



UNITED NATIONS  
ECONOMIC COMMISSION FOR EUROPE



Ministry for the Environment  
Land and Sea

TEIA/Danube project/5

ICARO

## **ECONOMIC COMMISSION FOR EUROPE**

CONFERENCE OF THE PARTIES  
TO THE CONVENTION ON THE TRANSBOUNDARY  
EFFECTS OF INDUSTRIAL ACCIDENTS

### **REPORT OF THE TECHNICAL WORKSHOP**

First phase of the project for Bulgaria, Romania and Serbia on joint management of transboundary emergencies from spills of hazardous substance into the Danube River

#### **Introduction**

1. The technical workshop, first phase of the project for Bulgaria, Romania and Serbia on joint management of transboundary emergencies from spills of hazardous substance into the Danube River, was held in Drobeta Turnu-Severin on 16-18 June 2009. It was organized within the framework of the implementation phase of the Assistance Programme for Eastern Europe, Caucasus and Central Asia (EECCA) and South-Eastern Europe (SEE) countries pursuant to a decision made by the Conference of the Parties at its fifth meeting (Geneva, 25–27 November 2008; ECE/CP.TEIA/19, paras. 50 (c)(iii) and 78 (i)).

2. The Ministry of Environment and the General Inspectorate for Emergency Situations within the Ministry of Administration and Interior of Romania organized the workshop. Italy provided funds to support this organization.

#### **I. OBJECTIVES**

3. The key objectives of the technical workshop were:

(a) To discuss the similarities and differences in crisis management procedures between the three project countries, and;

(b) To develop a general scenario to be used in the in-field exercise – second phase of the project.

## **II. PARTICIPATION**

4. The workshop was attended by representatives of the following authorities from the project countries: Bulgaria – the Ministry of Environment and Water, and the Ministry of Emergency Situations; Romania – Ministry of Environment, the General Inspectorate for Emergency Situations with the Ministry of Administration and Interior and its County's Inspectorate, the National Environment Protection Agency and its local branches, the Romanian Waters National Administration and its regional branches; Serbia – the Ministry of Environment and Spatial Planning, the Ministry of Interior, the Ministry of Defense, the Hydrometeorological Service, the Institute for Republic Health, the Municipality of Negotin.
5. The workshop was supported by experts from ICARO – Italian advisory company specialised in industrial safety, the Ministry of Environment, Land and Sea of Italy, International Commission for the Protection of the Danube River (ICPDR) and by the secretariat of the Convention.

## **III. OPENING, WELCOME ADDRESS, SETTING THE SCENE**

6. Mr. Nicolae Draghiescu and Mr. Matei Lapadat, representing respectively the office of Mayor of Drobeta-Turnu Severin, and the office of Prefect of Mehedinti County welcomed the participants and the experts to Drobeta-Turnu-Severin. They expressed their satisfaction that a project aimed at improving the cooperation on emergencies between Bulgaria, Romania and Serbia was conducted and when concluded should help the local authorities in their cross-border activities.
7. Ms. Alessandra Bianchi from the Ministry of Environment Land and Sea of Italy, stressing the importance of effective response to emergency situation, welcomed the willingness of Bulgaria, Romania and Serbia to work together in order to more effectively respond to emergencies in particular caused by spills of hazardous substance into the Danube River. She informed that Italy had been supporting initiatives to enhance the efforts of EECCA and SEE countries. Italy would be continuing with the support in the future in particular under the framework of the Assistance Programme.
8. A representative of the UNECE secretariat also addressed the meeting. After welcoming the participants and experts, he introduced the workshop's agenda explaining the planned way for reaching the objectives. He stressed the active participation to be the key in having a successful workshop.

## **IV. PROGRAMME**

### **Session I, Procedures for responding to emergency situations**

9. The workshop began with presentations on procedures in each of the project countries for (a) emergency notification, (b) emergency management and (c) modelling. The presentations

were followed by work in groups in order to further discuss these procedures and to identify similarities and differences with the aim to establish better understanding between the three countries.

10. The presentations and the work in groups showed that in general each of the project countries had established procedures for responding to emergency situations.

11. The emergency response starts at a local level. Depended on severity of the emergency and its consequences, the regional or national level authorities need to be involved into the emergency management. It is to be noted that also for minor emergencies, which do not require the involvement of the regional or national authorities, the countries established procedures for relevant notification about the emergency and response measures taken to the national level.

12. For severe emergencies on waters with transboundary consequences, each of the countries clearly specified the authorities at national level that need to be involved in the response. The representatives from these authorities need to form a body like Ministerial Operative Centre (MOC) that is taking the response decisions as well as decides on the early warning and information reports to the neighbouring countries.

13. Serbia informed that despite the regulations to form MOC there was no real experience in conducting joint management by all Ministries involved: Ministry of Interior, Ministry of Agriculture and Water and Ministry of Environment and Spatial Planning.<sup>1</sup>

14. Serbia also informed that so far no other system except the Principal International Alert Centre (PIAC) of the ICPDR is in use for international notification. This System is operated by the Ministry of Agriculture and Water. The Industrial Accident Notification (IAN) System of the Convention should be operated from the beginning of 2010 by the Centre for notification.

15. Bulgaria and Romania use both the PIAC and IAN systems. They are also operating in NATO and European Commission (MIC) and UN OCHA networks. In Bulgaria, these are the functions of a Centre for notification within the Ministry of Emergency Situations. In Romania all the systems except PIAC are operated in a notification centre of the General Inspectorate for Emergency Situations. PIAC is run by the Ministry of Environment.

16. The countries informed that the official transboundary notification is done only at national level and that only verified data are notified. This is especially important when confirming the source of pollution in order to avoid any unjustified claims for compensation of damage as arising from the liability procedures and polluter-pays-principle. Any other notification only exists based on informal telephone call between local authorities. Some municipalities from Bulgaria and Romania established such a good practice.

---

<sup>1</sup> The Centre for notification at national level was at the time of the meeting moved from Ministry of Defense to Ministry of Interior. To this end the procedures regarding the involvement of the Ministry of Defense were under revision.

17. The countries exchanged information about the available equipment and manpower for the emergencies at the Danube River. Serbia informed that floating barriers were at the time being only available in Belgrade, thus for any emergency in close vicinity to Bulgaria and Romania involving hazardous substance like gas oil the authorities would need to transport the equipment from Belgrade, what would take minimum 4 hours. They also informed that some emergency equipment was available with the operator of petroleum storage<sup>2</sup> in that region.
18. Bulgaria and Romania informed that response equipment was stored in several locations along the Danube River. In Bulgaria the floating barriers were always installed by special teams of scuba divers. In Romania boats were available to the response forces for installing the floating barriers.
19. All countries confirmed that each of them would not be able to take response measures during the night due to unavailability of appropriate equipment. They agreed to jointly examine future developments in this aspect.
20. The countries also discussed the immediate procedures, in case of severe pollution, for (a) stopping of navigation on the Danube, (b) closing of critical water intakes (drinking, agriculture, and industrial), and (c) banning fishing. They agreed that improvements in this area would be needful.
21. For the modelling of the oil spreading on the Danube River, the countries discussed the available tools for it. It was concluded that the most appropriate tool was the Danube Basin Alarm Model (DBAM) provided by ICPDR. By the time of the meeting only Romania had experience with using this modelling tool.
22. Romania noted that the only available version of the modelling software can be run at the computer with Windows 3.1. and therefore requested the representative of the ICPDR to verify if a newer version, which can be installed on the computers with Windows XP or Vista, were developed and could be provided to the country. Bulgaria and Serbia joined this request.
23. The countries also requested that their representatives would be trained on the use of the DBAM software, preferably its newer version and that such a training would be conducted still in 2009.

## **Session II: Elaboration of the exercise scenario**

24. The project countries agreed already at the project's kick-off meeting (Bucharest, 17-18 March 2009) that the in-field exercise should be initiated by a release of a substance dangerous for waters and coming from industrial site located in such a distance from a border that, in an event of industrial accidents, there was a high probability of transboundary effects. The

---

<sup>2</sup> The operator of Prahovo site, which was selected for the exercise, see also paras 24-26, purchased some response equipment

preferable site should also allow including in-field participation of all three countries to the exercise.

25. The countries identified a petroleum storage located at the bank of the Danube River in Prahovo, Serbia, as a possible source for causing transboundary effects in the event of an accident. The distance from the border to Romania and Bulgaria is respectively approximately 1 and 13 kilometres.

26. Following the kick-off meeting, at the invitation of the Convention's secretariat, Serbia confirmed its readiness to initiate the in-field exercise in Prahovo. To this end, during the workshop, Serbian representatives made presentations about the Negotin municipality, in which the petroleum storage is located as well as provided detailed information about the site itself and the equipment available for any response actions.

27. Based on the information available for the petroleum storage, ICARO representatives proposed for consideration and discussion a possible reference scenario, according to which the exercise could be initiated.

28. The scenario envisaged a sudden rupture of a loading arm during the process of unloading of gas oil from naval tanker. In such a case, the loading arm, which having a diameter of 200 mm and capacity of transferring 118kg/s between the naval tanker and the storage tanks, and which could be detached from operation approximately 3 minutes from the rupture, might cause during the 3 minutes time a release of 21,250 kg of gas oil into the river.

29. The release, taking into account the chemical characteristic of the gas oil, would form a film of oil floating above the water, which would be dispersed along the river flow stream depending on elements such as: water flow rate (speed, turbulences) and river characteristic (depth, presence of tributaries). This floating oil film would be transported by current downstream with its volume being reduced due to such phenomena as evaporation and spreading.

30. ICARO representatives showed by applying different models that despite the evaporation and spreading and even in case of low river flow and other favourable weather conditions that would stop the oil slick from being transported quickly, it would reach the border with Bulgaria 13 km downstream the river already after a few hours from the release. This proved that using the proposed scenario for the in-field exercise would allow the countries to test their emergency procedures and response capacities in a situation, which in case of a real accident, would require effective cooperation between the three countries.

31. The project countries accepted the proposed reference scenario to be used in the exercise and discussed in groups detailed planning for the exercise including also their expected engagement in the exercise. The conclusions of the work in groups are described under the session Conclusion and the wrap-up of the technical workshop.

## V. CONCLUSIONS AND WRAP-UP OF THE WORKSHOP

32. The project countries agreed that they would respond to the emergency as simulated in the exercise in accordance with the existing emergency procedures, taking each step that is needed for conducting the notification, including national and the cross-border notification, and organizing the response.

33. The exercise would start with the notification from the operator of the petroleum storage to the local authority in Serbia that it came to a rupture of the loading arm and that a release of gas oil could not have been controlled by the operator forces. The “point 0” of the exercise would be the receipt of the notification by local emergency department, who would take the steps to verify it, evaluate severity of the emergency, and notify accordingly the Centre for notification at national level (expected time 30-60 minutes from the point 0).

34. The national Centre would notify about the emergency the Serbian Ministry of Interior, Ministry of Agriculture and Water and Ministry of Environment and Spatial Planning, who would form a MOC to manage the response at the national level. They would need to evaluate the emergency and decide on initiating the early warning notification to Bulgaria and Romania (expected time 1 – 1.5 hours from the point 0). They would then continue the evaluation by receiving via national Centre for notification updated information from the local authorities on the movement of the gas oil slick, and decide on sending further information reports to the two neighbouring countries. For the international notification, the ICPDR PIAC und UNECE IAN Systems should be used<sup>3</sup>.

35. MOC would also decide on the response measures for stopping the gas oil slick like sending from Belgrade to the emergency location the needed response equipment (floating barriers, solvents, etc). The time needed for transportation of the equipment was estimated at 4-5 hours from the moment of the decision. The equipment would be ready for use after 6 -6,5 hours from the point 0, by which it was expected that the slick would leave the borders of Serbia, but the equipment might be needed to collect the gas oil that would stay at the Serbian bank of the Danube.

36. Romania and Bulgaria would verify the early warning report, after they would have received it at national level, by contacting their local authorities in the area of accident. Both countries would establish their MOC for managing the emergency accordingly (expected time 1.5-2 hours from the release). They would use their national points of contacts to request additional information about the emergency from Serbia as well as from their local authorities in order to be able to organize most effectively their response. Both countries would be also in contact with each other in accordance with the ICPDR notification procedures. They could also decide on requesting each other for the mutual assistance in stopping the gas oil slick.

---

<sup>3</sup> Despite the fact that Serbia should start operating the UNECE IAN system only at the beginning of 2010, it was agreed that it would use this system during the exercise

37. Depending on the situation development, Romania and Bulgaria would decide, using their available response forces, where to install the floating barriers on the Danube River to stop the gas oil slick.

38. The in-field exercise would take maximum 7 hours from the point 0. It would be observed by the exercise evaluators, who would preferably watch it from the boat that should follow the imitated gas oil slick. Representatives of Romania agreed to take required steps to provide a boat for this purpose.

39. It was agreed that the gas oil slick should be imitated by a thin plastic film of a diameter of 2-3 meters<sup>4</sup>. If needed, the evaluators would influence the movement of the plastic film. The evaluators would also give the information to the Serbian local authorities every 30 minutes from point 0, and to local authorities of Romania from the moment they would get involved into the emergency on what was the location of the slick and what the weather conditions were. Once the slick would cross the border to Bulgaria also its local authorities would be receiving this information. Until that moment Bulgarian authorities would only receive notification from Serbia and Romania through the formal notification ways (PIAC, IAN) or if relevant through informal local level communication ways. The information received from the evaluators would be used by the countries for modelling further dispersion of the gas oil slick, the results of which should be used in response actions.

40. Each project country should notify and receive required approval from the border police for conducting the exercise on the Danube, which in area of Prahovo is a border between Serbia and Romania and 13 km downstream a border between Romania and Bulgaria. The boat for the evaluators that should be provided by Romania should be granted an approval to move between Prahovo and the area where Romanian and Bulgarian response forces would install in due time from point 0 the floating barriers on the river.

41. Each country would appoint its representatives both from the response forces dealing directly with the emergency as well as from the MOCs who would prepare reports describing the actions taken. These reports would be presented during the one day evaluation workshop held in Negotin next day after the in-field exercise. The reports would be discussed with the evaluators. They would address the actions taken on notification, and emergency response as well as the use of modelling in the emergency response. The results of the modelling done by the countries would be compared against the modelling done by the evaluators. Modelling tools DBAM as well as ADIOS and FAY, which can provide results for a set of different hydrocarbons, would be used during the exercise.

42. Each country should appoint no more than 10 representatives to participate in the evaluation workshop. The representatives of the national authorities who would need to stay in

---

<sup>4</sup> Other floating objects (e.g. bottles), or a boat could be driven with speed and direction of a simulated slick centre as alternative solutions

the capitals during the exercise would travel to Negotin after the exercise to participate in the workshop.

43. Each country should take relevant steps to be ready for conducting the exercise at the end of September 2009 (between 23 and 25 or 28 and 30) according to the scenario described above. The preparations to the exercise would be reviewed at the pre-meeting in Negotin to take place between 1 and 4 September 2009. The exact dates for the pre-meeting and the in-field exercise with the evaluation workshop would be communicated by Serbian host by the end of July 2009.

## **VI. CLOSING OF THE WORKSHOP**

44. The secretariat expressed the appreciation to the Romanian organisers, in particular to Ms. Marilena Ghiu from Ministry of Environment and Mr. Francisc Senzaconi from General Inspectorate for Emergency Situations, for the excellent organisation and thanked the participants and experts for their active involvement in the technical workshop. He invited the countries to take the preparatory steps to the in-field exercise accordingly to the arrangements agreed during the workshop.

45. Mr. Senzaconi thanked the participants for their attention and the experts for their professionalism. He closed the meeting.

## **VII. LOCAL IN-FIELD EXERCISE IN ROMANIA**

46. In the morning of 18 June the workshop participants attended a local in-field exercise organized by the General Inspectorate for Emergency Situations from Mehedinti County. It took place at the Romanian bank of the Danube River a few kilometres downstream from Drobeta-Turnu Severin. The exercise was conducted based on the scenario which envisaged a collision of two vessels transporting oil causing oil release into the river.

47. During the exercise the response forces rescued the vessels' staff, installed the floating barriers and spread solvent into the river.



Annex

**WORKSHOP PROGRAMME**

<p><b>SESSION I – Procedures for responding to emergency situations</b></p>
<p><b>Notification in emergency situations</b></p> <p>(a) National emergency procedures and notification at international level in Bulgaria – Mr. Vasil Ivanov, Ministry of Emergency Situations</p> <p>(b) National emergency procedures and notification at international level in Romania – Mr. Francisc Senzaconi, General Inspectorate for Emergency Situations, Ministry of Administration and Interior</p> <p>(c) National emergency procedures and notification at international level in Serbia – Mr. Sasa Rancic, Ministry of Interior</p> <p>Notification in emergency situations in particular due to oil spill in the Danube – identification of available devices and manpower in the three countries – plenary discussion, moderator Mr. Wyrowski</p>
<p><b>Emergency management</b></p> <p>(a) Procedures for containment, mitigation, preventing water intakes downstream and restoration in Bulgaria, including aspects of international cooperation – Mr. Svetlin Stanev, Ministry of Emergency Situations</p> <p>(b) Procedures for containment, mitigation, preventing water intakes downstream and restoration in Romania, including aspects of international cooperation – Mr. Teodor Constantinescu, National Administration for Romanian Waters</p> <p>(c) Procedures for containment, mitigation, preventing water intakes downstream and restoration in Serbia, including aspects of international cooperation – Ms. Suzana Boranovic, Ministry of Environment and Spatial Planning</p> <p>Containment, mitigation, preventing water intakes downstream and restoration due to oil spill in the Danube – identification of available devices and manpower in the three Countries – plenary discussion, moderator Mr. Bruno Frattini, ICARO</p>
<p><b>Modeling</b></p> <p>(a) Approach to modeling in Bulgaria – Mr. Nikolay Savov, Ministry of Environment and Water</p> <p>(b) Approach to modeling in Romania – Mr. Septimius Mara, Ministry of Environment</p> <p>(c) Approach to modeling in Serbia – Mr. Branislav Gavric, Hydrometeorological Service of Serbia</p> <p>Modeling due to oil spill in the Danube – identification of available data and parameters – plenary discussion, moderator Mr. Neil Manning, ICARO</p>
<p>Work in groups – discussion on the procedures for notification, emergencies management and approaches to modeling</p>

<b>Session II – Elaboration of the exercise scenario</b>	
(a)	Presentation of Municipality of Negotin and the Prahovo site – Mr. Martin Popovic, Municipality of Negotin, Ms. Suzana Boranovic,
(b)	Draft scenario for an in-field exercise, Mr. Frattini, Mr. Manning
	Discussion in plenum on the draft scenario, direction for its further elaboration, moderator Mr. Manning
	Work in groups to elaborate the general scenario
	Wrap-up of the scenario and agreement on actions to be undertaken by each project partner before the in-field exercise

-----