

# EMERGENCY MANAGEMENT IN SLOVENIA

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**Abstract:** Accidents may occur during the production, transport, use or storage of the radioactive materials. Experience has shown that advance emergency planning is essential in order to mitigate the consequences of the accidents. The paper presents the general philosophy applied in Slovenia to the problem of emergency response; background information on the Slovene use of nuclear energy; and finally legal, organizational, planning and reviewing aspects of the Civil Protection applying to nuclear or radiological emergencies.

## INTRODUCTION

Changes that occurred in Slovenia as a result of independence required a new assessment of the situation in the field of disaster protection, as well as the coordination of policies and goals. Slovenia is at present in the process of reconstructing its system of protection against natural and other disasters.

The system for protection and rescue is organized as an overall system established for the protection and rescue of people, material and other goods in the case of natural and other disasters, in war and in other extraordinary circumstances. The most important points for legal and system-related regulation in the field of disaster protection are determined by the National Assembly. Civil protection and other disaster protection activities are humanitarian and non-military in nature.

In this general context nuclear or radiological accidents fall under industrial accidents which in turn are treated as "other disasters".

## GENERAL PHILOSOPHY AND BACKGROUND INFORMATION

Protection against disasters is undertaken by those bodies, services and organizations, whose regular activities already include such operations. If these are not sufficient, additional forces and means for

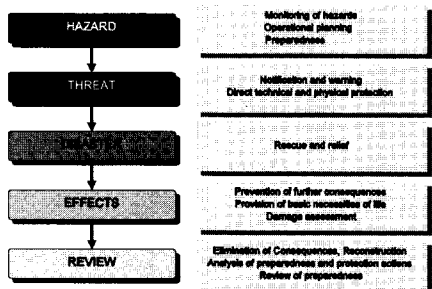
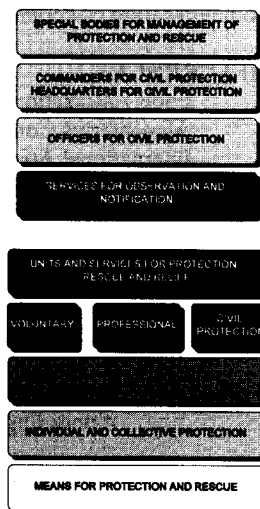


Figure 2. Disaster protection duties

protection is shown in Fig. 1. and disaster protection duties in Fig. 2.

On the basis of the new Constitution entirely new legislation is currently under preparation. Two fundamental laws already exists.



protection, rescue and relief are brought in. These are mostly forces and means of Civil Protection (CP) which are organized as a special, designated section of the overall safety an protection system in the country. It is obvious that state and local authorities cannot provide sufficient collective assistance during disasters. Therefore the initiative of the local population and their capabilities for individual protection are of vital importance. The Slovenian system of disaster

Figure 1. The system of disaster protection

Operational implementation of protection, rescue and relief in the event of natural and other disasters, in war time and other extraordinary circumstances is planned through protection and rescue plans. Protection and rescue plans are based on risk assessments, studies of the vulnerability of the living environment and other studies and investigations relevant to protection and rescue. All of the above information is used to determine which local communities or economic associations or other organisations require protection and rescue plans. Forces of protection, rescue and relief at the state level are shown in Fig. 3.

Slovenia has beside more than 400 radiation sources also one nuclear power plant (a two-loop PWR, 632 MW electric power) and one research reactor. Construction at the Krško site began in early 1975. The plant was synchronized to the national grid in October 1981.

### PLANS OF PROTECTION AND RESCUE IN THE CASE OF NUCLEAR ACCIDENT AT THE KRŠKO NUCLEAR POWER PLANT

Measures to be taken in emergency situations are stipulated in a number of plans, from the national level to the local community level and the plant itself.

According to the law Administration for Civil Protection and Disaster Relief (ACPDR) is responsible for planning and preparedness off-site at the national level. The ACPDR prepared, amended and maintains Emergency Plan in the Event of a Nuclear Accident at Krško NPP. The plan postulates three emergency planning zones (EPZ): (i) urgent protective actions EPZ within 10 km

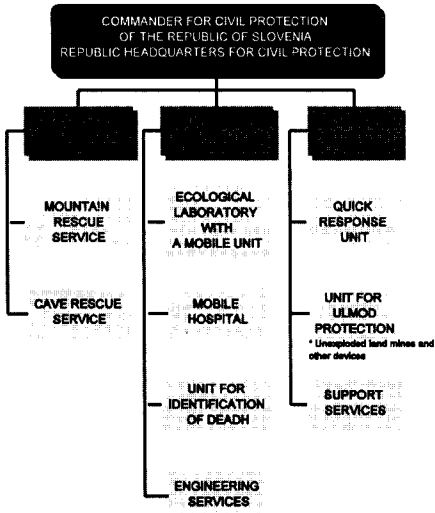


Figure 3. Forces of protection, rescue and relief of the Republic of Slovenia

radius, (ii) food-chain and long term protective actions EPZ within 25 km radius and (iii) general preparedness EPZ covering the whole Slovenia.

The emergency plan at Krško NPP defines an organised and effective response by personnel at the NPP to ensure protection, health and safety and to reduce the consequences of any accidents. Emergency situations in the facility are divided into four categories: abnormal occurrence, abnormal situation, site emergency and general emergency. Appropriate actions are planned for each category.

The Administration of Nuclear Safety (ANS) has its own plan of actions, harmonized with the national plan. In the event of nuclear or radiological emergency the ANS functions as a professional support and advisory body to the Civil Protection Headquarters. Three expert groups are organised for analysis of the accident, dose assessment and for support

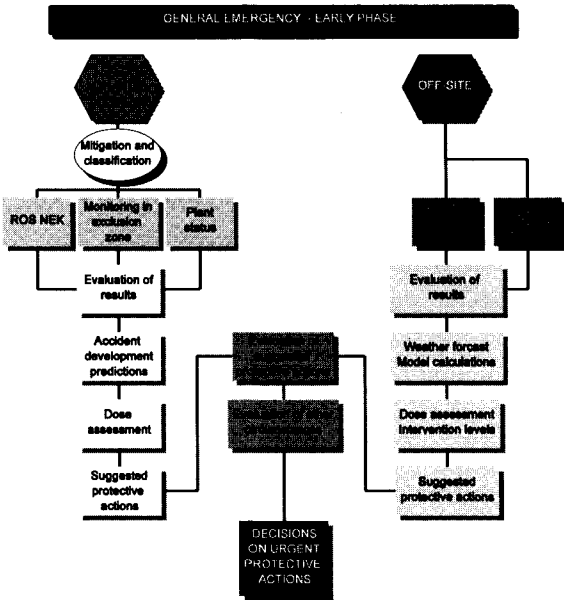
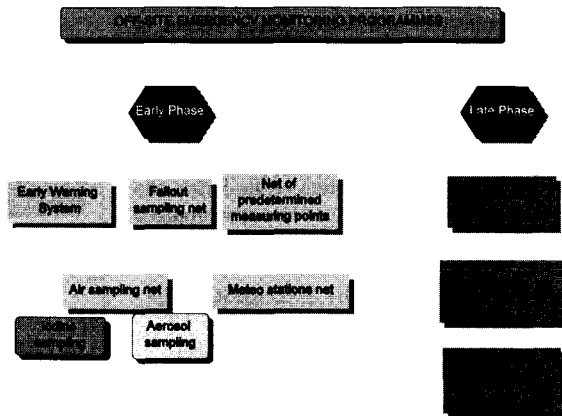


Figure 4. Emergency response in early phase of the accident

and preparation of information for public and the IAEA. The ANS is responsible to notify the IAEA and the countries which could be affected by the accident through international conventions and bilateral agreements. The embassies of neighbouring countries are informed through the Ministry of Foreign Affairs.

Emergency response strategy in early phase of the accident and structure of off-site emergency monitoring are shown on Fig. 4 and 5 respectively.

To test the plans and to remove shortcomings an overall exercise was prepared and conducted in 1993. The exercise showed that the planned on-site and off-site actions form a sound basis for taking emergency actions.



## CONCLUSIONS

Figure 5. Off-site emergency monitoring programmes

- Slovenia has Civil Protection for coping with the emergencies.
- The CP Headquarters at national level established highly professional emergency units in different fields of emergency response.
- Additional efforts to increase the preparedness of the CP staff and units to cope with radiological emergencies have paid off handsomely and have led to a general improvements of the performance of CP, also for other types of emergencies.

Finally, a reasonable degree of preparedness has been achieved. However, there always remain some questions and problems yet to be answered and solved. Among these one might choose the following ones. In near future Slovenia has to:

- i. complete its own regulations,
- ii. implement a new national early warning system,
- iii. improve adequate and effective mean for public information and
- iv. update the equipment and training of CP in dealing with radiological emergencies.