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**ECONOMIC COMMISSION FOR EUROPE**

COMMITTEE ON ENVIRONMENTAL POLICY

MEETING OF THE SIGNATORIES TO  
THE CONVENTION ON THE TRANSBOUNDARY  
EFFECTS OF INDUSTRIAL ACCIDENTS

MEETING OF THE PARTIES TO THE  
CONVENTION ON THE PROTECTION AND  
USE OF TRANSBOUNDARY WATERCOURSES  
AND INTERNATIONAL LAKES

WORKING GROUP ON WATER MANAGEMENT

**JOINT WORKSHOP ON THE PREVENTION OF CHEMICAL ACCIDENTS AND  
LIMITATION OF THEIR IMPACT ON TRANSBOUNDARY WATERS**

Report prepared by the secretariat 1/

Introduction

1. The joint workshop on the prevention of chemical accidents and limitation of their impact on transboundary waters was held in Berlin (Germany) from 7 to 9 May 1998 at the invitation of the Government of Germany. It was organized as a result of the decision of the Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (hereinafter referred to as Water Convention) and the Meeting of the Signatories to the Convention on the Transboundary Effects of Industrial Accidents (hereinafter referred to as Industrial Accident Convention) to cooperate closely on issues related to the accidental pollution of transboundary waters.

2. The workshop was attended by experts from 25 countries, among them 14 countries in transition: Armenia, Austria, Azerbaijan, Belarus, Canada, Czech Republic, Finland, France, Georgia, Germany, Hungary, Italy, Latvia, Luxembourg, Netherlands, Poland, Republic of Moldova, Romania, Russian Federation, Switzerland, the former Yugoslav Republic of Macedonia, Ukraine, United Kingdom, United States and Uzbekistan. A representative of the European Commission also participated.

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## **BACKGROUND TO THE WORKSHOP**

3. Major accidents in industrial plants can have far-reaching transboundary effects. Accidents may, in particular, lead to restrictions on the use of transboundary waters as a source of drinking water or for industrial purposes or may harm or even destroy flora and fauna. A typical example is the disaster caused by the Sandoz Company in Basel in 1986, which seriously effected aquatic ecosystems, fishing, production of drinking water and industrial water use in France, Germany, the Netherlands and Switzerland.

4. To prevent such effects, safety recommendations were prescribed for operators of hazardous activities, in particular in catchment areas of transboundary waters. These recommendations provide for comprehensive technical measures to prevent major accidents and for technical and organizational measures to limit their possible impact.

5. Examples of how these safety recommendations can be put into practice have been given during the past few years by the International Commission for the Protection of the River Rhine (ICPR) and the International Commission for the Protection of the River Elbe (ICPE). Corresponding regulations for the rivers Oder and Danube are being prepared. These recommendations of joint bodies are considered as important steps to harmonize water protection legislation related to industrial plants in the riparian countries.

6. An analysis of accidents on the Rhine over the past ten years shows that the ICPR recommendations have led to a considerable decrease in accidental pollution. It is also widely known that such safety requirements are not specific to river basins. The safety level in all catchment areas of transboundary river basins has to be equally high. Therefore, the workshop was expected to provide inputs for the formulation of technical and organizational measures required to improve preventive measures against major accidents. Such measures are intended to help achieve a long-term goal: the harmonization of policies related to licensing and monitoring of industrial plants.

7. The ICPR and ICPE recommendations on the safety of industrial plants and preventive measures against major accidents could serve as a basis for further developments under both Conventions. They seem to be suitable for putting the Industrial Accidents Convention and the Water Convention into more concrete action.

8. To harmonize the implementation of both Conventions in the near future, there is a growing need to identify first those activities which fall within the scope of both and require special prevention, preparedness and response measures. Various procedures and methods to determine the hazard potential for water of specific industrial plants then have to be adapted. Thereafter, common criteria and common procedures for determining and evaluating the hazard potential for transboundary water have to be drawn up.

9. Contingency plans are also important instruments to successfully combat major industrial accidents which can have transboundary effects. To this end,

many requirements have to be met. These include criteria determining the time when an industrial plant has to initiate its contingency plans, in cooperation with competent and local authorities, which should also inform neighbouring countries of potential transboundary effects. The coordination between countries is needed with regard to the contents, implementation and testing of contingency plans.

10. It is necessary to share technology and information among ECE countries to harmonize national activities and ensure a uniform and high safety level for plants with a hazard potential for water. Specific demonstration projects in countries in transition may facilitate the development of a high industrial safety level throughout the ECE region. The practical experience gained within framework projects carried out in central and eastern European was of particular interest for the workshop. The most important results of these projects should be made available to and used by other ECE countries.

#### **OBJECTIVES OF THE WORKSHOP**

11. Against this background, the workshop was designed to provide a platform for government representatives and experts from public industry and private institutions to share their experience with the implementation and harmonization of measures to prevent or limit major accidents in industrial plants which could have an impact on transboundary waters. Annex I below lists the main issues that were to be considered at the workshop and further developed to prevent transboundary water pollution.

12. The main objective of the workshop was twofold: (a) to examine concrete and coordinated actions to prevent, prepare for, and respond to industrial accidents with effects on water, including transboundary effects; and (b) to develop a joint activity on the prevention of water pollution in transboundary waters arising from industrial accidents.

13. To pursue these objectives more specifically, the following four topics were selected as priorities for the discussions: lessons learnt from major accidents which have led to severe transboundary water pollution; technical, managerial and organizational requirements for plant safety; emergency planning; technology transfer and information exchange.

#### **OUTCOME**

14. The discussions addressed the following common issues for both Conventions, inter alia: measures to prevent, control and reduce any transboundary impact of accidental water pollution; preparation and implementation of on-site and off-site contingency plans, including appropriate measures to respond to, prevent and minimize transboundary effects, as well as the activation of these contingency plans in the event of an industrial accident; drawing up inventories and exchanging information on pollution sources likely to have a transboundary impact on water; requirements for the preventive and preparedness identification of hazardous activities; environmental impact assessment; research and development related to hazardous activities and less hazardous substances; responsibilities of operators;

consultations through joint bodies or other entities; public information and public participation in the decision-making process concerning hazardous activities; notification of industrial accidents; warning and alarm systems; functions of points of contact and mutual assistance in the event of emergencies.

15. The workshop recommended legal, administrative and practical measures to further implement the two Conventions. It also put forward essential requirements for plants that have a hazard potential for water. The approaches developed in particular within the framework of ICPR and ICPE were used for specifying concrete action to be taken under the two ECE Conventions.

16. The workshop on the prevention of chemical accidents and limitation of their impact on transboundary waters developed and adopted conclusions and recommendations as contained in annex II to this report for endorsement by the Meeting of the Signatories to the Industrial Accidents Convention (seventh meeting) and the Working Group on Water Management (first meeting), established under the Water Convention. 2/

17. The workshop participants expressed their gratitude to the Government of Germany for its hospitality, the excellent organization of the workshop, and the financial support provided to participants from countries in transition so that they could attend the workshop.

Notes:

1/ Pursuant to the decision of the Meeting of the Parties to the Water Convention (ECE/MP.WAT/2, annex II, programme element 1.1) and the decision of the Meeting of the Signatories to the Industrial Accidents Convention (CEP/WG.4/6, para. 34 (f) and annex, element 01.3.4.9).

2/ Document MP.WAT/WG.1/1998/6 proposes follow-up activities in the light of the decisions of the Signatories to the Industrial Accidents Convention at their seventh meeting (CEP/WG.4/1998/2, para. 31).

Annex I

**MAIN ISSUES TO PREVENT ACCIDENTAL WATER POLLUTION  
TAKEN INTO ACCOUNT IN THE PREPARATION OF THE WORKSHOP**

1. Development and implementation of technical and managerial requirements for improving safety at industrial installations

Pursuant to article 6 (1) of the Industrial Accident Convention and article 3 (1) of Water Convention, the Parties have to take suitable measures to prevent industrial accidents, including measures to encourage operators to reduce the risks to humans and the environment caused by industrial accidents, and to minimize the risks of accidental water pollution.

2. Basic requirements for water protection with special relevance to industrial installations:

During the past few years, ICPR has developed harmonized recommendations on water protection with relevance to industrial installations. ICPR has also laid down specific recommendations for technical measures for such safety-relevant areas as pipeline systems, sewage systems (waste water, cooling water and rain water), fire fighting and retention of fire fighting water, loading and unloading of hazardous substances, joint storage of hazardous substances and protection against overflowing and sealing systems.

3. Safety investigations of hazardous activities that can have a transboundary impact on water:

ICPE has prepared recommendations on the development of safety reports with regard to possible risks of water pollution. The most important features are probably the descriptions and examples of basic assumptions for scenarios in which hazardous substances are released into transboundary waters as a consequence of a major accident. For this purpose, experience was shared on how to define the source, dispersion models and assessments of the degree of severity of environmental pollution caused by the release.

4. Monitoring and review of hazardous activities and inspections

Monitoring industrial plants is one of the main tasks of company management in its efforts to minimize the risks caused by plants with a hazard potential for water. The higher a plant's hazard potential for water, the more comprehensive and the more intensive the monitoring measures that have to be taken. The essential basis for monitoring has already been summarized in ICPR recommendations.

5. Emergency planning, including on-site and off-site contingency plans

To respond to major accidents that can have transboundary effects, suitable measures (pursuant to articles 8 and 10 of the Industrial Accidents

Convention and articles 9 and 14 of the Water Convention) have to be taken to set up and organize response activities and ensure that they are fully effective in the event of emergencies. To this end, both principles of on-site and off-site contingency planning and of international alert system for rivers and lakes should be developed. ICPR and ICPE have already issued joint recommendations for the development of guidelines for on-site emergency plans with regard to accidents having a hazard potential for water. In addition, practical experience has been gained with on-site emergency plans within the framework of assistance projects for countries in transition.

#### 6. International alert and response systems

The international alert system and contingency plans introduced by ICPR and ICPE have proved successful. At the moment, corresponding work and goals are being pursued with regard to the rivers Oder and Danube as well as other European river systems.

#### 7. Exchange of technology and information

The exchange of technology and information is essential for both harmonizing national activities and achieving and ensuring the same safety level for industrial installations with a hazard potential for water. Practical experience gained through support projects in central and eastern Europe are of particular interest. This includes experience gained with the following projects: safety-relevant technical investigations at a chemical plant in the Czech Republic, plant safety in a petro-chemical plant and a refrigerating store in the Russian Federation, safety analysis of an industrial plant producing fertilizers in Ukraine, and preparation of an on-site emergency plan for a chemical plant in Poland.

Annex II

**CONCLUSIONS AND RECOMMENDATIONS AS ADOPTED BY THE WORKSHOP  
ON THE PREVENTION OF CHEMICAL ACCIDENTS AND LIMITATION OF THEIR IMPACT ON  
TRANSBOUNDARY WATERS**

1. The parent bodies of both the Water Convention and the Industrial Accident Convention should develop a long-term work programme for the implementation of the provisions common to both Conventions. This should include:

(a) The preparation of procedural recommendations on the prevention and limitation of the effects of accidental pollution on transboundary waters in order to assist countries in the implementation of the common provisions. The workshop further recommended that the Meeting of the Signatories to the Industrial Accident Convention should make the appropriate arrangements for drafting these procedural recommendations;

(b) The preparation of guidelines on industrial safety and water protection on the basis of guidelines and recommendations of the International Commission for the Protection of the River Rhine, the International Commission for the Protection of the River Elbe and other relevant organizations. The workshop further recommended that the Working Group on Water Management, established under the Water Convention should make the appropriate arrangements for drafting the guidelines. This work could include preparations for demonstration projects on the implementation of the guidelines in various transboundary river basins.

2. The Meeting of the Signatories to the Industrial Accident Convention should invite representatives of the Meeting of the Parties to the Water Convention or bodies established under the Water Convention as well as representatives of river and lake commissions to participate in appropriate simulation exercises organized under the Industrial Accident Convention to test relevant transboundary arrangements, including the UN/ECE Accident Notification System.

3. The Meeting of the Signatories to the Industrial Accident Convention, in cooperation with the Meeting of the Parties to the Water Convention, should:

(a) Examine the possibility of arranging, in cooperation with the European Commission and upon request, assistance for capacity building of governmental safety inspectors, including, for example, participation of foreign experts in inspection teams, training courses, and tailor-made on-the-job training;

(b) Make arrangements, as appropriate, to organize meetings under the Conventions back to back with a visit of a factory to study industrial safety measures, including staff training schemes, contingency planning and warning and alarm systems;

(c) Draw up an inventory of hazardous activities that could have transboundary effects, including those activities which are situated along transboundary rivers, and a list of hazardous substances;

(d) Involve national and international institutions in research and development into less hazardous processes aimed at limiting accident hazards and preventing and limiting the consequences of industrial accidents causing transboundary water pollution.

4. The Task Force on Monitoring and Assessment, established under the Water Convention, should incorporate, as appropriate, information needs arising from the Industrial Accident Convention into the ongoing pilot projects on monitoring and assessing transboundary rivers. The workshop further recommended that the Meeting of the Signatories should make the appropriate arrangements for joining activities under the pilot projects.

5. Through the secretariat, a small group of experts should be established to examine the potential for, and opportunities of, using experience gained by insurance companies in promoting industrial safety for consideration and decision by the Conference of the Parties to the Industrial Accident Convention at its first meeting.

6. UN/ECE countries, through the secretariat or appropriate regional coordinating centre, should share:

(a) Information on the results of bilateral cooperative arrangements relevant to either Convention;

(b) Experience gained in the application of safety and water protection technology (for example, with respect to equipment and research), with a view to achieving compatibility;

(c) Information on different models and methods used for risk assessment undertaken for purposes related to either Convention;

(d) Experience gained in applying licensing and permit systems related to water management and industrial installations.

7. Governments should arrange for the coordinated national implementation of both Conventions.

8. When negotiating new subregional agreements on transboundary waters, Governments should take into account the relevant provisions of the Water Convention and the Industrial Accident Convention.

10. The workshop took note of the activities carried out under the Community Action Programme in the field of Civil Protection, called for closer cooperation among authorities involved in water management, industrial safety and civil defence, and invited countries in transition to take advantage of the possibility of mobilizing experts foreseen under the Action Programme.