

# Assessment of the Development of Legal Regulation on the Protection of Major Accidents

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*Hungarian regulations on industrial safety are based on the legal and institutional system for the protection of major industrial accidents involving dangerous substances. The aim of this article to overview the measures related to the development of the legislative area for industrial safety and the supervision of dangerous establishments, and also to draw conclusions of this progress.*

**Keywords:** industrial safety, dangerous establishment, disaster management, legal harmonization, institution building

## Establishment of the regulation of industrial safety in Hungary

Development of regulation of industrial safety in the disaster management system has a 15 years history in Hungary. Regulation of industrial safety is mainly based on the legal, institutional and task system for protection against major accidents involving dangerous substances. Namely, these regulations form one of the most important branches of industrial safety management. The protection system for defence against major industrial accidents involving dangerous substances was established by enacting the first act on disaster management in 1999. After establishing the supervision of the dangerous industrial establishments, disaster management began performing its tasks concerning control of road transport of dangerous goods in 2001. Preparations started in 2008, to also perform the disaster management tasks in relation to the vital system elements, and the related specific legislation and institute development activities turned to full strength after codification of the laws in 2012. The fourth and not less important element of control of industrial safety is performing the disaster management tasks for nuclear accident prevention, which became part of the industrial safety activities of disaster management after examination of the experiences of dispensation of justice of the second act on disaster management.<sup>3</sup>

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- 3 KÁTAI-URBÁN Lajos: *Establishment and Operation of the System for Industrial Safety within the Hungarian Disaster Management*, *Ecoterra: Journal of Environmental Research and Protection*, 11(2014)/ 2, 27–45.

Based on the law and profession history analyses<sup>4</sup>, the uniform industrial safety laws enacted between 2010–2012, are mainly built on the legal, institute and tool system for defence against major accidents involving dangerous substances, whose basic purpose is control and supervision of the establishments that handle dangerous substances (hereinafter dangerous establishment). The purpose of the regulations is a higher level protection of human life and health, and the environment of the dangerous establishment.

Establishment of the adjudication area of the industrial safety of the dangerous establishments was determined by:

- For sake of connection to the European Union, the 96/82/EC Directive of the Council on control of the major accidents involving dangerous substances (Seveso II) (hereinafter the directive) and the
- Convention of the UN European Economic Commission (Helsinki) on the transboundary effects of industrial accidents (hereinafter: convention) their adoption in the national legislation, and the professional and scientific activities concerning the application of the regulations.

Establishment of the national regulations was initiated by the presence of the below listed scientific and professional problems:

1. Amendment of the Seveso II directive in 2003, and the primary experiences on dispensation of justice about the dangerous establishments required examination of several open professional and technical questions, and finding solutions based on scientific activities. Additionally, the new regulations required development of the institute system and the authority licensing and control system. Performing the inevitable research activities is a separate professional part to ensure the personnel and technical requirements at a high level, which are necessary for authority dispensation of justice.

2. The other professional problem was extension of the scope of the regulations concerning the dangerous establishments and the development of the tools of dispensation of justice, which had to be performed mainly based on the conclusions of the examinations concerning the reasons and circumstances of the industrial accidents that occurred in 2004–2005. The most important professional reason was the fact that several industrial accidents resulting in significant public reactions did not occur in dangerous establishments that belong under Chapter IV of the Act on catastrophes but in dangerous activities that were not under the scope of disaster management control.

The necessity emerged for the control of several dangerous activities that do not belong under the scope of the directive, where the dangerous substances were not present in a quantity that reaches the EU control level. Solutions of the problem included reduction of the control tier quantities and their determination; establishment of the control and penalty activities over dangerous goods transportation activities, and drawing the establishments of dangerous goods transportation, the dangerous

4 KÁTAI-URBÁN Lajos: *Veszélyes üzemek felügyeletének fejlődése a kezdetektől napjainkig – II. rész 2006–2014 (Development of Inspection of Dangerous Establishments from the beginning to nowadays – II. part)*, Bólyai Szemle, 23(2014)/3, 200–215.

substances handling plant, underground gas tanks etc. under disaster management authority control and supervision.<sup>5</sup>

3. The main tool for solution of the above two professional scientific problems was creation of the uniform system of industrial safety laws, institutes and means in 2012.

An industrial safety authority with extended scope was established, whose scope of tasks and competence was implementation of regulations concerning dangerous establishments within the extended scope. In addition to road transportation of dangerous goods, the authority control and penalty special tasks also appeared concerning waterway and railway transports.

Operability of the uniform industrial safety system was influenced among other things by the necessity of ensuring the inevitable personnel requirements for effective operation of the authority licensing and supervisory system. Quality of performing of the task mainly depends on the education and training level of the personnel and on ensuring the means for the procedures and methods.<sup>6</sup>

The above mentioned professional tasks (challenges) required intensive project-type scientific and research activities from the industrial safety authorities. I will describe the development process of the regulations in the implementation system of the disaster management tasks.

### **General system of implementation of the disaster management tasks**

The system of implementation of the disaster management tasks is basically divided into three periods: period of prevention and preparation, period of defence (emergency management) and the period of restoration, elimination of the consequences. The following table summarizes the authority tasks in the various periods of defence against major accidents.

5 KÁTAI-URBÁN Lajos: *Veszélyes üzemekkel kapcsolatos iparbiztonsági jog-, intézmény és eszközrendszer fejlesztése Magyarországon (Development of Legal, institution and Implementation System related to the Dangerous Establishments)*, Budapest, Nemzeti Közszolgálati Egyetem, 2015, 89.

6 BOGNÁR Balázs, VASS Gyula, KOZMA Sándor: *A BM OKF Országos Iparbiztonsági Főfelügyelőség szakterületeinek bemutatása (Introduction of the National Chief Inspectorate for Industrial Safety MI NDGDM)*, Új Magyar Közigazgatás, 2(2012)/6, 19–27.

Table 1. System of disaster management tasks concerning defence against major accidents<sup>7</sup>

Period	Tasks
<b>Period of prevention and preparation for defence</b>	<ul style="list-style-type: none"> <li>– Approximation and codification of laws;</li> <li>– institute development activities;</li> <li>– implementation of the regulations: operation of the authority licensing and supervisory control system, performing the related disaster management tasks;</li> <li>– collection and coding of the implementation experiences;</li> <li>– performing the related civil protection tasks: establishment and preparations of the civil protection organizations; training and practicing of the participants of the protection; preparation of the population.</li> </ul>
<b>The period of defence and reduction of the consequences (emergency management)</b>	<ul style="list-style-type: none"> <li>– Qualification of the occurred incident;</li> <li>– alarming and information of the public;</li> <li>– alarming the organizations participating in the defence;</li> <li>– introduction of immediate measures in relation to defence;</li> <li>– operation of operative staff and centers of emergency management;</li> <li>– participation in the work of the defence committees;</li> <li>– implementation of the information obligations due to international treaties; origination of aid activities as necessary.</li> </ul>
<b>Period of restoration and elimination of the consequences</b>	<ul style="list-style-type: none"> <li>– Ensuring basic life support of the population;</li> <li>– temporary restoration of the damaged public utilities;</li> <li>– cooperation in the mitigation tasks;</li> <li>– participation in surveying of the damages;</li> <li>– participation in distribution of the aids.</li> </ul>

The development of the legal, institutional and tool system of the legislation is basically in the period of prevention and preparations. I will examine and digest the tasks to be performed in this period.

The process of constitution, *implementation* and development of the regulations

The main elements of constitution, implementation and development procedure of the legislation concerning defence against major accidents are the followings:

1. participation in preparation of the impact studies, concepts and plans that are necessary for elaboration of the legislation (approximation of laws and preparation of codification);

<sup>7</sup> KÁTAI-URBÁN Lajos: *Veszélyes...*, op. cit.

2. participation in establishment of the authority licensing and supervisory system of institutes (development of institutes) that are necessary for application of the accepted legislation, including the participation in ensuring the system of personnel and technical means that are necessary for the application of the legislations and for implementation of the operator and authority tasks (establishment of the system of implementation means);
3. implementation of the regulations which mainly consist of operation of the authority licensing and supervisory control institute system and performing the related disaster management tasks (implementation of the legislation);
4. participation in collecting and coding of the experiences of dispensation of justice and implementation of the tasks; preparation of plans and concepts based on them for amendment of the legal, institute and tool system of the legislation (collection and coding of the implementation experiences).

The development activities involving legislation require performance of cyclic recurring tasks and a project aspect from the executing task. Solving the legal, professional and technical tasks also requires continuous research work. During this work, the disaster management (industrial safety) authority was always significantly supported by scientific and expert work. The most important source of these activities is the Zrínyi Miklós University of National Defence, and now the Military Technical Doctorate School of the National University of Public Service, where 14 doctorate theses were written up to now, directly related to the subject.<sup>8</sup>

*a) Approximation of laws and preparatory works of codification.*

The activity of approximation of laws means most of the cases adaptation (insertion) of the environment protection legislative materials of the European Union into the Hungarian legislation. Such instances appeared, for example, in the Seveso II. Directive in the first act on disaster management and its implementing regulations; 2006 year approximation of the directive amended in 2003, and introduction of the Seveso III Directive in Hungary between 2014 and 2015.

The approximation of laws is completed by the modification requirements concluded from the experiences of dispensation of justice or the legislation demands following occurrence of major industrial catastrophes or major industrial accidents. A typical example of this is the preparation of the second act on disaster management between 2010 and 2011, this eventually established the scopes of tasks and competences as used up to date.

A main element of the legislation preparatory activities is elaboration of impact studies that evaluate professional, society and social impacts based on scientific principles. The most important task here is determination of the objective scope of the regulations (range of implementation); determination of the institute development tasks and expenses that are necessary to perform the authority and operator tasks; creation of a schedule and concept of implementation, and estimation of the society and

<sup>8</sup> BLESZITY János, KÁTAI-URBÁN Lajos, GROSZ Zoltán: *Disaster Management in Higher Education in Hungary*, *Administrativa un Krimināla Justīcija – Latvijas Policijas Akadēmijas Teoretiski Praktiski Zurnāls* 67(2014)/2, 66–70.

social effects involving the population. Product of the legislation preparatory activities is submission of a draft statute and the statute, which shall be coordinated with the involved state, local government and operator organizations.

*b) Establishment of the system of implementation tools (development of institutes).*

The following tasks of development of institutes belong to the establishment of the authority licensing and supervisor control system which is necessary for application of the accepted legal regulations.

- Creation or development of the personnel and technical assets that are necessary for implementation of the authority tasks, with the following elements:
  - establishment of the system of implementation institutes; preparation of the organizational operation regulations or procedures, including them in the internal regulations;
  - establishment of the authority licensing and supervisory control system whose main elements are the authority rules of procedure, the implementation flow charts and sample documents represented in the internal system of regulations of BM OKF (National Directorate General for Disaster Management of the Ministry of Interior);
  - elaboration of the methodology guides and aids establishing the task-implementation of the authority, which includes the licensing and supervision control aspect system;
  - creation or development of the technical means (such as consequence and risk analysis software) and databases that are necessary for operation of the implementation system of tools of the authority;
  - selection, education and further education of authority supervisors to perform the authority licensing and supervisory control activities, especially to correctly apply the system of tools of the authority;
- the system of personnel and technical means for performing the operator tasks according to the legal regulations:
  - elaboration of a manual (guide) on dispensation of justice and technical methodology to explain the compliance to the legal regulations (legal institutes) and the technical requirements in order to help performance of the operator tasks;
  - continuous publication of individual questions of operators on dispensation of justice, and the replies to them;
  - education and further education of operator staff about performing their tasks;
  - continuous consultation of the authority with the labor organizations at the operators, and the with the operators;
  - implementation of joint pilot (test) projects about dispensation of justice.

*c) Implementation of the legal regulations:*

ca) Authority activities.

The most important task on the *authority side* in relation to the *implementation of the regulations* is the operation of the authority licensing and supervision control system of institutes, which include the following:

- *authority licensing* tasks, whose main elements are:
  - judgment of the received establishment identification reports; requiring compilation of safety documents;
  - judgment of the received safety report, analysis and major emergency management plan, internal emergency plan, including a site inspection in order to examine truthfulness of the safety documents;
  - requiring introduction of preventive and consequence mitigating measures by the operator;
  - assignment of danger zones in the authority resolution.

Based on the stipulations of chapter IV of the Act on disaster management, industrial safety authority licensing tasks occur (1) in the construction licensing procedures of the newly installed dangerous establishments or installations, and in the procedures for performance of dangerous activities, (2) in procedures for repeated performance of dangerous activities, and (3) in case of a major change of an already operating dangerous establishment. The authority of second instance is the BM OKE, while the authorities of first instance are the regional and capital authorities of disaster management.

- The *authority inspection* of safety documents with the following main elements:
  - regular inspection every 5 years in case of safety reports and analyses, and every 3 years in case of internal emergency plans;
  - occasional inspections due to major changes, major accident or incident occurring in the establishment, technical development or development of modern danger identification and impact analysis methods.

The regular and occasional inspection activities are accompanied by site inspections, and based on this (according to the decision of the authority) the safety documents or the emergency plans are revised in frames of a licensing procedure.

- The *authority control* of dangerous establishments with the following main elements:
  - planned authority control, whose types are:
    - periodical authority control, which consists of checking the items specified in the safety documents and in the authority resolutions;
    - authority control of the internal emergency plan practices;
    - (supervisory) authority control performed by involvement of a partner authority;
  - non-planned (occasional) authority controls in frames of a site inspection, including:
    - subsequent control based on periodical authority controls;
    - controls based on operator reports (e.g. shutdown of operation, or temporary pause of operation);
    - examination of circumstances of incidents or accidents in frames of a site inspection (emergency site inspection).

- Sanctioning activities, that consist of the followings:
  - disaster management penalty activities in case of irregularities and omissions specified by a separate regulatory statute;
  - procedure penalties in frames of an administrative procedure;
  - cancellation of a license and prohibition of performing a dangerous activity;
  - limitation of a dangerous activity by reduction below the lower tier, or its suspension;
  - application safety measures (protection or removal of dangerous substances, etc.).

The followings are the main tasks in relation to performance of the *disaster management tasks*:

- Preparation, review and verification of a settlement external emergency plan;
- making publicity available (in case of a construction procedure and significant changes);
- organization and performance of external emergency plan practices (at the assigned establishments);
- control and evaluation of internal emergency plan practices;
- follow up of developments in the danger zone;
- implementation of the related individual disaster management tasks, such as establishment of disaster management monitoring, alarm and information system.

The authority tasks are performed at a regional level of BM OKF (20 area level disaster management directorates) while the disaster management tasks of the implementation are performed at local level (65 local level disaster management offices) in terms of implementation of the legal regulations. And the Dangerous Establishments Department operating in frames of BM OKF performs professional management of the regional organizations.

cb) Operator activities.

The operator tasks of implementation of the regulations are different, depending on the state of the establishment (upper and lower tier dangerous establishment, an establishment under the tier) as follows:

- identification of and notification about the dangerous activities;
- compilation of safety documents:
  - safety report (upper tier dangerous establishment);
  - safety report (lower tier dangerous establishment);
  - major emergency management plant (an establishment under the tier);
- operation of safety management system (upper tier dangerous establishment);
- operation of safety management system (lower tier dangerous establishment and an establishment under the tier);
- internal safety planning and practicing;
- regular and occasional inspection;
- accident (incident) reports and investigations.



d) Collection and coding of the implementation experiences.

The experiences of the dispensation of justice and implementation of tasks are collected in the annual reports, individual reports, investigation results of the accidents and incidents, and submissions concerning modifications of the legal, institute and tool system of the legal regulations may be compiled based on them. The submission contains the plans and concepts, and suggested text involving the specific legislation or internal regulations of BM OKF. The legislation, institute development and implementation activities begin all over again based on the submissions.

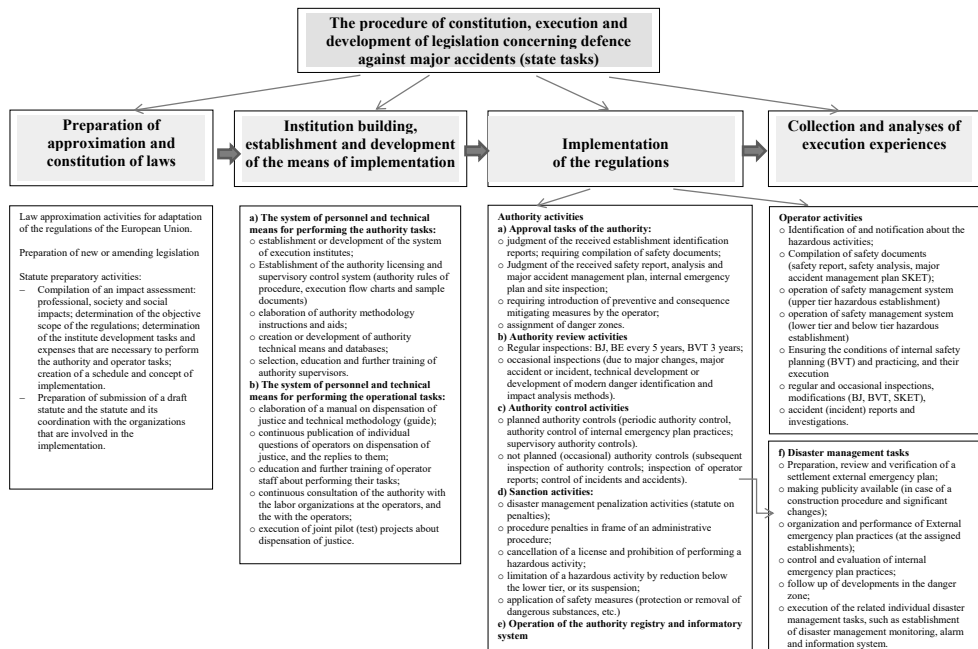


Figure 1. The procedure of constitution, execution and development of laws concerning defence against major accidents<sup>9</sup>

## Summary of the implementation experiences and drawing conclusions

In order to prevent the major industrial accidents involving dangerous substances, to reduce the harmful consequences to the environment and health, and to protect people at a high level, the countries of the European Community enacted the Seveso II Directive of the committee on February 3, 1997.<sup>10</sup>

9 KÁTAI-URBÁN Lajos: *Veszélyes...*, op. cit.

10 KÁTAI-URBÁN Lajos: *Handbook for the Implementation of the Basic Tasks of the Hungarian Regulation on "Industrial Safety"*, Nemzeti Közszolgálati Egyetem, Budapest, 2014.

The Accident prevention and Inspection Department of the National Directorate General for Disaster Management (OKF) performed the licensing and authority control activities of the dangerous industrial establishments based on this directive and the approximated national laws. A new branch was established in 2010 as a significant change: Industrial Safety.

The extension of the professional, and authority and supervisory activities of the Industrial safety department happened in 2012, at the date of the independent industrial safety branch. The specialists of the Industrial safety department created the legal regulations and system of institutes that reach over the Seveso II Directive. The Industrial safety department coordinates the activities of four independent branches by managing dangerous establishments, dangerous transports, safety and inspection of vital systems and installations, and management of nuclear accidents.<sup>11</sup>

An independent and uniform industrial safety authority was established in Hungary. The old member countries of the EU were not operating a Seveso disaster management authority, which has quickly proven that handling the prevention and accident management activities by the same organization results in efficient and high level authority work. Using only one authority for performance of the Seveso tasks was also not typical.

The results of the Hungarian authority have proven to the skeptical parties clearly that there is no alternative to disaster management in the field of Seveso.

The Hungarian industrial safety authority ensures professional supervision of the dangerous establishments and activities by creation of the most up-to-date risk-based quantitative risk analysis aspect, by employment of highly trained authority specialists, and by systematic performance of the authority and supervision tasks.

Looking back to the history, BM OKF has introduced the Seveso II Directive in Hungarian legislation back in 2001, and ensured the personnel and assets for performance of the tasks in relation to the directive during 2001–2003. The authority licensing and supervisory system has been operating since 2002. The stipulations of the Directive were executed until the date of joining the EU in May, 2004. An external emergency planning, public information, publicity and a community development system was in operation, among others. The professional and international cooperation tasks of the Helsinki UN ECE Industrial Accident Convention were performed by BM OKF as a competent authority. The coordination with the representation organizations of the operators was continuous at an expert level. The operation of the Seveso defence working committee and establishment of the Molari system was also important. The authority methodology publications, the conferences, professional days and further education all supported ensuring the quality of the professional work. Evaluation of the major accident and incidents, and concluding the experiences determined the development of legal and institute system. The authority represented the interests of the country at

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11 KÁTAI-URBÁN Lajos, VASS Gyula: *Kézikönyv a veszélyes üzemek biztonságsszervezésével kapcsolatos alapfeladatok teljesítéséhez (Handbook for Implementation of Basic Tasks related to the Safety Management of Dangerous Establishments)*, Nemzeti Közszolgálati Egyetem, Budapest, 2014.

the meetings of EU and international organizations. Organization of several EU and international events in Hungary, and involvement of Hungarian specialists in the international cooperation has generated a significant level of acceptance of Hungary.<sup>12</sup>

The conditions of safe operation are guaranteed in case of 704 dangerous establishments in Hungary, supervised by the disaster management authorities.

Thanks to the legal regulations and institute development activities between 2010 and 2012, a more dynamic and strong industrial safety authority is operating in the disaster management organization since January 1, 2012. There were significant changes in the development of competences and tasks and scopes. The base of establishment of the new system of industrial safety task and tools was the dangerous establishment and transportation supervision activity operating at a high professional standard also acknowledged by the EU in 2010.

BM OKF has an industrial safety consulting committee and a higher level education institute since 2012, who perform establishment and support of the professional and scientific activities.

In summary we can state that the supervision of the dangerous establishments allows high level protection of life and health, the environment and other assets in Hungary according to the requirements of the EU, the international organizations and the Hungarian Government, and it also promotes public safety in Hungary according to the Fundamental law.

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12 KÁTAI-URBÁN Lajos, VASS Gyula; LÉVAI Zoltán; HOFFMANN Imre: *Iparbiztonság Magyarországon (Industrial Safety in Hungary)*, Védelem Online: Tűz- és Katasztrófavédelmi Szakkönyvtár 22(2015)/1, 1–12.

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## ABSZTRAKT

### **A súlyos balesetek elleni védekezésről szóló jogi szabályozás fejlesztési folyamatának értékelése**

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*Az iparbiztonsági szabályozás jelentős mértékben épül a veszélyes anyagokkal kapcsolatos súlyos balesetek elleni védekezésről szóló jog- és intézményrendszerre. Jelen cikk célja rövid áttekintést adni a jelenlegi iparbiztonsági szabályozási rendszer kialakításának előzményeiről, így a veszélyes üzemek felügyeletével kapcsolatos jogi szabályozás változásairól, az intézményrendszer folyamatos erősödéséről, valamint a végrehajtási intézkedések bevezetésének tapasztalatairól.*

**Kulcsszavak:** iparbiztonság, veszélyes üzem, katasztrófavédelem, jogharmonizáció, intézményfejlesztés.