

INTERNATIONAL COOPERATION FOR DISASTER MANAGEMENT --ROMANIAN-
AMERICAN EXPERIENCE IN THE ACHIEVEMENT OF A JOINT EXERCISE USING DECISION SUPPORT
TOOLS FOR RADIOLOGICAL EMERGENCY

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ABSTRACT

International coordination and cooperation is rewarding but at the same time very challenging. This paper will discuss the Romanian perspective on technology transfer, its problems and its advantages. Further, the discussion will take place in the context of preparing for an international conference while at the same time exchanging civil defense expertise. The American perspective on the same subject will also be presented with healthy doses of mutual explanations. The final portion of the paper will present the joint lessons learned from the newly created interfaces and what it holds for the future.

I. INTRODUCTION

In the North Atlantic Cooperative Council (NACC) Seminar, which took place in Romania in September 1994, a computer assisted demonstration was presented, the significance of this demonstration was that it illustrated the successful cooperation between Romania, Bulgaria, and the USA. As important was also the human bond that has been established between those organizations and countries. Involvement in these activities allowed the way towards success despite distances and differences in languages, culture, and tradition. No one claims that the key to success for international cooperation was found, but of course there were a lot of things to learn about. This paper begins with a chapter titled Background, which presents the organizations involved in the activities resulting in the demonstration of cooperation. The paper then closes with a final chapter specially dedicated to the conclusions and lessons learned, but also includes recommendations

for the future. The paper aims to present the Romanian and American experts' opinion about the demonstration of using computer technology for helping the international cooperation in the field of disaster management. These experts were directly involved in this effort. What hopes did they have, what have they achieved, and what were their disappointments? There is a little bit of each in this experience that they have gained.

II. BACKGROUND

It is known the importance of bilateral and multilateral contacts regarding emergency planning between nations of Europe, North America and even the world. These contacts may be transformed into an effective cooperation in the field of response to disasters, and in order to be materialized and developed towards the expected direction, sometimes they require support from organizations such as: North Atlantic Treaty Organization (NATO), NACC, United Nations Organization and even the European Union.

Also in order to meet the necessity of a close and effective cooperation between NATO, and Central and East European nations, in November 1992 the USA initiated in these countries the US European Command's Military to Military Contact Program ("MIL-TO-MIL"), which now has Military Liaison Teams in almost all these nations. It is worth to be mentioned that between the Military Liaison Team for Romania and the Romanian Civil Defense Command, a fruitful relationship has been established.

Lately direct relationships were encouraged between the National Guard of the USA and military governments from Central and Eastern European countries. These were materialized in tours for mutual information about the capabilities and requirements for response to all forms of disasters,

In October 13, 1993, in Brussels, the plenary session of the Senior Civil Emergency Planning Committee (SCEPC) of NATO took place. During this session Romania had offered itself to be the host of the Seminar on International Cooperation for Disaster Management to be held during the second half of 1994.

In February 1994, an American team formed by representatives of the Department of Defense (DoD), Federal Emergency Management Agency, NATO, Alabama Army National Guard (AANG) and experts of USASSDC visited Romania. The purpose of the visit was to observe the conditions offered by Romanian Ministry of National Defense, through its Civil Defense Command, for the organization of the Seminar in this country. The visit was also an opportunity for a better understanding of the Romanian civil defense organization system, and its emergency planning, and the establishment of close cooperation relationships between Romanian Civil Defense Command and AANG.

On this occasion it was presented the idea of a demonstration of a computer assisted exercise taking place in this Seminar. This exercise should illustrate the intervention and cooperation activities in case of radiological emergency having a transboundary effect, for a situation involving two neighboring European nations. Romania and Bulgaria were chosen as players in this tabletop exercise, in order to demonstrate this kind of cooperation. The choice was not made accidentally, but taking into account the neighborliness and collaborative relationships in the field of civil defense between these two countries. Technical support, computer experts, and training were to be provided by USASSDC.

What is the importance of this exercise?

Technologically it is a novelty for Central European countries' use in the field of disaster management. Although, Romania and Ukraine were the only former Warsaw Treaty nations that took part in the "First NEA International Offsite Emergency Exercise" organized by the Nuclear Energy Agency of the Organization for Economic Cooperation and Development.

Having on hand the technology and experts everything becomes simple and easy to use. What if some more is tried, for example international cooperation? In the beginning bilateral cooperation between two neighboring countries may be demonstrated, one of them having the risk source on its territory and the other suffering the consequence in case of disaster.

What kind of risk will be demonstrated?

One of the most feared risks nowadays is represented by radiological accidents, especially because of their catastrophic long term consequences and wide

areas affected. In Central and Eastern Europe there are nuclear reactors without containment that have a long functioning period. It may be demonstrated that well conceived and applied security measures and well conceived plans may reduce the risk, or in case of an event mitigate the consequences endured by the population. If we also add a good coordination of these plans upon the basis of mutual trust and understanding, this may become an example for a demonstration of computer technology utilization, e.g., Geographical Information System (GIS) at the international level. This could result in international cooperation for response to a radiological emergency situation. In such cases important problems occur because of the existence of many organizations and agencies, each having their own methods, proceedings, communication equipment, and maps to be used for intervention in case of disaster. At this international level the problem may be solved by interoperability, but there are other complex aspects that have to be solved here, such as compatibility and standardization.

During, the SCEPC - NATO plenary session of April 13, 1994, in Brussels, Romania was announced as host country for NACC Seminar on International Cooperation for Disaster Management. The title of the seminar was: "Civil Protection for Changing Times. Realigning War -- Related Civil Defense Programs for All Hazards Emergency Management and Planning for Radiological Accidents".

In his speech of April 13, 1994, the Deputy to the Under Secretary of Defense (Policy) for Policy Support of US DoD mentioned that Romania's national programs for cooperation between civilian government and military civil defense planning is a successful model. He was also impressed by Romania's commitment to realign its military civil defense structure to "all hazards emergency management" during peacetime. He also related that in the seminar hosted by Romania a tabletop exercise on international cooperation in case of radiological emergency would take place.

As a result of the American team visit in Romania in February 1994, beginning with July 16, 1994, a Romanian and a Bulgarian team of experts was prepared with the view to developing the computer assisted demonstration. As for the Romanian partner, this activity was well received and supported by the leadership of the Ministry of National Defense who understood completely the significance and importance of this effort. The financial support of this activity was provided by MIL - TO - MIL Program, and technical support by USASSDC at its headquarters in Huntsville, Alabama. This represented also a new occasion for the

Romanian partner to strengthen the relationship with the Alabama National Guard.

The American experts' team arrived at the place of the conference a week before the beginning of the Seminar, with the view to installing the equipment, finishing the last details and making necessary rehearsals. The first day of the Seminar, dedicated to Romania, allowed a short information about the Romanian civil defense organization system and the main risk sources on Romania territory. There were presented intervention plans for each type of risk, including the CANDU reactor security system -- the first reactor of Cernavoda Nuclear Power Plant (NPP) which will enter into function in 1995.

The second day was dedicated to international presentations, leading the attention to other practical aspects and technologies of the civil defense area. The tabletop exercise was programmed for the third day of the Seminar. The last day of the Seminar, an evacuation field exercise in case of nuclear accident at Cernavoda NPP was organized and carried out by the experts of the Romanian Civil Defense Command. They cooperated with the central and local authorities and representatives of the NPP, which were responsible for these measures.

The Commander of the Romanian Civil Defense Command, co-president of NACC Seminar, had mentioned in his opening remarks that the participation of 22 nation representatives in this conference may be considered as a success. Its' importance is even greater, taking into account the presence of the Principal Director for Emergency Preparedness Policy and the Director for Emergency Planning from the Pentagon, and the Deputy Commander of USASSDC who was present on the third day of the Seminar".

III. ACTIVITIES PLANNING

As mentioned in the previous chapter, the Romanians and the Americans jointly reached the necessity of developing a strong relationship that would permit an unprecedented demonstration of multinational cooperation. Using advanced technology, this demonstration, would illustrate to the participants in the NACC Seminar, held in Romania the realities and possibilities of mutual cooperation to address common disasters.

The initial stages of planning were difficult. There were taken into consideration problems that would appear and affect the common effort. There could be management difficulties, political issues, languages problems, cultural differences, or technology circumstances that would surface and interfere with the

planning, development, and conduct of the computer demonstration activities. The approach to working was to envision a suite of contingencies in an effort to address each of the areas of potential difficulty.

Management difficulties generally might appear in getting several layers of organization of each partner to agree on the scenario of the demonstration. If there was substantive disagreement on the text of the demonstration, time to resolve the disagreement would be limited. As it turned out more time than was expected was needed to start first corrections. The significant issue was that there was not much time dedicated to study the computer projected material. This caused some last minute problems. In the remaining hours before the demonstration just how much of the material could be revised and then practiced enough to be polished?

Political issues could potentially have delayed or canceled the effort. Fortunately, these influences created no significant side effects for the common effort. Each party provided details to their government on the objectives and the political way in which the radiological release exercise material would be presented. This matter-of-fact approach, the continuing trust that was developing among partners, and the timeliness of the material on the world stage had positive effects on any political issues.

Language skills were essential, because the American party was not prepared in this matter, the full burden of translation fell on the Romanian partner. The mutual sharing effect of learning to operate the software to be used at the demonstration drew each partner together into a common bond. Amazingly, some two-person conversations used intuition as a successful form of communication.

Other issues taken into consideration at this moment of planning were the cultural and technical ones, although it was hard to envision the effects that might impend over cooperation. It was even considered that the technical aspects would present the least difficulties.

Considering all these factors which until the last moment showed their positive and negative effects, there were still questions. Could the joint exchange of necessary information be achieved and then the meaningful demonstration be developed and conducted for a large multinational civil defense conference? The time line was less than seven months. Could the many coordinations be included within this period of time?

The concerns were many, but first the American party must accomplish what they had promised to the Romanian partner. There was little room for error. The mission would have to be completed in the time allocated.

With this end in view, each partner accomplished major operations that would answer to all contingencies:

- Providing people to become familiar with the software,
- providing necessary conditions for planned activities development,
- taking into consideration multi-sources of data,
- permitting careful agreements on the script by all parties and proper documentation,
- and the inclusion within their programs of non-working experiences in order to get the partners closer.

Moreover, the American partner had assumed the following responsibilities:

- Making available two computers, necessary software, power conditioning equipment, projector and necessary backup supports for computer files,
- carrying out the rehearsals with technical people,
- and performing careful checkouts of software and data sets.

IV. DEVELOPMENT OF PLANNED ACTIVITIES

The cooperation between Romanian and American partners included the discussion of the scenario proposed by the American partner with Romanian and Bulgarian planners, but also, the initiation in and training with GIS of the Romanian and Bulgarian computer experts.

Besides the interest shown for maps, existent programs and plans for emergency automation of intervention management, the American partner had evaluated the Romanian civil defense possibilities to assimilate them into the GIS.

Beginning with February, a long training period was developed by the Romanian partner, using the handbooks and publications received from the USA. The training continued with a practice, during ten days in Huntsville, Alabama, at the headquarters of USASSDC and concluded with a final practice the week prior to the NACC Seminar, in September 1994.

The activity developed in Huntsville was the catalyst of the entire Romanian experts' process. Redundant computers were made available by the American team. The cooperation in this area was accomplished only with experts directly involved in this exercise. When the Romanian team arrived in Huntsville, digital maps were already made by American

experts. The Romanian partner mission was to select proper maps for the scenario, and input specific civil defense information into the database and learn to operate the application software "ArcView".

It was a great effort for both partners. Before the departure of the Romanian team from Huntsville, a rehearsal was made in conditions similar to those provided by Romania for the demonstration in the NACC Seminar. Another accomplishment was the detailed discussion of the scenario. It was agreed upon to present the activities carried out within the first 72 hours from the moment of radiological emergency occurrence. The accident was planned for a level 6 or "serious event" on the International Nuclear Event Scale (INES). This magnitude of the simulated accident was chosen in order to imply the intervention and cooperation of neighboring countries and also of international organizations.

Romania was represented on the panel by the Commander and members of Romanian Civil Defense Command, Regional Chiefs of Staff of Civil Defense, Representatives of Ministry of Agriculture and Food, Ministry of Health, Ministry of Waters, Forest and Environmental Protection and the Romanian Regulatory Body -- National Commission of Nuclear Activities Control. Bulgaria was represented on the panel by the National Director of Civil Defense, the Regional Director of Civil Defense, and the Plant Manager (Safety Director).

Taking part together at these activities friendships were begun and nurtured between members of the teams. Programs of shared non-working experiences were implemented by both partners that heightened the feeling of camaraderie. At the onset the Americans were somewhat cautious. However the Romanians were immediately open and warm. This quickly cleared the atmosphere for mutual trust in the joint capability to accomplish this time sensitive program.

V. THE DEMONSTRATION

"Disasters have no boundaries" is obvious and valid for everybody, politicians and experts. Disasters strike countries no matter what economic level they have, people's pains and tributes to the consequences being the same.

Referring to radiological emergency, an illustrative example is the accident at Chernobyl NPP, with serious consequences not only for the former USSR, but also for neighboring countries. After this event, the majority of countries have reevaluated their radiological emergency plans and improved the training of the

personnel responsible for their implementation. With this end in view, a standardization process at international level has been developed for specific procedures in this kind of emergencies. So, the response activities would be closer and in agreement with each country's legislation. This process is still developing.

An important role for an effective activity in case of radiological emergency is held by experts' trained within the structures and bodies responsible for decision making, and analysis. An important role is also held by technical support provided for this process. In case of a nuclear transboundary accident it has to be added an early notification and information sharing, on the basis of protocols, agreements and conventions is essential. This aspect involves observing the Convention on Early Notification and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. These conventions stipulate the mutual assistance given by different countries, or by international organizations in order to cope with these events. These were some of the issues emphasized within the demonstration scenario of the computer assisted exercise presented during NACC Seminar.

The scenario proposed by USASSDC had the title "Decisions Support Tools for Disaster Management." It illustrated how two neighboring countries cooperate in case of nuclear accident with transboundary effect, both at local and national levels, and at international level. This kind of tabletop exercise aims to demonstrate the support that the computer and an appropriate software may provide for experts' training in different emergency situations.

At the end of almost seven months of preparedness, on the third day of the Seminar everything was ready for the exercise, both the equipment and technical people involved in this effort. The Demonstration included several modules, each of them relating to a specific response phase of a nuclear accident: Scenario Introduction, Notification Phase, Response Phase, Hazards, Remediation Phase, Questions and Answers and Lessons Learned, covering 4 hours. One of the panels had represented the country that holds the nuclear power plant as the source of the hypothetical accident and the other had represented the affected country. A moderator had the role of asking questions, related to the topics of the modules, to panelists and representatives of international organizations.

The panelists answered the questions referring to the emergency plans of the nuclear power plant and civil defense organizations at local and national level; evaluation of emergency support between affected countries and from international organizations; support

operations such as search and rescue, law enforcement, public affairs, radiation monitoring, communication systems, and public protection -- sheltering, decontamination, medical support, transportation and evacuation; evaluation of the existent agreements between affected countries, international conventions, the role of International Atomic Energy Agency and actions undertaken by this organization in such situations. At the same time there were discussed: notification and warning system for the population; activity of different establishments in case of radiological release; emergency protection actions which would be taken within the first hours to protect the population; activation of response forces and how the medical support is provided to affected people; plans for decontamination of personnel and vehicles; short-term measures undertaken for agriculture products, before the arrival and after the passing of the plume of radioactivity; and precautions and levels of radiation that are considered dangerous.

The panels also discussed some long-term remediation measures related to recovering, decontamination, precautions and medical support and long-term programs for monitoring the health of the population, and monitoring and response to long-term effects of contamination to agriculture.

The presence of the computer was an efficient support in presenting and motivating the aspects included within the modules of the scenario. Digital maps helped the early evaluation of the situation and the database helped optimization of the measures taken for public protection.

Thus, it was demonstrated the support offered by GIS in situational assessments and decision making in case of emergency. The scenario tried to illustrate the multi-aspects that may occur in case of radiological emergency. This represented an opportunity for the panelists and representatives of international organizations to show their operation and decision making in such situations.

VI. CONCLUSIONS AND RECOMMENDATIONS

What criteria does one use to judge success or failure in a multiple lingual, cultural, technical effort?

The open-minded relation between people and their nations transformed technical language, associated with intuition, into a common language.

Humanitarian aspect of the activities presented in this paper brought together people involved in a joint effort. This helped then to know and understand each other better, to turn to good account spiritual and cultural riches of their countries.

Technical issues demonstrated the most potential for failure because of unpredictable elements.

No matter what issue is taken into consideration, it is recommended to keep a reasonable number of contingencies opened.

For Romanians this participation in the tabletop exercise preparedness was a good opportunity to consider thoroughly emergency plans at local and national level, to bring some procedures up-to-date and improve the training. The contact, with the Bulgarians, also involved in this effort represented a step forward toward transparency, a closer and deeper cooperation in the field of civil defense, not only for radiological emergency. This illustrates the importance of information exchange regarding risk zones that includes parts of a neighbor country, both in the purpose of a correct emergency planning and a timely starting of response activities.

A nuclear accident is a very complex event and that is the reason why, because of the short time, all the aspects wished to be presented could not be covered. Many questions asked during this demonstration had a general character, which involves long answers to be comprehensive. This situation caused a shortening of Questions and Answers Module. It would have been better maybe if only some aspects, considered important, were used to emphasize a certain area and detail it for the wished level.

Of course, beside bilateral cooperation, international cooperation has an important role, both for the experience of exchange between countries and for helping with resources in massive intervention operations, that cannot be timely carried out by their own

means. Another aspect of Romanian-American cooperation in this effort is the transfer of technology in the field of disaster prevention and limitation of consequences. This transfer takes place from a developed country towards developing or less developed countries. This is also an important direction to follow for reducing differences between countries in addressing any kind of disasters.

Romanian-American cooperation in achieving this tabletop exercise has demonstrated the existence of an assembly of factors that support this kind of efforts. The existence of modern training and intervention technologies, of plans which can include these technologies for the benefit of users, of experts who are able to establish a common language that helps the implementation of the plans when disaster strikes countries simultaneously are all examples.

Another positive aspect was the demonstration that, for this kind of cooperation between two countries -- Romania and Bulgaria is just an example -- the existence of a third partner, as an objective observer with the role of catalyst, has a major importance. Supporting this effort, this partner may become a guarantor of the success.

The key that will pull the partners together in a successful effort is the development of mutual trust and friendship.

All these briefly presented activities represent a proof for the possibility to extend in the humanitarian area the major activities of the Partnership for Peace Program.