planning and installation
- VdS 2395:** Not available in English
- VdS 2496en:** Triggering of fire extinguishing systems, guidelines
- VdS 2893en:** Maintenance of operational readiness of fire extinguishing systems with gaseous extinguishing agents
- VdS 3527en:** Inerting and oxygen reduction systems, planning and installation
- VdS CEA 4001en:** Sprinkler systems, planning and installation



About HDI-Gerling Risk Engineering Services

HDI-Gerling Risk Engineering Services supports mid-size companies, industrial companies and groups in preventing loss and damage, and in setting up a company risk management system. HDI-Gerling Risk Engineering Services also offers customers access to more than one hundred engineers and technical specialists from a wide range of different disciplines. The goal is to support companies in managing risks and working out an individual, risk-based concept for insurance cover. HDI-Gerling Risk Engineering Services operates across the world in the technical safety lines of Fire, Motor, Engineering Insurance and Marine. The focus of activities is on the identification and assessment of risks, and the development of appropriate, individual concepts for protection. HDI-Gerling Risk Engineering Services is part of the global Risk Engineering Network of the Talanx Group and a wholly owned subsidiary of HDI-Gerling Industrial Lines.

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