

**CONVENTION ON THE TRANSBOUNDARY
EFFECTS OF INDUSTRIAL ACCIDENTS**

**CONVENTION ON THE PROTECTION AND
USE OF TRANSBOUNDARY WATERCOURSES
AND INTERNATIONAL LAKES**

Joint ad hoc Expert Group on Water and Industrial Accidents

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**DRAFT UNECE SAFETY GUIDANCE AND GOOD PRACTICES FOR CROSS
BORDER CONTINGENCY PLANNING**

This document was prepared by Mr. Peter Kovacs (Hungary), Co-Chairmen of the Joint ad hoc Expert Group, at the request of the Group's eighth meeting.

Introduction

Taking into account the need to promote active international cooperation among the UNECE member countries before, during and after an extraordinary impact, to enhance appropriate policies and to reinforce and coordinate action at all appropriate levels for promoting the prevention of, preparedness for and response to extraordinary transboundary impacts on transboundary water regime shared by the countries.

The issue also received attention at international level. The World Summit on Sustainable Development (Plan of Implementation, Johannesburg, 2002), Aarhus Convention on access to information, public participation in decision –making and access to justice in environmental matters (1998), etc.....

In order to assist the national authorities and the operators in ensuring adequate safety level at transboundary water courses, the UNECE member countries decided to draw up safety guidelines and good practices for cross border contingency planning..

The Conference of the Parties to the Convention on the Transboundary Effects of Industrial Accidents and the Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes adopted at their respective meetings (Rome, 15–17 November 2006, and Bonn, 20–22 November 2006) a work plan for the Joint Expert Group on Water and Industrial Accidents, by which they mandated, among others, the Group to draw up safety guidelines and good practices for cross border contingency plans..

Taking into consideration, inter alia, the provisions and achievements of UNECE Convention on the Transboundary Effects of Industrial Accidents (Helsinki 1992), the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki 1992), the Code of Conduct on Accidental Pollution of Transboundary Inland Waters (UN 1990), the

Directive of the European Parliament and of the Council 2000/60/EC establishing a framework for community action in the field of water policy, and the Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances, the following guiding document was elaborated, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, which was modify by 2003/35/EK and the 97/11/EC, Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, etc.....

I. GENERAL PRINCIPLES FOR TRANSBOUNDARY CONTINGENCY PLANNING (TCP)

1. The UNECE countries shall apply the provisions of this guideline in order to prevent or limit hazards, and reduce and eliminate adverse consequences, including those from floods, ice hazards, droughts and accidents involving hazardous substances, with respect to accidents and natural disasters on the water, water regime and water eco-system in the transboundary river basin.
2. These provisions shall not apply to:
 - (a) Nuclear accidents or radiological emergencies;
 - (b) Accidents at military installations;
 - (c) Land-based transport accidents with the exception of accidents which could cause an extraordinary transboundary impacts on the water, water regime and water eco-system;
3. The Countries shall take appropriate legislative, regulatory, administrative and financial measures to implement the provisions of this guideline.
4. The Countries shall, by means of exchange of information, consultation and other cooperative measures, develop and implement policies and strategies for reducing the risks of extraordinary transboundary impact on water, water regime and water related eco-system and improve measures for prevention, preparedness and response, including restoration measures.
5. The Countries shall ensure that operators are obliged to take all measures necessary for the safe performance of hazardous activities and for the prevention of accidents, industrial accidents and natural disasters with transboundary effects.
6. The Governments should provide leadership and create minimum administrative frameworks to facilitate the development and maintenance of harmonized contingency planning
7.

II. RECOMMENDATIONS

1. These guidelines constitute a minimum set of requirements to ensure a basic level of cross border contingency planning. They highlight all the aspects to be considered to achieve acceptable level of safety through applying different policies, measures and methodologies.
2. These guidelines should be read also in the context of relevant national requirements and existing international guidelines, recommendations and standards concerning water pollution using internationally assessable information sources.
3. Below are recommendations to the UNECE member countries, competent authorities. The technical and organizational aspects, listed in the Annex, are an integral part of these guidelines and good practices.
4.

A. Recommendations to UNECE member countries

5. UNECE member countries should develop bi-and multilateral cooperation with upstream and downstream countries sharing the same river basin. They promote the establishment of bilateral river committees with the neighbouring countries, dealing with transboundary water pollution prevention and response.
6. UNECE member countries should identify competent authorities at the national, regional and local level that are given access to the necessary competences for the tasks foreseen in these recommendations. Each country shall designate the national authority which shall be responsible for official communication on its behalf. Each national authority shall nominate its Focal point.
7. UNECE member countries should initiate a national inventory of potentially polluting installations activities (See. Annex for potentially hazardous activities) which pose a potential risk to human health or the environment. The inventories should be a prerequisite for the implementation of recommendations and should be mutually exchanged.
8. Countries shall, at the initiative of any Country, enter into consultations on the identification of those hazardous activities and potential risks of extraordinary impact on the water, water regime and water eco-system that are, reasonably, capable of causing transboundary impact
9. UNECE member countries should initiate the harmonization of the contingency plans developed by the countries. Countries shall endeavor to make contingency plans compatible. Where appropriate, joint contingency plans shall be drawn up in order to facilitate the

implementation of adequate response measures. In particular, the countries concerned shall inform each other of their contingency plans through designated authority.

10. UNECE member countries should initiate should create a mechanism to promote elaboration of bilateral agreement on mutual cooperation in case of transboundary pollution events.

11. UNECE member countries should initiate the active cooperation between neighbouring countries' authorities, responsible organisations.

12. UNECE member countries should develop legislative provisions or guidelines concerning safety measures and safety standards, agree on water quality evaluation criteria, harmonize a water quality monitoring systems, develop mutually agreed water quality objectives based on water uses.

13. The countries shall take appropriate measures to establish and maintain adequate emergency preparedness to respond to accidents, industrial accidents and natural disaster. The countries shall ensure that preparedness shall include measures to mitigate transboundary impact. These measures may include, but are not limited to treatment; collection; clean-up; storage; removal and safe disposal of hazardous substances and contaminated material; and restoration.

14. In the event of an accident or natural disaster, or imminent threat thereof, which causes or is likely to cause transboundary impacts, the country of origin shall ensure that affected countries, without delay, notified at appropriate levels through the alarm and warning systems. Countries should, at regular intervals, test the efficacy of alarm and warning systems and ensure regular training of personnel involved in such operations.

15. The countries shall initiate and cooperate in the conduct of research into, and in the development of methods and technologies for the prevention of, preparedness for and response to accidents and natural disasters. They shall encourage and actively promote scientific and technological cooperation, including research into less hazardous processes aimed at limiting accident hazards and preventing and limiting the consequences of industrial accidents

B. Recommendations to competent authorities

16. Competent authorities shall set up general or specific safety objectives

17. Competent authorities should verify the TCP. Contingency plans shall be reviewed regularly at least once in five years, or when circumstances so require, taking into account the experience gained in dealing with actual emergencies.

18. Competent authorities should ensure that potentially hazardous activities/installations should develop internal emergency plan and provide necessary information and cooperate on preparing harmonized external plans.

19. Competent authorities shall develop off site emergency plans in association with community groups, local authorities and rescue services and apply them in case of transboundary accidents
20. Competent authorities should ensure that internal and external emergency plans are reviewed, and tested periodically and where necessary, revised and updated
21. Competent authorities should apply methodologies for risk assessment using a step by step approach, starting with a basic screening of sites, whereby resources are gradually directed towards sites with the highest risks. The identification of those hazardous activities which require special preventive measures, which may include a licensing or authorization system.
22. Based on the risks identified, competent authorities should make plans for risk reduction measures and/or monitoring (early warning) for the transboundary river basins.
23. Competent authorities should establish and maintain intervention sites for the mitigation of the effects of accidental water pollution
24. Competent authorities promoting the application of the most appropriate technology in order to prevent industrial accidents and protect human beings and the environment
25. Competent authorities promote appropriate education and training of all persons engaged in hazardous activities control.
26. The competent water authority should regularly monitor the status of the transboundary water course.

C: Recommendations to operators of potential water pollution installation/activities (hot spots)

27. All hot spots should have an operation and management plan (operating manual) that is available to all personnel, local inhabitants, government inspectors and other relevant stakeholders. All documents relating to planning, design and construction should be maintained in an accessible way, with records kept permanently for reference at the future time.
28. Operators should draw up and implement internal emergency plans and apply them inside whenever a tangible risk for major accidents to occur has been identified or an uncontrolled event occurs that could lead to a major accident or a major accident has occurred. Operators should review, test, revise and update the internal emergency plans at regular base according their national legislation.

29. Operators should cooperate with competent authorities and local communities in preparing the external emergency plans
30. Operators should establish and maintain intervention sites for the mitigation of the effects of accidental water pollution.
31. Operators should train their personnel, reinforce and revise personnel's knowledge on safety and in particular on how to identify potentially harmful events
32. Operators should implement environmental audits for their facilities and promote use of environmental management systems,
33. Operators should provide, in order to prevent industrial accidents, appropriate education and training of all persons engaged in hazardous activities on-site under both normal and abnormal conditions.
34.

Annex I

Definitions:

- a. "River Basin"
- b. "Water regime"
- c. "Transboundary Water Commission"
- d. "Pollution"
- e. "Hazardous substances"
- f. "Hazardous activities" listed in [Annex](#)
- g. "Risk"
- h. "Natural disaster"
- i. "Accident"
- j. "Industrial accident"
- k. "Operator"
- l. "Public"
- m. "Country of origin"
- n. "Affected Country"
- o. "Alarm Emergency Warning System (AEWS)"
- p.

Annex II.

Sample list of dangerous installations, constructions and activities

(based on relevant EU Directives and International Conventions (Aarhus, IPPC, Espoo, SEVESO, etc.))

1. Waste management

- Installations for the incineration, recovery, chemical treatment or landfill of hazardous waste;
- Installations for the incineration of municipal waste with a capacity exceeding 3 tons per hour;
- Installations for the disposal of non-hazardous waste with a capacity exceeding 50 tons per day;
- Landfills receiving more than 10 tons per day or with a total capacity exceeding 25 000 tons, excluding landfills of inert waste
- Installations for the disposal or recycling of animal carcasses and animal waste with a treatment capacity exceeding 10 tons per day

2. Waste water treatment

- Waste water treatment plants with 10 000 PE or more

3. Agriculture

- Installations for the intensive rearing of poultry or pigs with more than:
 - (a) 85 000 places for broiler or 60 000 places for hen

- (b) 3 000 places for production pigs (over 30 kg), or
- (c) 900 places for sows

4. Energy industry

- Mineral oil and gas refineries
- Installations for gasification and liquefaction
- Combustion installations with a rated thermal input exceeding 50 MW
- Surface storage of fossil fuels with 100 000 tone or more
- Hydroelectric power station with 20 MW or more capacity

5. Extractive industry

- Extraction of petroleum and natural gas for commercial purposes where the amount extracted exceeds 500 tons/day in the case of petroleum and 500 000 cubic metres/day in the case of gas.
- Opened quarry and coal-mine with 25 ha or more mining place, or Extraction of peat with 150 ha or more mining place
- Extraction of mineral resources with dredger
- Tailing ponds

6. Production and processing of metals

- Installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes
- Installations for the production of pig-iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2.5 tons per hour;;
- Hot-rolling mills with a capacity exceeding 20 tons of crude steel per hour
- Application of protective fused metal coats with an input exceeding 2 tons of crude steel per hour;
- Ferrous metal foundries with a production capacity exceeding 20 tons per day;
- For the smelting, including the alloying, of non-ferrous metals, including recovered products (refining, foundry casting, etc.), with a melting capacity exceeding 4 tons perday for lead and cadmium or 20 tons per day for all other metals
- Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process where the volume of the treatment vats exceeds 30 m³.
- Metal ore (including sulphide ore) roasting or sintering installations;

7. Mineral industry

- Installations for the extraction of asbestos and for the processing and transformation of asbestos and products containing asbestos: for asbestos-cement products, with an annual production of more than 20 000 tonnes of finished products, for friction material, with an annual production of more than 50 tonnes of finished products, and for other uses of asbestos, utilization of more than 200 tonnes per year.
- Installations for the production of cement clinker in rotary kilns with a production capacity exceeding 500 tons per day or lime in rotary kilns with a production capacity exceeding 50 tons per day or in other furnaces with a production capacity exceeding 50 tons per day;

- Installations for the manufacture of glass including glass fibre with a melting capacity exceeding 20 tons per day;;
- Installations for melting mineral substances including the production of mineral fibres with a melting capacity exceeding 20 tons per day;
- Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain, with a production capacity exceeding 75 tons per day, and/or with a kiln capacity exceeding 4 m³ and with a setting density per kiln exceeding 300 kg/m³.

8. Chemical industry

- Chemical installations for the production of basic organic chemicals, such as:
 - Simple hydrocarbons (linear or cyclic, saturated or unsaturated, aliphatic or aromatic);
 - Oxygen-containing hydrocarbons such as alcohols, aldehydes, ketones, carboxylic acids, esters, acetates, ethers, peroxides, epoxy resins;
 - Sulphurous hydrocarbons
 - Nitrogenous hydrocarbons such as amines, amides, nitrous compounds, nitro compounds or nitrate compounds, nitrites, cyanates, isocyanates;
 - Phosphorus-containing hydrocarbons
 - Halogenic hydrocarbons;
 - Organometallic compounds
 - Basic plastic materials (polymers, synthetic fibres and cellulose-based fibres);
 - Synthetic rubbers;
 - Dyes and pigments
 - Surface-active agents and surfactants
- Chemical installations for the production of basic inorganic chemicals, such as;
 - Gases, such as ammonia, chlorine or hydrogen chloride, fluorine or hydrogen fluoride, carbon oxides, sulphur compounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride;;
 - Acids, such as chromic acid, hydrofluoric acid, phosphoric acid, nitric acid, hydrochloric acid, sulphuric acid, oleum, sulphurous acids
 - Bases, such as ammonium hydroxide, potassium hydroxide, sodium hydroxide;
 - Salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate
 - Non-metals, metal oxides or other inorganic compounds such as calcium carbide, silicon, silicon carbide;
- Chemical installations for the production of phosphorous-, nitrogen- or potassium-based fertilizers (simple or compound fertilizers) with 20 000 tone/year/product or more;
- Chemical installations for the production of basic plant health products and of biocides;
- Installations using a chemical or biological process for the production of basic pharmaceutical products;
- Chemical installations for the production of explosives
- Treatment of intermediate products and production of chemicals

- Installations for the storage of petroleum, petrochemical, or chemical products with a capacity of 200 000 tons or more
- Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating, with a consumption capacity of more than 150 kg per hour or more than 200 tonnes per year
- Installations for the production of carbon (hard-burnt coal) or electrographite by means of incineration or graphitization
- Chemical installations in which chemical or biological processing is used for the production of protein feed additives, ferments and other protein substances.

9. Food industry

- Vegetable raw materials with a finished product production capacity greater than 300 tons per day
- Treatment and processing of milk, the quantity of milk received being greater than 200 tons per day (average value on an annual basis);
- Slaughterhouses with a carcass production capacity greater than 50 tons per day
- Animal raw materials (other than milk) with a finished product production capacity greater than 75 tons per day;

10. Textile, leather, wood and paper industries

- Industrial plants for the production of:
 - (a) pulp from timber or other fibrous materials
 - (b) paper and board with a production capacity exceeding 20 tonnes per day
- Plants for the pretreatment (operations such as washing, bleaching, mercerization) or dyeing of fibres or textiles where the treatment capacity exceeds 10 tons per day;
- Plants for the tanning of hides and skins where the treatment capacity exceeds 12 tons of finished products per day;

11. Infrastructure projects

- Inland waterways and ports for waterway traffic which permit the passage of vessels of over 1350 tons
- Trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) which can take vessels of over 1350 tons.
- Groundwater abstraction or artificial groundwater recharge schemes where the annual volume of water abstracted or recharged is equivalent to or exceeds 10 million cubic metres
- Works for the transfer of water resources between river basins where this transfer aims at preventing possible shortages of water and where the amount of water transferred exceeds 100 million cubic metres/year;
- In all other cases, works for the transfer of water resources between river basins where the multi annual average flow of the basin of abstraction exceeds 2 000 million cubic metres/year and where the amount of water transferred exceeds 5% of this flow. In both cases transfers of piped drinking water are excluded.

- Dams and other installations designed for the holding back or permanent storage of water, where a new or additional amount of water held back or stored exceeds 10 million cubic metres.
- Pipelines for the transport of gas, oil or chemicals with a diameter of more than 800 mm and a length of more than 40 km.

Potential dangerous activities would counted as dangerous if the following perilous substances are more than the given limit (on the basis of the SEVESO II Directive (96/82/EC))

Dangerous substance	Limit (tonne)
NH ₄ NO ₃	2500
NH ₄ NO ₃	5000
arsenic-pentoxid, arsenic (V) acid and/or salts	2
arsenic-trioxid, arsenic (III) acid and/or salts	0,1
Br	100
Cl	25
Compound of Ni (nickel-monoxid, nickel-dioxid, nickel-szulfid, trinickel-diszulfid, dinickel-trioxid)	1
Ethylen-imin	20
F	20
Formaldehyd (cc ≥ 90%)	50
H	50
HCl (lq)	250
lead-alkylates	50
highly inflammable liquid gas (contain liquid hydrocarbon gases) and natural gas	200
Acethylen	50
Ethylen-oxid	50
Prophylen-oxid	50
Methanol	5000
4,4-Methylen-bisz (2-chlorine-anilin) and/or salts	0,01
Methyl-izocianate	0,15
Toluol-diizocianate	100
Karbonil-dichloride	0,75
arsenic-trihidrid (arzin)	1
phosphorus-trihidrid (phosphin)	1
Sulphur-dichloride	1
Sulphur-trioxid	75
Polichloride-dibenzo-furans és polychloride-dibenzo-dioxins (TCDD)	0,001
4-Amino-biphenil and/or salts, benzidin and/or salts, bisz (chloridemethyl)-ether, chloridemethyl-methyl-ether, Dimethyl-carbamoil-chloride, dimethyl-nitrozamin, hexamethyl-phoszphor-triamid, 2-naftyl-amin and/or salts, and 1,3-propan-sulton, 4-nitro-diphenyl	0,001
Petrol	50000

**SAMPLE LIST OF PROPOSED CONTENT OF HARMONIZED TRANSBOUNDARY
ACCIDENTAL POLLUTION PREVENTION AND RESPONSE PLAN**

Objective and scope of the pollution prevention and response plan

Definitions

I. General characteristics of the watershed

- Geography and morphology
- Geology
- Protected natural areas
- Population and economical activities in the watershed
- Flood control
- Pumping stations and flow control
-

II. Characteristic of surface waters

- Hydrogeology
- Quality of groundwater
- Vulnerability classification of groundwater

III. Characteristic of surface waters

- Rivers, lakes, reservoirs
- Quality of surface water
- Protection of surface water

IV. Use of water resources in the watershed

- Use of surface water resources
- Use of groundwater
- Industry
- Agriculture
- Other
-

V. Potential pollution sources

- Criteria and methods used for the identification and prioritisation of potential pollution sources
- Inventory of potential industrial pollution sources

- List and characteristics of plants having pollution prevention plans and other potential industrial pollution sources (plants having environmental permits etc...)
- List of substances potentially involved
- Description of possible potential accidents

V. Historical experiences of earlier accidental pollution

- List of accidents and lessons learnt

VI. Response to accidental pollution

- Legal requirements applicable to potential polluters
- Enforcement and control

General tasks in response to accidental pollution

- Identification of the accident
- Alarm, warning and reporting
- Assessment of impacts
- Identifying the source of pollution
- Communication
- Monitoring of water quality
- Organisation and implementation of response and mitigation actions
- Investigations and sanctions

Organization for response and mitigation

- Response organization
- List of available staff for accidental pollution response
- Levels of alarm and associated warning procedures
 - Procedure, responsibilities
 - Alarm thresholds
 - Communication forms
- Communication and cooperation
 - Include communication schemes with key telephone numbers
 - Communication procedures and standard forms for example for warning, information request, alarm over etc...
- Cooperation with other experts
 - Include for example the list of experts or expert organisations in different fields, with contact information
- Available response materials and equipments
 - Response materials and equipments
 - List, with indication of the location and map of own material

List of additional material possibly available from third parties (eg other response organisations or industry) and indication of contact persons

Other infrastructure for mitigation and response

Mitigation and response procedures for different pollution scenarios

Safety and protection of the response staff

Post-response actions

Investigation of the causes and effects.

Liability

Lessons learnt

Remediation methods

Improvement of prevention, updating and improvement of the pollution prevention and response plan
