SECURITY DEVICES, OPERATION, AND INSPECTIONS

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ABSTRACT

The paper focuses primarily on already functioning units of security and non-security systems and emphasizes testing, control, and inspectional activity. Not only is it necessary to test and review devices after installation but checks and inspections also need to take place at regular intervals throughout their operation. The design, installation, and operation of each technological unit follow the relevant legal and normative requirements. Every device serves its purpose and e.g. their combination (integration) with another system can expand their functions and thus respond to newly emerging risks. Every security and non-security device requires impeccable project documentation before the installation, a professional approach to the installation, operation, and use by trained and experienced persons, and last but not least, a thorough approach to check and inspection activity.

Keywords: Functional Checks, Inspections, Revisions, Security Systems

INTRODUCTION

Every individual, every group of persons needs to have a sense of security, whether regarding their life, health, or property. It is up to every one of us to protect our values. Any measure leading to the decrease of risk of any kind of detriment to the lowest level possible is invaluable for everyone. However, the value of preventive measures has to correspond to the value of the protected area.

The value of a property is currently on the rise and the need of individuals and companies to protect their hard-earned property rises with it. We must not, however, be forgetful of the personal, intellectual value of things we could lose very easily. It is necessary not only to respond to the development of society, new requirements, lifestyle changes but also to take emerging threats and associated risks into account. Many systems are already installed and

in operation. Merely adding or integrating previously installed systems can expand their security level or increase it to the required value.

One of the many preventive measures is the installation and operation of security or non-security systems that generate alarm events. For these systems to serve their purpose, the design, project documentation, installation, and maintenance must be carried out by qualified persons educated in the field. Only then can a problem-free operation of the devices be ensured. Technological progress is inevitable, and manufacturers are developing ever more faultless and sophisticated devices to increase the security level of various areas of interest.

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Security systems are comprised of various peripheral devices and the selection must be preceded by an impeccable, complete risk analysis and an impeccable security project. The basis for this is a security assessment. It is impossible to specialize only in certain parts of security measures. All aspects of risks and the corresponding countermeasures have to be considered.
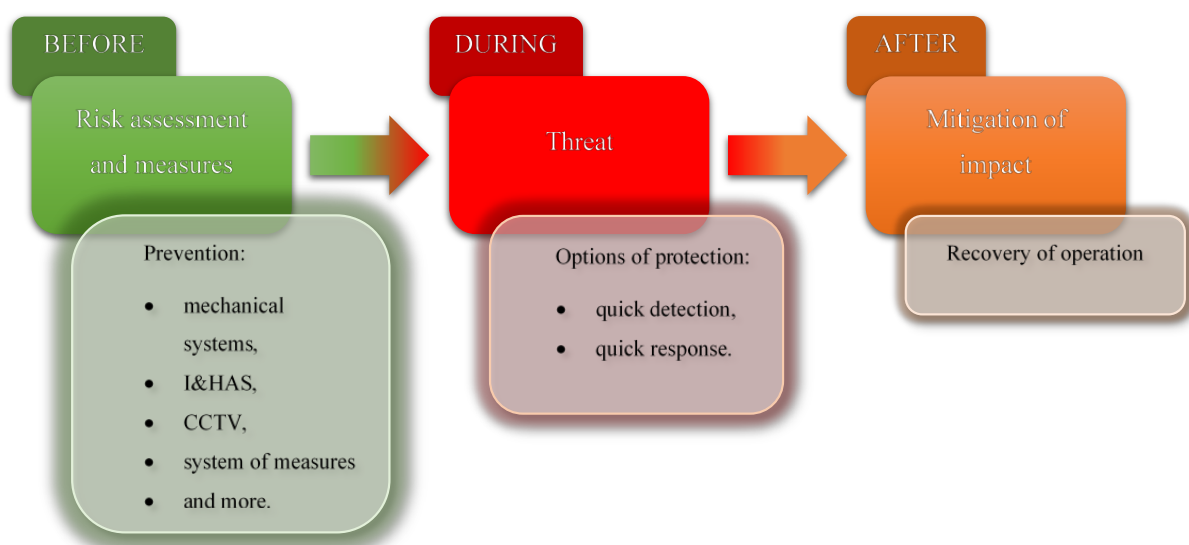
Pic. 1: Example of possible measures and a possible course of an incident [1].

A SECURITY SYSTEM IS ONLY AS GOOD AS ITS WEAKEST LINK

Unfortunately, in practice, we frequently encounter system installations where the requirements of the security project have not been met (if there even is a security project to speak of) or installations where the safety level requirements have not been met. The most common example of this is the I&HAS installation, where only the entrance door is secured by a magnetic contact, and motion detectors are randomly placed. Installation companies then erroneously declare security level 2, believing the components for said level have been used. The sad looks of customers, when the threat of danger has been realized and their "secured" property has suffered damage are another frequent occurrence.

In 2018, The Grémium Alarm Association of Technical Security Services in cooperation with the Ministry of the Interior of the Czech Republic developed a document entitled *DETERMINATION OF THE SECURITY LEVEL OF OBJECTS AND ESTABLISHMENTS AGAINST BURGLARY ACCORDING TO EUROPEAN TECHNICAL STANDARDS*, which presents an overview and rules for the I&HAS application together with the use of mechanical systems and allows for the property security optimization.

The PDCA model (plan – do – check – act) is very helpful in the security area as well. Every device requires certain care, maintenance, and service. The TNI 33 4591-3:2012, for example, specifies the minimal requirements for activities at the end of an installation, trial run, or full operation of PZTS. After any installation of any kind of device, the following steps, at least, should follow:

- inspection (verification of system installation with approved documentation),
- function test (verification of system operation, according to the documentation requirements)
- processing of documentation of the as-built drawings (including certificate of concurrence and security classification),
- initial revision of electrical device (ČSN 33 1500),
- trial run and user training (protocols included),
- elimination of identified deficiencies and
- handover of the system for permanent operation (acceptance and handover protocol).

The permanent operation of the device, its maintenance, and service warrant its separate chapter. Legal and normative requirements for the operation supplement the terms and conditions of the manufacturer of a specific device. Every security device needs to be regularly tested and reviewed from the electrical point of view. Recommended times of checks and inspections of individual components are dependent on the projected security level and also need to follow the operating rules of the security device operator. The electricity revision cannot be omitted, the times are dependent on the assessment of external influences. As part of the checks and inspections, in addition to the operation review and potential transfer to the supervisory center, it is obligatory to check at least the following:

- cleanness of lenses or detector and alarm optics,
- fixing and condition of the covers of components of the security system,
- integrity and condition of the cabling system,
- changes to the object dispositions that could influence the functioning of the security system,
- removal of defects from previous inspections,
- up-to-dateness and availability of operation documentation or manuals for service and maintenance,
- keeping of operational documentation of the device.

Service organizations have to conduct the inspections responsibly and must not omit any item on the checklist. In every object, changes in disposition and furniture placement are bound to happen over time. Due to such changes, and the installed device does not necessarily have to meet the current requirements or function as intended. Among other things, testing technicians are required to notify the operator of the necessity to re-evaluate security measures, changes, or extensions of security systems and recommend a complex security audit. Only when a security device is properly maintained, is it capable to function as intended?

Unfortunately, experience shows that checks and inspections are not conducted to a sufficient extent, especially at installation companies, the primary activity of which does not

include security systems installation and in which the employees frequently do not have the appropriate training or sufficient experience.

Frequently, there are cases where, after the operability or functional check, the detectors are covered with objects, plastered over with protective foil, the lenses painted over, or for example, the alarms still equipped with a protective covering. From an electrical point of view, an unconnected protective conductor to the metal cover of a mainboard or disconnection of protective shading is among frequent transgressions. For a security system operator, a protocol and a document informing of a conducted check or inspection, where a specialized company declares the flawlessness and functionality of the entire system is of utmost importance.

CONCLUSION

Security and non-security devices belong to the category of electrical devices. Every component is affected by influences that can have an impact on its operation. Each electrical device can be installed only in the intended premises and areas, and also requires adequate care during operation. It is only through thorough and regular testing that emerging defects can be detected and thus the intended function and operation of the installed device are ensured. Newly emerging threats can be responded to by expanding or integrating already existing systems.

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