Oslo massacre – Surprise?

CBRNE-TERRORISM Newsletter

Volume 39 - 201

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Original Papers

Swiss CBRN Protection Goes National

By Dr. Marc Kenzelmann

Abstract. In 2003 the *National NBC Protection* project was launched in Switzerland, the aim of which was better coordination of all NBC partners and ultimately more effective CBRN protection in Switzerland in the long term. It led to a flurry of activity in the field of CBRN protection, which continues today. The present article outlines some of the activities that have helped to identify and define how Switzerland can sharpen its response to a CBRN incident. The years to come will show whether Swiss policy makers are really willing to implement these recommendations and accept the consequences they entail. Only then can we say that we have learnt lessons from major emergencies like Fukushima.

Keywords. National NBC Protection Project, NBC Protection Strategy for Switzerland, NBC reference scenarios, Federal NBCN crisis management board, subsidiary federal support, medical CBRN protection

Introduction

Swiss security policy in relation to potential CBRN[1] risks has profoundly changed since the end of the cold war. The fear of military deployment of weapons of mass destruction (WMD) has given way to new threats such as growing terrorist activity, violent extremism, WMD proliferation as well as transport and technical accidents involving hazardous materials. Safety-related CBRN events such as the sarin attack in Tokyo (1995), the US anthrax attacks (2001) and the SARS epidemic (2002/2003), led to serious debate about the risks of potential CBRN incidents in Switzerland and its response to them. This new situation called for consistent professional expertise to ensure that the Swiss population enjoyed all-inclusive civil-based and military-supported CBRN protection. It also required a review of all the organisations and structures currently involved in CBRN defence (1). The swine flu epidemic (2009) and the nuclear disaster at Fukushima Daiichi following a major earthquake and catastrophic tsunami that struck Japan in March 2011 have brought into sharp focus efforts to devise plans that would ensure an optimal response to CBRN events. This is due in no small part to the media hype surrounding these incidents, which brought enormous political pressure to bear.

One of the direct results of these events is a root-and-branch reform of CBRN protection in Switzerland. A huge number of projects have already been launched, many of them running in parallel or in partial overlap, or even in direct "competition" with one another. So as not to spread our resources too thinly, we must ensure the optimal coordination and implementation of these research activities.

Federal Politics in Switzerland

To understand at least some of the issues associated with the establishment of a national CBRN protection system in Switzerland, it is worth first reflecting on the country's unique political model. Switzerland is a nation established by the will of the people and composed of several ethnic groups with a variety of languages and religions. It has been a federal state since 1848 and is one of 23 worldwide, with the United States of America being the oldest.

Switzerland has three political levels: the municipalities, the cantons and the Confederation. It also has a somewhat unique democratic tradition and has 27 politic

[1] Although the term *CBRN* is internationally accepted, the official term in Switzerland is still *NBC*.

systems, one federal and 26 at the cantonal level (2,3). It is a Confederation of 26 cantons of which 20 are considered full cantons and the remaining 6 half-cantons because they originated from internal divisions in three cantons. However, they are different in size (both area and population), and their structures vary widely. Yet, all cantonal institutions have equal competences and rights of autonomy, and their internal organisation does not depend on whether they are full or half cantons. The distinction between full and half cantons comes into play only in relation to voting arithmetic: full cantons may send two members to the lower house of Switzerland's federal parliament, half cantons only one.

Swiss political philosophy can be described as a form of federalism that grants the cantons and the municipalities a maximum of political self-determination and restricts the competences of the federation to the minimum needed to run a modern state. Governments, administrations, parliaments and courts are organized at federal, cantonal and municipal levels. The political system is a direct democracy with frequent referendums at all three political levels. Additionally, Switzerland has four official languages: German, French, Italian and Rumantsch (2,3).

The Swiss Joint Civil Protection System

On 1st January 2004, the Federal Council enacted the new "Federal Law on Civil Protection and Protection and Support" (BZG). It was passed by the federal parliament (only one dissenting vote) on 4th October 2002. A referendum was subsequently held on 18th May 2003 in response to a citizens' initiative; 80.6% of the Swiss population voted in favour of the new law.

The new Joint Civil Protection System is the ideal response to current security challenges. It enables the comprehensive protection of the population, its vital resources and cultural property. Bringing together the combined forces of five partner organisations, it constitutes an integrated management, protection, rescue and relief system. Each of the partner organisations - police, fire services, health services, technical services and P&S (Protection and Support, formerly Civil Defence) - has its own particular mission but provide the other partners in the system with support. Joint management ensures coordinated planning, preparation and operational command.

Given that incidents must be brought under control at the scene and take account of the affected community, operational responsibility for civil protection lies first and foremost with the cantons and municipalities. The Confederation sees to the coordination of civil protection services and defines its fundamental aspects. For events on a national scale, the Confederation coordinates the deployment of the relevant partners and assumes responsibility for the operational command.

The Federal Office for Civil Protection (FOCP) supports the cantons and municipalities as well as the partner organisations with their civil protection activities. The creation of the FOCP in 2003 grouped together all areas of the Federal Department of Defence, Civil Protection and Sports (DDPS) specialising in Civil Protection issues, a move that reflects the growing importance of civil protection (1,4).

As a direct consequence of the *Swiss Security Policy Report 2010* (5), the Federal Council requested the formulation of a *Strategy of the Joint Civil Protection System and the Protection & Support Service 2015*+. Work began at the end of 2010 and was completed in June 2011. The strategy defines future trends as well as the development of the Joint Civil Protection System in Switzerland, thereby also setting out the prospective organisational framework for natural disaster and CBRN incident intervention. The report is set to be approved by the Swiss government in autumn 2011 and will be submitted to parliament for its approval in 2012.

The fire service in Switzerland is organised on a cantonal basis, although local fire services are subject to municipal regulations. There are some 2,300 fire services in Switzerland, of which the vast majority (local, company and operational services) are made up of volunteers (99%) and are equipped according to the size and location of the service. Regional services provide each other with back-u

where necessary. Only 15 fire services are staffed by full-time professionals (6).

In the event of a CBRN incident the fire service is the primary first responder. But since only about 1% of all fire services in Switzerland are professionalised (in major cities such as Zurich, Winterthur, Geneva, Bern and Basel) and in the absence of a common and binding mandate to deal with CBRN incidents, the level of CBRN training varies across fire services. In order to harmonise and to define competences, tasks and intervention times with greater precision, the Conference of the Cantonal Councillors ("ministers") responsible for military and civil protection affairs (RK MZF) approved in 2009 the *2015 action plan for the Swiss fire services*, which for the first time officially designates CBRN as a core competence of all fire services. In reality, though, CBRN responsibilities will be assumed for the most part only by the professional and regional fire services.

In 2010 a task force of fire service specialists undertook a review of the tactical and technical documentation on the fire services' CBRN action plans. This work, which is scheduled for completion in 2012, will set down the fundamentals of CBRN intervention nationwide, thereby unifying response tactics and imposing interoperable intervention material.

Federal-civil CBRN support

Since the successful management of many, if not most, CBRN incidents may exceed the capacities of the cantons, the federal government must be prepared to step in. It currently provides support, among others, through its C-terror Task Force (EEVBS), which is currently being restructured to become a fully-fledged CBRN Task Force, as well as through the Emergency Organisation Radioactivity (EOR), the SPIEZ LABORATORY (the Swiss centre of expertise for protection against CBRN threats and hazards), and through arming the CBRN defence within the Swiss Armed Forces.

The EOR comprises, *inter alia*, the National Emergency Operations Centre (NEOC) and its military staff; additional departments and bodies of the federal authority, state organisations (Swisscom, Swiss railway corporation SBB), as well as several sampling and monitoring organisations. The press centre of the Federal Chancellery supports the EOR with the provision of public information.

Should risks arise from accidents either in one of Switzerland's five nuclear power plants or in a foreign nuclear facility, the EOR receives additional assistance from the Swiss Federal Nuclear Safety Inspectorate ENSI (1).

Subsidiary Support of the Swiss Armed Forces

Switzerland has long enjoyed peace, security and freedom, whether the freedom of movement for all citizens, the freedom of expression or economic freedom. The long-term preservation of this situation is the mission of Swiss security policy. Here, the Swiss Armed Forces have a part to play. The Federal Constitution and the Military Act assign the following three missions to the Armed Forces:

1. Defence
2. Support of the civilian authorities
3. Promotion of peace within an international context

Defence against an armed attack, whether on the ground or in the air, is the central mission of the Armed Forces. As this is extremely unlikely today, they must not be in a constant state of readiness. However, the Armed Forces must be capable of protecting key installations and transport axes in the event of a threat. Finally, they must be able to adapt in good time to emerging threats. As a neutral state Switzerland does not belong to any defensive alliance, though our Armed Forces are able to cooperate with other states for training purposes.

Supporting the civilian authorities when their resources no longer suffice involves bringing emergencies under control and safeguarding domestic security. The Armed Forces assist the police with providing security at international conferences and major events. Should disaster strike, the Armed Forces can be deployed within hours at the scene to assist

the fire services, the medical services and the Protection & Support organisation.

As regards international peace support within an international context, the Swiss Armed Forces are committed to security and peace abroad. When mandated by international organisations they help to bring stability to other countries after wars and crises. A more peaceful world is beneficial for Switzerland too (7).

To relieve any excessive demands on the resources of civilian authorities, a three-step action plan is in place to provide support in the event of natural, technological or violence related disasters:

1. Preventive support: in the normal situation, civilian partners are permanently given military disaster relief equipment for use (e.g. swap body containers of the disaster relief battalions) outside the normal troop courses;
2. Spontaneous assistance: all troops located within the vicinity of an event provide rapid assistance which is limited in both time (approx. 48 hours at the most) and space;
3. Military disaster relief: within the context of national security cooperation primarily, this amounts to rescue operations in situations where damage is severe and extensive or during major fires. In addition, the military can provide the following services:
   - assistance to cut-off areas or otherwise vulnerable communities;
   - containment of the disaster area as well as prevention of consequential damage;
   - assistance with the provisional restoration of critical infrastructures;
   - reinforcement or relief of civilian and/or military resources that have already been deployed.

The rescue corps and its specialised units are the main pillar of military disaster relief. These units include:

- the disaster relief standby company, which can intervene within hours, and
- the disaster relief battalions which can be called up and deployed within days to ensure sustainability, concentration of forces and reinforcement.

Where required, the specialised units of the rescue corps can be augmented with elements from other services to form operational units that are set up according to the requirements of the situation at hand. Candidates are primarily the resources and services of the Swiss Air Force, the engineer, logistic and medical forces, military security as well as the NBC defence forces (8).

The NBC-EOD Competence Centre of the Armed Forces ensures the operational readiness of the NBC resources of the Swiss Armed Forces. Apart from managing the Armed Forces NBC defence, it runs NBC training courses for civilian partners in Switzerland and abroad. After the successful integration of a new CBRN decontamination system, specialist aspects of CBRN reconnaissance and mobile CBRN detection (much of the technical detection equipment has been tested by experts at the SPIEZ LABORATORY) will also be brought in. Since the beginning of 2011 its CBRN expertise has been expanded to cover *CBRNe* thanks to its merger with the EOD competence centre of the Swiss Armed Forces.

The NBC-EOD Competence Centre in Spiez is mobilised in the event of a major CBRN incident that exceeds the capabilities of the local civilian operational forces. Thanks to its wide range of resources and services, the NBC-EOD Competence Centre can be rapidly deployed to provide both civilian and military organisations with subsidiary back-up.

Future trends of the Swiss Armed Forces

Swiss government plans to cut the material, troop numbers and budget of the Swiss Armed Forces by about 20% (Federal Council Decree of 26th November 2008) contradicts the other objectives set out in its 2010 Security Policy Report. Although defence budgets have long seen a consistent rise across Europe and the rest of the world, Swiss military spending has continued to shrink since the end of the Cold War in 1989. Today, Switzerland spend

around CHF 4.2 billion on defence (including real estate maintenance), or a mere 0.8% of its gross domestic product, leaving it trailing far behind other comparable European countries (9).

The *Swiss Armed Forces Report 2010* called for a reduction of the headcount to 80,000 troops (from about 190,000 in 2010) and capped the defence budget at about CHF 4.2 billion a year. According to the report, 35,000 troops would be assigned to the mission of supporting the civilian authorities, one of the central tasks of the Swiss Armed Forces. Since these numbers would not suffice if a natural disaster with lasting consequences or a CBRN incident were to occur, the Swiss parliamentary security policy commission asked the authors to revise the report and present alternative organisational models based on troop numbers of 60,000, 80,000, 100,000 and 120,000 respectively. The new report was submitted to parliament in March 2011. Its decision is awaited with much anticipation.

Whatever parliament decides, the decision will have a considerable impact on the capabilities of the Swiss Armed Forces to provide civilian authorities with disaster relief support in the future. (As a point of comparison: some 100,000 Japanese troops have helped and continue to help the Japanese civilian authorities manage the consequences of the natural and radiological disaster of March 2011.)

Modern CBRN Threats

Disasters, emergencies, and terrorist attacks are the main risks Switzerland faces today. Due to our modern and high-tech society, they can cause even greater damage than before. Their likelihood of occurrence is high and may appear without any or only brief prior warning. All these risks may involve a CBRN element (1), a point that was made explicitly in the Report of the Federal Council to the Federal Assembly on the Security Policy of Switzerland 2010 (5).

Assignment of Basic CBRN Tasks

According to the Swiss Constitution, *the Confederation and the cantons see to the security of the country and to the protection of the population within the limits of their respective competences*. While the responsibility for nuclear and radiological (NR) events is at the federal level, the management of chemical and biological (CB) incidents is largely a municipal and/or cantonal responsibility (Joint Civil Protection System). For CB incidents, the Federal Law on Civil Protection states that the Confederation, in agreement with the cantons, can be asked to coordinate activities and, when necessary, take over responsibility for the management of intervention resources if a disaster impacts on several cantons, on the country as a whole, or on cross-border regions. However, the fact that the 26 cantons have devised their own incident responses and assigned responsibilities differently can cause duplications, misunderstandings, and lead to inefficient crisis prevention and management (1).

The National NBC Protection Project and the NBC Protection Strategy for Switzerland

In 2003, the Swiss Armed Forces and the Association of Swiss Cantonal Chemical Officers signalled the need for a national NBC protection plan which would take account of not only all possible threats in this field but also the country's existing political structures. The Federal Council agreed, and tasked the Federal Commission for NBC Protection (ComNBC) and the Director of the Federal Office for Civil Protection (FOCP) with the "National NBC Protection" project. The aim was to identify what action needed to be taken, and to propose recommendations on how processes and organisations could be optimised. The project team identified several weaknesses in current protection that could seriously hamper the effective management of major incidents. These include a lack of coordination between federal and cantonal levels, the involvement of myriad agencies and individuals, noticeable overlaps, and the lack of a uniform approach to operational planning at the cantonal level. The project outlined 16 measures to remedy the situation, such as optimised federal command structures, national coordination of strategic and operational tasks in the prevention of CBRN incidents, optimised availability of resources, a review of federal and cantonal responsibilities, and the standardisation of operation doctrines, training courses and material components (10,11).

On 5th July 2006, the Federal Council ordered the implementation of four priority measures, based on the project findings:

- Development of a national "NBC Protection Strategy for Switzerland";
- Creation of a "National NBC Protection and Coordination Centre";
- Expansion of the Radioactivity Steering Committee (LAR) to an NBC Steering Committee;
- Greater federal support for the cantons.

The ComNBC was tasked with developing a "NBC Protection Strategy for Switzerland" (12). It devised 14 reference scenarios which it believes cover the entire hazard spectrum (Table 1). Documented according to their duration, their potential impact and incident management, they provide a valuable tool for the identification of shortcomings in relation to prevention and intervention, and for the development of appropriate solutions to these problems. Several also include variations that factor in the threatened deployment of NBC resources (13).

Table 1. CBRN reference scenarios

RN	1.	Accident in a nuclear facility: release of radioactivity with prior warning
	2.	Dirty bomb: spontaneous release of radioactivity causing contamination
	3.	Deployment of a nuclear weapon: ground explosion close to the Swiss border
	4.	Attack on a transport carrying highly radioactive waste
B	5.	Deliberate contamination of food with ricin
	6.	Terrorist attack involving the pox viruses
	7.	Terrorist attack involving anthrax
	8.	Pandemic (SARS, etc.)
	9.	Accident in a Biosafety Level 3 laboratory with unintentional release of contaminants
C	10.	Transport attack or accident
	11.	Accident in a chemical storage facility
	12.	Chemical terrorism: hydrocyanic acid attack in a shopping centre
	13.	Chemical terrorism: sarin attack in an airport
	14.	Long-range missile attack on Switzerland

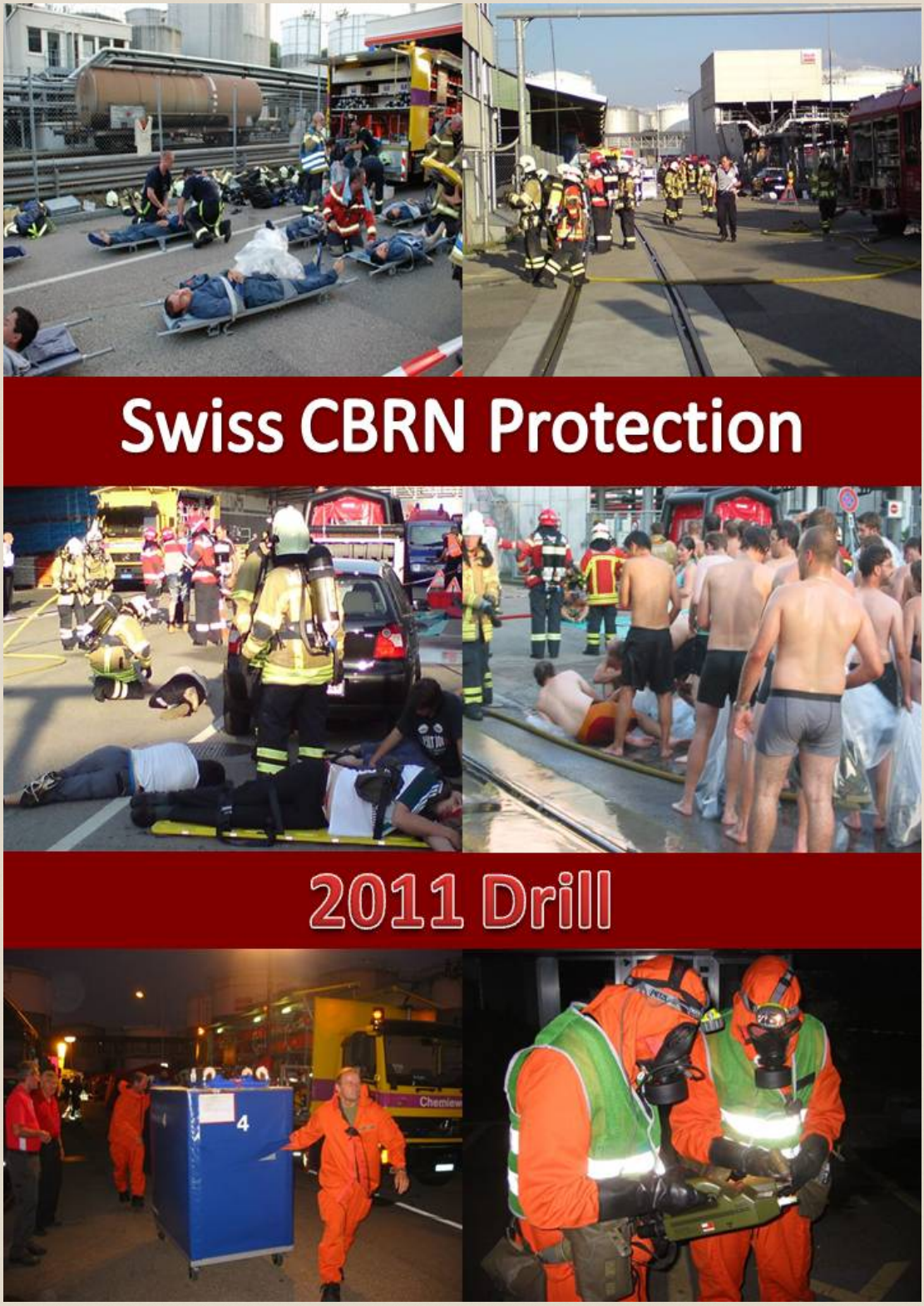
Starting in autumn 2011 the technical aspects of these scenarios will be revised and updated in line with new scientific findings. A scenario on epizootic disease (foot-and-mouth disease) will also be added, as will three natural disaster scenarios (earthquake, flooding, and storms) due to the creation of a federal interdepartmental command structure (Federal NBCN crisis management board) on 1st January 2011 to administer federal government responsibilities in CBRN events (NBC) and in natural disasters (N). The new scenario catalogue will be completed by the inclusion of a "combined scenario" (earthquake as a primary event followed by a CBRN secondary event, based on the Fukushima disaster in 2011).

The "NBC Protection Strategy for Switzerland" (12), which was revised in 2011 based on an actual threat and risk assessment (by the Swiss Intelligence Service (NDB) amongst others), focuses solely on measures that must be implemented if the objectives of the Swiss NBC Protection Strategy are to be met. The report also contains a series of recommendations:

- *Review of the legal bases of NBC security.* The ComNBC is responsible for examining whether the existing legal bases adequately prevent the abuse of dangerous NBC substances.

The report *Review of NBC Security Legislation* has meanwhile been completed and was approved by the ComNBC at the end of 2010. It demonstrates how effective Swiss legal provisions have been at preventing the theft and subsequent abuse of hazardous NBC substances. The authors found no evidence to

suggest that legal reforms were needed, but concluded that work was needed on certain implementing provisions. They therefore put forward nine recommendations to rectify the situation. Following the interdepartmental consultation process in autumn 2011, the report will be submitted to the Swiss government who will make the final decision on the proposals.



- *Evaluation and management of CBRN*

risks based on 14 CBRN reference scenarios.

The cantons are called upon to re-examine their CBRN risk portfolio based on the 14 CBRN reference scenarios, to re-evaluate their intervention resources and, where necessary, to adapt them accordingly.

Consequently, the cantons began to re-evaluate their intervention capabilities in 2008 and 2009. So far, 19 cantons have completed their analysis, and work is still under way in the other six. Based on the canton-specific risk portfolio and in order to optimise CBRN crisis management these analyses identified measures that should be taken either on their own, or as part of regional cooperation efforts, or at the government level. This general deficiency analysis has generated the first nationwide overview of the status and weaknesses of current capabilities - organisational, resource-based, educational and interoperability – of the various levels to deal with CBRN incidents.

- *Further development of the National CBRN Protection and Coordination Office and the cantonal coordination platform.*

The cantonal CBRN coordination platform (the cantonal "counterpart" of the National CBRN Protection and Coordination Office) was established officially in late 2007 and was immediately operational but lacked an official political mandate at the cantonal level. This was remedied in May 2010 by the Conference of the Cantonal Councillors ("ministers") responsible for military and civil protection affairs (RK MZF).

- *Promotion of regional cooperation.*
  The cantons are called on to promote cooperation on CBRN matters by forming intercantonal regions.

The thinking behind this recommendation is that in the event of any CBRN disaster, the regional networks can help reinforce the initial intervention measures taken by the cantonal and/or municipal organisations. This makes sense, especially given that it is unreasonable to expect every canton to have the resources needed to manage a CBRN incident single-handedly. Mutual assistance may then also be regulated and put to the test during the preparatory phase. During cantonal risk evaluations, assisted by the cantonal CBRN coordination platform and the National CBRN Protection and Coordination Office, the cantons organised themselves into four intercantonal regions, which largely correspond to the regions already established by the Joint Civil Protection System (e.g. police, fire services coordination, biological laboratory network). As such, they do not constitute a new organisational and administrative level. After approval of these regions by the cantonal CBRN coordination platform in autumn 2011, official political approval is likely to be given by 2013.

- *Consensus on CBRN intervention resources*
  Together with the Confederation and the cantons, the ComNBC is responsible for reaching a written consensus on the CBRN intervention resources which should be procured and managed by the cantons, regions and Confederation.
- *Decentralisation of federal CBRN intervention resources*
  In line with the aforementioned written consensus, the Confederation is advised to decentralise its CBRN intervention resources. These resources must be included in all cantonal plans and training exercises.

The Federal Council tasked the ComNBC with the implementation of both these recommendations and the entire project. In turn, the ComNBC commissioned the National CBRN Protection and Coordination Office to carry out the project by the end of 2011. The aim of this "consensus report" is to define the responsibilities of all partners and to establish which CBRN resources should be procured and managed at cantonal, regional and federal level. The Confederation also must decentralise its subsidiary intervention resources to ensure that they can be rapidly mobilised. The report is based on the risk and deficiency analyses of the cantons and the government. It sets out about

recommendations to be fulfilled in the fields of: precise definition of responsibilities, medical CBRN protection, SIBCRA, standardisation (interoperability and uniformity) of CBRN material components, standardised technical CBRN education and development of a common wide-ranging decontamination strategy. As its name suggests, the report is based on broad-based nationwide consensus. It is set to be approved by the ComNBC in December 2011. Swiss government approval is expected by the end of 2012.

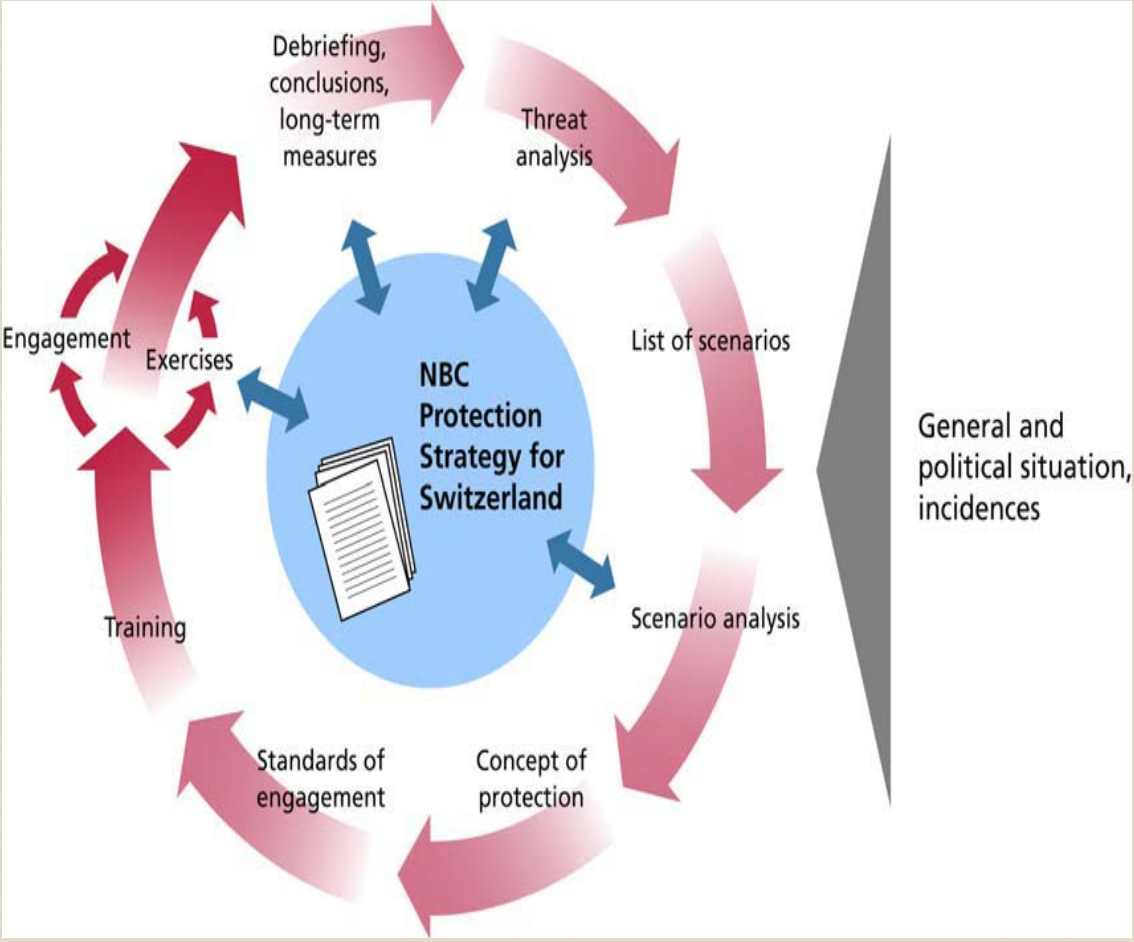


Figure 1. National CBRN protection as a cyclical process

- *Organisation of a federal interdepartmental command structure.*

  The cantons called for the introduction at federal level of a single point of contact for all CBRN incidents, which led to a review of CBRN protection responsibilities of existing staffs and bodies (Staff of the Security Committee to the Federal Council, the Special Staff Unit for Hostage-Taking and Extortion-SOGE, Special Staff Unit for Pandemics, National Emergency and Operations Centre NEOC etc.). The Confederation was subsequently advised to set up a federal interdepartmental command structure for CBRN incidents (14 reference scenarios). This body must also ensure efficient cooperation with the chiefs of staff of the cantonal command bodies, which will be put to the test during training exercises.

On 1st January 2011 the new *ordinance on the organisation of deployment in the case of CBRN incidents and natural disasters* came into force. It details the operational organisation at federal level and provides for the creation of a Federal NBCN crisis management board, comprising the directors of the Federal Offices concerned with NBCN matters as well as the relevant cantonal

representatives. This new unit integrates many existing staffs and bodies (see above), thereby eliminating an excess of back office bureaucracy should an incident occur. The Federal NBCN crisis management board is already operational but it is still adding new members.
The ordinance also includes a (radiological) dose-dependent action plan detailing measures to protect the population in an event involving the release of radiological substances. The ordinance and especially the dose-dependent action plan is now being revised and adapted in line with the *lessons learnt* from the Fukushima Daiichi incident.

Together with the cantons, the Federal NBCN crisis management board is also responsible for NBCN preparedness in Switzerland. This should ensure broadly accepted, target-oriented preparedness planning, and should, in turn, keep administrative problems to a minimum.

The aim of all the listed measures that have been taken or are still to be taken is to convert CBRN protection in Switzerland into a cyclical process, thereby ensuring its continual optimisation.

Medical CBRN protection

Based on the concepts of the Swiss Coordinated Sanitary Service (KSD) regarding the CBRN decontamination of patients in a mass-casualty incident (2007), 13 Swiss hospitals have declared themselves as "decontamination hospitals", i.e. they are able to decontaminate more than 30 contaminated patients per hour. However, given that the Swiss population (about 8 mn inhabitants) is not evenly distributed over Swiss territory (1/3 of the Swiss territory is covered by mountains), the distribution of decontamination hospitals should consider criteria such as population density, the geographical location of economic centres and transport axes. This has not been the case so far. Additionally, the current absence of a political mandate for hospitals to become decontamination centres is sub-optimal. However, plans are afoot to resolve this issue through the introduction of such a mandate by 2013. Furthermore, another project is under way to re-define the set of CBRN antidotes and their distribution in Switzerland in the event of CBRN mass-casualty incidents.

Further activities in the field of CBRN preparedness

In response to events in Fukushima, the Swiss government created an interdepartmental working group – "Management of extreme emergencies" – on 5th May 2011. Its mission is to investigate whether Switzerland needs to introduce legal and organisational measures to improve its emergency response plans. The group will closely examine the ordinance on the organisation of deployment in the case of CBRN incidents and natural disasters, the ordinance on radiation protection and the emergency response ordinance. The federal NBCN crisis management board will assist the group for the duration of its work, which is scheduled to end in late 2011 with the submission of its report to the Swiss government. The findings and measures detailed therein should inform both the major earthquake exercise SEISMO 2012 and the 2013 nuclear emergency exercise (accident in a Swiss nuclear power plant involving the release of radioactivity).

National emergency response and crisis management efforts taken at all levels should be reviewed in a national security exercise in 2014, which is being planned at the request of the Swiss government.

Another major project in this regard is the development of a national resource management plan, including international cooperation. Work is in full swing and should be completed by the end of 2012.

Outlook

Coordinated CBRN protection in Switzerland is still in its infancy. Nevertheless, the introduction of measures is well on track and we shall soon see whether the stated aims of this new approach have been achieved.

Nevertheless, several issues have yet to be resolved. The coordination of all ongoing projects could be better still. For example, the ordinance on the organisation of deployment in the case of CBRN incidents and natural disasters, the Strategy of the Joint Cr

Protection System and the Protection & Support Service 2015+ report as well as the consensus report explicitly reckon with the earmarking of the military resources concentrated within the DDPS for the provision of subsidiary support to the civilian authorities, especially in the event of an NBC incident. Furthermore, the deployment of these military resources (or more generally, military capabilities) in such instances are subject to binding regulations (Art. 3, para. 3, the CBRN ordinance). This, coupled with the measures set out in the consensus report, implies at least the consolidation, if not an increase, of army capabilities in disaster response situations, particularly NBC incidents.

However, following the 2010 Swiss Armed Forces Report and its call for cuts, the army have adopted a scattergun approach to finding ways to reduce its capabilities by up to 20%. This also applies to the NBC Defence Troops which are still under development (14).

Another important aspect is obvious: the above basic action plans that aim to improve how Switzerland responds to CBRN incidents will soon go onstream. However, the clearly defined measures proposed therein will come at a financial cost. Despite Fukushima and the recent terror attack in Norway in July 2011, most of us still find it hard to accept that events like these could happen in a prosperous high-tech country such as Switzerland. Pragmatic security-related issues are only raised, if at all, by politicians seeking to win elections.

Nevertheless, lessons from Deepwater Horizon and Fukushima (15) clearly demonstrate that:

- even if day-to-day operations seem safe and secure, disasters still happen;
- we must ready ourselves for CBRN incidents even though we do not know that such an incident will ever occur;
- it really does help to think the unthinkable.

In the years to come we shall discover whether the political class has been willing to learn these lessons and to accept the consequences they entail. In addition to the Swiss Constitution proclaiming that the protection of the population is a core duty of the Swiss Confederation, history also shows us that safety and security has never, and never will, come cheap.

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Top Ten Reasons That Hospitals are not Prepared to Evacuate in a Large Emergency

By Clif Carothers (Disaster & Emergency Management [DEM] Group at LinkedIn)

When natural emergencies disable a hospital, inhibiting its ability to provide care to its patients such as recently occurred when a tornado devastated the St. Johns Regional Medical Center in Joplin, Missouri, the emergency community rushes to its aid. Acting on years of training and planning, they quickly evacuate its patients and victims to safety. However, in large scale disasters affecting multiple hospitals within a region, the overwhelming emergency resources required to evacuate a single facility may not be available for days.

During regional emergencies, hospitals are much more dependent on their own emergency and evacuation plans and resources to save lives. Having reviewed several hundred hospital evacuation plans, I can attest that while the hospital industry has made major strides in emergency preparation during the past decade, a majority of hospitals in America are unprepared to evacuate in a large scale emergency. As a brief summary, I have listed ten reasons:

1. Insufficient transportation resources – During a large emergency, local, state and federal resources place hospitals at a lower priority of evacuation. Most hospitals do not have alternate sources of transportation nor have they considered the number and type of resources that would be required to adequately respond to their emergency.

2. Undeveloped receiving facility resources – While most hospitals have mutual aid agreements and MOUs with other hospitals in their region, many have not developed detailed procedures for emergency

acceptance and admittance. Most do not have agreements that go beyond their region in the event that their MOU receiving facilities are affected by the emergency.

3. Limited tracking – A large scale evacuation of several hundred patients in the span of 24 hours entails the potential use of dozens of ambulances, helicopters, and aircraft as well as the coordination of hundreds of personnel. In addition, internal and external tracking of patients, medicines, charts and personal belongings must be managed and tracked to mitigate the effect on patients and their families. Most hospitals do not have systems to accomplish this feat.

4. Lack of Coordination with Emergency Community – A majority of hospitals have reviewed their emergency and evacuation plans with their emergency management, EMS, police and fire departments. However, many have not relayed the weaknesses of their facility, nor have they clearly delineated the expectations they have of their local emergency providers. In the event that local providers are unable to assist, most hospitals have not detailed what is required to bring in outside providers. In addition, most have not detailed the communication plans that must be in place between the facility, their providers, and the emergency community.

5. Unclear triggering strategy and methodology – JCAHO standards outline minimum rationale for evacuating a hospital, yet realistic criteria are more complicated. Because of conflicting management issues, most decision criteria are not well delineated, creating confusion amongst the implementers of evacuation policies.

6. Undefined communication system – While most hospitals have acquired adequate communication hardware, including multiple backup methods, most have not defined the detailed communication processes that must be in place to implement a realistic evacuation. Rapid mass coordination of admission to receiving hospitals is one example.

7. Limited triage plan – Most hospitals have basic triage methodology to fit specific vulnerability analyses. However, many hospitals' triage procedures have not considered realistic timing limitations of known transport resources and receiving facilities as well as a realistic rate of patient and personnel evacuation.

8. Undeveloped patient preparation plan - While much work has been done by most hospitals to develop detailed vertical and horizontal evacuation plans that correspond to required fire safety protocols, many hospitals inadequately rely on this planning to fulfill emergency internal evacuation processes. As an example, in most cases, vertical evacuation should be coordinated with the arrival patterns of transportation vehicles.

9. Lack of cost tracking – To be reimbursed by the Federal Government after incurring emergency expenses during a federal emergency, the hospital must provide detailed time and cost records for all personnel, materials, and vehicles used in the emergency. Most hospitals do not have adequate procedures or capacity to account real time for costs, potentially forfeiting millions of recovery dollars as a result.

10. Inadequate funding – The United States has access to 70,000 ambulances, enough to overwhelm even most large disasters. However, many hospitals rely on the Stafford Act to fund their rescue, limiting access to available resources. Most have not planned for alternate funding mechanisms to draw upon during an ongoing emergency.

Clif Carothers *is President at* ***EPI-Center, Inc.*** *and at* ***U.S. Air Ambulance.*** *EPI-Center, Inc. is uniquely positioned to prepare for and conduct rapid response, targeted, complete evacuations of health-care facilities involving thousands of patients for the benefit of private customers, local, state and federal governments during large-scale disasters. U.S. Air Ambulance provides patient transportation by air ambulance, airline critical care medical stretcher, airline escort, Amtrak train escort, and long distance ground ambulance. We also provide entire hospital evacuation services during a regional or national emergency. In addition, we provide large scale repatriation services to the federal government.* ***Disaster & Emergency Management [DEM] Group*** *at LinkedIn is a member only group of people specialized in DEM.*

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Lessons from High Reliability Organizations (HRO's)

By Julian Talbot

Some of the best research in the area of risk management comes from studies into an area known as high reliability organizations (HRO's). HRO's include organizations such as nuclear power plants, aircraft carriers and air traffic control. This type of organization is notable, according to Rochlin [1] because "*these organizations have not just failed to fail; they have actively managed to avoid failures in an environment rich with the potential for error*." That ability to actively and reliably manage to reduce the chances of mistakes occurring, rather than to avoid the hazards, has been the distinguishing hallmark of most HRO's and their experience offers many lessons for the application of risk management at the enterprise level.

Work by Karl Weick and Kathleen Sutcliffe [2] into this area suggests that five key elements contribute to what he describes as a state of 'mindfulness':

1. Preoccupation with failure
2. Reluctance to simplify interpretations
3. Sensitivity to operations
4. Commitment to resilience
5. Deference to expertise

At first many of these processes appear to be self-defeating on multiple levels. But, as Weick further explains why these processes are necessary if a high reliability organization is to be successful their validity becomes increasingly more apparent.

Preoccupation with failure

HRO's like most organizations celebrate their successes but Weick [3] also notes "*a chronic worry in HROs is that analytic error is embedded in ongoing activities and that unexpected failure modes and limitations of foresight may amplify those analytic errors*."

Reluctance to simplify interpretations

Most organizations are happy to handle complex issues by simplifying them and categorizing them, thus ignoring certain aspects. HROs, however take nothing for granted and support cultures which

attempt to suppress simplification because it limits their ability to envision all possible undesirable effects as well as the precautions necessary to avoid these effects. HROs pay attention to detail and actively seek to know what they don't know. They endeavor to uncover those things that might disconfirm their intuitions despite being unpleasant, uncertain or disputed. Skepticism is also deemed necessary to counteract the complacency that many typical organizational management systems foster.

Sensitivity to operations

Weick describes sensitivity to operations as pointing to "*an ongoing concern with the unexpected. Unexpected events usually originate in 'latent failures' which are loopholes in the system's defenses, barriers and safeguards who's potential existed for some time prior to the onset of the accident sequence, though usually without any obvious bad effect.*" [4]

Management focus at all levels to managing normal operations offers opportunities to learn about deficiencies that which could signal the development of undesirable or unexpected events before they become an incident. HRO's recognize each potential near-miss or 'out of course' event as offering a 'window on the health of the system' – if the organization is sensitive to its own operations.

Commitment to resilience

HRO's develop capabilities to detect, contain, and bounce back from those inevitable errors that are a part of an indeterminate world. The hallmark of an HRO is not that it does not experience incidents but that those incidents don't disable it. Resilience involves a process of improvising workarounds that keep the system functioning and of keeping errors small in the first place.

Deference to expertise

HRO's put a premium on experts; personnel with deep experience, skills of recombination, and training. They cultivate diversity, not just because it helps them notice more in complex environments, but also because rigid hierarchies have their own special vulnerability to error. As highlighted by the work of James Reason and HFACs, errors at higher levels tend to pick up and combine with errors at lower levels, exposing an organization to further escalation.

HRO's consciously evoke the fundamental principle of risk management – that 'risk should be managed at the point at which it occurs'. This is where you will find the expertise and experience to make the required decisions quickly and correctly, regardless of rank or title.

Unfortunately most organizations do not work at this level, preferring to manage risk through the introduction of standard operating procedures, policy and work instructions. While these undoubtedly have their place, and can help people to make quick and consistent decisions, a significant body of research also indicates that the blanket application of these controls can reduce individuals 'mindfulness' and personal responsibility, thereby contribute indirectly to increasing operating risk.

Other lessons from HRO's

Other lessons from HROs include the strong support and reward for reporting of errors based on recognition that the value of remaining fully informed and aware far outweighs whatever satisfaction that might be gained from identifying and punishing an individual.

The Icarus Paradox

Many experiments have shown that people who succeed on tasks are less able to change their approaches even after circumstances change. (The hammer and the nail syndrome). Starbuck and Milliken in their analysis of the Challenger disaster said: "*Success breeds confidence and fantasy. When an organization succeeds, its managers usually attribute success to themselves or at least to their organization, rather than to luck. The organization's members grow more confident of their own abilities, of their manager's skills, and of their organization's existing programs and*

procedures. They trust the procedures to keep them appraised of developing problems, in the belief that these procedures focus on the most important events and ignore the least significant ones." [5]

This level of complacency is a breeding ground for inadequate or ineffective organizational risk management and needs to be fully considered when reviewing the internal context and the risk management context.

Sources:

[1] Rochlin, Gene (1996) "Defining 'High Reliability' Organizations in Practice: A Taxonomic Prologue," p. 15 in Roberts, Karlene, 'New Challenges to Understanding Organizations', Macmillan Publishing Company, New York, USA

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[5] Starbuck, W. H. and Milliken, F. J. (1988) "Challenger: Fine-tuning the odds until something breaks", Journal of Management Studies, Vol. 25, 319-340, New York, USA

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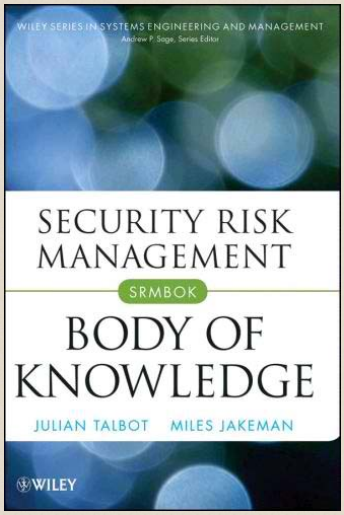

A framework for formalizing risk management thinking in today's complex business environment. Security Risk Management Body of Knowledge details the security risk management process in a format that can easily be applied by executive managers and security risk management practitioners. Integrating knowledge, competencies, methodologies, and applications, it demonstrates how to document and incorporate best-practice concepts from a range of complementary disciplines. Developed to align with International Standards for Risk Management such as ISO 31000 it enables professionals to apply security risk management (SRM) principles to specific areas of practice. Guidelines are provided for: Access Management; Business Continuity and Resilience; Command, Control, and Communications; Consequence Management and Business Continuity Management; Counter-Terrorism; Crime Prevention through Environmental Design; Crisis Management; Environmental Security; Events and Mass Gatherings; Executive Protection; Explosives and Bomb Threats; Home-Based Work; Human Rights and Security; Implementing Security Risk Management; Intellectual Property Protection; Intelligence Approach to SRM; Investigations and Root Cause Analysis; Maritime Security and Piracy; Mass Transport Security; Organizational Structure; Pandemics; Personal Protective Practices; Psych-ology of Security; Red Teaming and Scenario Modeling; Resilience and

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