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The Federal Council

The Federal Council's Basic Strategy for Critical Infrastructure Protection

Basis for the national critical infrastructure protection strategy

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Appendix: List of critical infrastructure sectors and subsectors in Switzerland

1 Introduction

Society, business, and politics depend on functioning infrastructures. “Critical” infrastructures are those that are especially important for the system as a whole or for other infrastructures. They can be grouped into sectors, such as energy, transportation, or communication. Some sectors, and particularly some of the objects they contain (such as nuclear power plants or dams), already feature highly advanced protection measures. Thus, these aspects are not the main concern of Critical Infrastructure Protection (CIP). Instead, the focus is on cross-sectoral coordination and a consistent approach at the national level, which has been lacking to date. Therefore, in June 2005, the Federal Council tasked the Federal Office of Civil Protection (FOCP) as part of the Department of Defence, Civil Protection and Sport (DDPS) with coordinating the work in the field of CIP. Since then, a number of efforts in the framework of the CIP Programme have been undertaken that are aimed, pursuant to the Federal Council’s decision of 4 July 2007, at elaborating a national critical infrastructure protection strategy by the end of 2011.

The following basic CIP strategy records the definitions and principles to be applied in the field of CIP and specifies the measures to be taken with regard to the protection of critical infrastructures. Furthermore, the relevant actors are identified and the various forms of cooperation are presented. The basic strategy serves as the baseline for the elaboration of the comprehensive national CIP strategy and lays out a common framework for the actors involved. It will be reviewed when the national strategy is formulated and will be integrated into the latter.

2 Goal and purpose of Critical Infrastructure Protection

The goal of Critical Infrastructure Protection is to reduce the likelihood of occurrence and/or the extent of damage incurred in a disruption, failure, or destruction of critical infrastructures at the national level, and to minimize the duration of downtime. These measures constitute an effective contribution to the protection of the population and its livelihood.

One way of improving the protection of critical infrastructures is through specific (protective) measures. It can also be improved by fostering dialogue and cooperation between the multiple agencies involved in the various aspects of critical infrastructure protection.

3 Definitions

Infrastructures

The collective term “infrastructures” covers people, organizations, processes, products, services, and information flows, as well as technical and structural installations and constructions that, individually or as part of a network, enable the society, the economy, and the state to function.

These infrastructures are grouped into three levels:

- **Sectors:** e.g., energy, financial services, public health
- **Subsectors:** e.g., power supply, oil supply, natural gas supply
- **Individual objects/elements:** e.g., control centre for grid management, control systems, high-voltage power lines, dams, pipelines

Critical infrastructures

Critical infrastructures are infrastructures whose disruption, failure, or destruction would have a serious impact on public health, public and political affairs, the environment, security, and social and economic well-being.

Criticality

The criticality of an infrastructure refers to its relative importance in terms of the consequences that a disruption, failure, or destruction would have on the population and its vital resources.

Protection goals

The protection goals describe the level of security to be attained and financed and determine the respective protective measures. The protection goals themselves are not absolute and depend on the security policy situation. General protection goals may be inferred from the status report, while specific protection goals must be agreed for each infrastructure sector (e.g., minimum level of power supply in the energy sector). They depend on the nature of the infrastructure and its criticality.

4 Principles of Critical Infrastructure Protection

Integral risk management: The CIP Programme is based on the principle of integral risk management, which consists mainly of two parts: First, a detailed threat and risk assessment is performed, which then serves as the basis for measures in the following areas:

- Prevention (e.g., structural-technical or zoning measures)
- Preparation (e.g., contingency and business continuity planning)
- Intervention (e.g., alarm system, physical protection through security staff, standardized crisis communication)
- Recondition (e.g., temporary restoration of infrastructures)
- Reconstruction (e.g. of infrastructures)

Integral risk management is conceived as a process without prioritization of individual phases. At the federal level, the federal administration's risk policy is taken into consideration.

All-hazards approach: The threat and risk analysis follows an all-hazards approach. This means that in principle, the risk analysis takes into account all relevant hazards (natural hazards, technical hazards, societal hazards and violence) and does not prioritize any hazard in particular.

Resilience: Because it is impossible to protect all critical infrastructures permanently or to eliminate all vulnerabilities completely, resilience is of great importance. Generally, the aim is to return to a "normal" state as quickly as possible following an incident. Resilience consists of five components: 1) the robustness of the system as such (society, sector, infrastructure element); 2) the availability of redundant units; 3) the ability to mobilize relief efforts; 4) the speed of relief efforts; 5) the ability of society to handle crisis situations.

Maintaining proportionality: The selected measures should be reasonably proportional to the risk assessment and to the protection goals that are to be attained. Proportionality should also be maintained with regard to costs, protection, and security as well as liberty and legality. Furthermore, unnecessary market distortions must be avoided.

Subsidiarity: Measures must be adopted both by the operators of critical infrastructures and by the public sector. Since approximately 80% of critical infrastructures are located in the private sector, the latter has a special responsibility for undertaking measures and

investments of its own. The main responsibility of the public authorities is to protect their own critical infrastructures and to support operators.

5 Measures for Critical Infrastructure Protection

5.1 Prioritizing critical infrastructures

In order to be able to use resources efficiently, critical infrastructures must be prioritized. Critical Infrastructure Protection covers ten critical sectors that are grouped into 31 subsectors. The 31 subsectors are weighted for criticality and categorized into three groups (cf. Appendix). Furthermore, individual critical infrastructure elements are identified based on a standardized method and uniform assessment. Those that are of national importance are inventoried and documented. The “CIP Inventory” is compiled and regularly updated in cooperation with the responsible authorities of the federal administration, the cantons, and the operators. The inventory mainly serves as a basis for planning and decisionmaking processes at the various levels (federal administration, cantons, and operators).

5.2 Protection through comprehensive approaches

Critical infrastructures are protected through comprehensive concepts that include specifications as to protection goals, protective measures, and implementation plans. The actual protective measures are oriented towards a comprehensive risk spectrum and take into account various aspects of the entire risk management cycle. The protection concepts relate to critical sectors as well as the infrastructure elements of national significance that are listed in the CIP Inventory. They complement the existing protection concepts in critical subsectors. Furthermore, cross-sectoral and cross-subsectoral protection concepts are elaborated.

The development of protection concepts follows a standardized process. Initially, the existing responsibilities and regulations are reviewed, and protection goals are defined. In the next step, an in-depth analysis of threats and vulnerabilities is conducted. Subsequently, the risk analysis and the existing regulations are taken as the baseline to verify whether the protection goals have been achieved. If not, appropriate measures are elaborated. Finally, political decision-makers must determine which of these measures are to be implemented. Existing regulations can be adapted for this purpose, or new instruments can be created. Once the measures have been implemented, another review is conducted to verify whether the protection goals have been met or further adjustments are required. This entire process is repeated periodically.

5.3 Establishing foundations

A number of problem areas, such as mutual dependencies and cascading effects in case of disruption, have not yet been sufficiently investigated. Additionally, comprehensive and concerted countermeasures have yet to be formulated. Therefore, basic research in the field of CIP is of great importance. In particular, the high degree of interdisciplinarity involved must be borne in mind. In order to make optimal use of the CIP Programme’s synergies, the studies cover cross-sectoral aspects such as scenario-based analysis of effects of various events in and across the various sectors. Additionally, detailed investigations may focus on individual sectors or subsectors. Specific challenges in the field of CIP, such as those related

to criticality, risk, and vulnerability analyses, are also studied. Among other purposes, the insights gained in these investigations serve to inform the elaboration of protection concepts. In the area of basic research, close cooperation with various research institutes, such as Switzerland's universities, is important. Another significant feature is the exchange with the international research community.

5.4 Fostering risk communication

Frequently, an awareness of the significance of critical infrastructures and the possible implications of failures is lacking. Therefore, the operators of critical infrastructures, corporate actors, and representatives of the federal administration as well as the general public are sensitized to possible risks and threats in connection with critical infrastructures and are informed about rules of conduct and ways of protecting themselves. This is done in various ways including handbooks, fact sheets, or dedicated websites.

6 Cooperation in the field of CIP

The FOCP is responsible for coordinating activities in the field of CIP. Its main tasks are the following:

- Chairing the Working Group on Critical Infrastructure Protection (WG CIP)
- Coordination and promotion of coherence in CIP-relevant activities
- Elaboration and implementation of a national CIP strategy
- Information and communication
- Briefing and consultancy to the Federal Council on CIP-relevant issues
- Coordination and promotion of international CIP-relevant activities

Cooperation between all partners and coordination of activities are key requirements for CIP. The inclusion of all relevant federal authorities, the cantons, and the corporate sector (especially the operators and proprietors of critical infrastructures) is therefore of vital importance. This is achieved within and through the CIP WG as well as through a support group that serves as a strategic consultation and advisory body. The support group is made up of representatives of the public sector, the corporate sector, academia, and society at large.

CIP is based on existing structures, organizations, and networks: Measures are implemented, as far as possible, using the available means at hand, with the main responsibility remaining with the respective competent authorities.

Federal level

At the federal level, the CIP WG is the core coordination body in the field of CIP. It directs and evaluates activities in the CIP Programme and provides a platform for information transfer that may be used for exchanging experiences and lessons learned. It thus serves to promote the coordination of existing (sub-) sectoral protection efforts as well as the coherence and complementarity of the various activities. The CIP WG includes all relevant federal authorities that are active in the area of CIP, that contribute special expertise, or that are responsible for critical infrastructures.

The individual members of the CIP WG have the following roles and tasks within their own federal departments:

- They serve as points of contact for CIP-relevant issues.
- They support their own federal department in implementing CIP measures.

- They establish contact with the existing platforms and networks for exchange with the corporate sector.

Cantons

The cantons are important partners for elaborating and implementing measures in the field of CIP. In cases of critical infrastructure disruptions, they are responsible for crisis management at the cantonal level. Therefore, cantonal representatives have been integrated into the CIP WG and project groups. Furthermore, each canton nominates a point of contact in order to ensure the flow of information and cooperation in the area of CIP.

CIP operators

Private, social economic, and state operators and proprietors of critical infrastructures are the main contacts in the area of CIP, as they are responsible for the operation of infrastructures and for risk and business continuity management. Therefore, close cooperation with operators is an indispensable part of implementing protection measures. It is achieved by involving the relevant actors at the level of the support group, as well as by soliciting the participation of operators in the various project groups. The existing contacts with the federal authorities in the respective subsectors constitute an important element for cooperation with the operators.

7 Instruments for Critical Infrastructure Protection

So far, a superordinate legal framework for the comprehensive implementation of measures is lacking in the field of CIP. However, at the level of individual sectors, there are many legal regulations covering partial aspects of the CIP issue. Therefore, procedures for protecting critical infrastructures are based on existing foundations wherever possible. Should these prove insufficient, the following instruments are available:

- Directives: (legally) binding prescriptions on fulfilment and verification of an agreed protection goal.
- Incentives: Promotion of measures designed to encourage the voluntary fulfilment of a protection goal by operators of critical infrastructures.
- Public-Private Partnership (PPP): Promotion of cooperation between public authorities and private operators of critical infrastructures. PPP projects take into account the needs of the operators as well as those of the state in order to realize joint solutions.

8 Implementation and evaluation of the basic strategy

The basic strategy will be implemented in the framework of the CIP Programme. It will be reviewed when the national strategy is formulated and will be integrated into the latter.

Appendix: List of critical infrastructure sectors and subsectors in Switzerland

Sectors	Subsectors
Public administration	Parliament, government, justice, administration
	Research institutes
	National cultural property
	Foreign representations and headquarters of international organisations
Chemical industry	Production, transport, storage, and processing of chemicals
Energy	Power supply
	Oil supply
	Natural gas supply
Waste disposal	Wastewater
	Industrial and domestic waste
	Special waste
Financial services	Banks
	Insurance companies
Public health	Medical care and hospitals
	Medicine
	Laboratories
Information and communication technology (ICT)	Telecommunications
	Information systems and networks
	Internet
	Instrumentation, automation and monitoring systems
	Radio and media
Water and Food	Food supply and food security
	Potable water supply
Public safety, rescue, and emergency services	Emergency organisations (police, fire service, emergency health care and rescue services)
	Civil protection
	Armed forces
Transport	Road transport
	Rail transport
	Air transport
	Navigation
	Postal services and logistics

	Very high criticality*
	High criticality*
	Regular criticality*

*

- ▶ All subsectors are critical.
- ▶ Criticality refers to the importance of the subsector in terms of interdependency, the population, and the economy (not its general importance or its mission-criticality).
- ▶ Even subsectors whose criticality is regular may contain highly critical individual elements.
- ▶ Weighting is based on an ordinary threat level. *