

MAJOR HAZARDS - THE DEVELOPMENT OF EUROPEAN
AND UK LEGISLATION OVER 20 YEARS

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The development of major hazards legislation is traced, first domestically in the UK and more recently in the European Community. The interaction between EC and other international bodies (OECD, ILO, UNECE) is explored, and the proposal for a revised EC Directive is described in detail.

Keywords: Major hazards, CIMAH, legislation, OECD, ILO, UNECE

INTRODUCTION

For many years the UK was free from major industrial accidents but during the 1960s Her Majesty's Factory Inspectorate was giving serious thought to the potential. This was partly because of the way British industry was developing and partly because Inspectors were able to study incidents happening abroad. The concerns were publicised in the Chief Inspector's Annual Reports of 1967⁽¹⁾ and 1971⁽²⁾.

In 1974 the Health and Safety Commission (HSC) and Executive (HSE) were formed, just before these concerns were brought sharply into focus by the disastrous explosion at Flixborough. A badly designed modification had been made to the process plant. The modification failed releasing several tonnes of cyclohexane at high pressure and temperature. The resultant vapour cloud found an ignition source and exploded. 28 people were killed on-site and 36 people were injured off-site. The installation was devastated and there was extensive damage to property off-site. In total 1,821 houses, shops and factories were damaged.

As a result of the Flixborough disaster, the HSE set up a committee of experts, the Advisory Committee on Major Hazards (ACMH), to study the control of major industrial hazards and to advise on the best policy to adopt. The ACMH produced three

reports, in 1976⁽³⁾ 1979⁽⁴⁾ and 1984⁽⁵⁾. In its first report⁽³⁾ ACMH proposed a 3 part strategy for managing major hazards consisting of identification, prevention/control and mitigation.

Identification of installations presenting, or liable to present, a major hazard involved both recognition of the fact by the operator concerned and notification of it to the statutory authorities. ACMH defined major hazards by reference to a list of named chemical substances in quantities above certain thresholds which were considered to have the potential to cause serious off-site consequences in the event of a major accident.

Prevention/control involved the operator assessing the process to determine the risks and consequences of accidents, and using the information to secure that appropriate precautions were taken to ensure safe operation.

Mitigation included the separation of vulnerable populations from hazardous installations through land use planning controls, on-site and off-site emergency planning to provide for an effective response to major accidents, mutual aid and warning the public about the hazards and the action to take in an emergency.

The first stage of the legislative programme to implement the 3-pronged strategy was the introduction of the Notification of Installations Handling Hazardous Substances Regulations 1982 (NIHHS)⁽⁶⁾. These required notification to the HSE of any site at which any dangerous substance listed in the regulations was present in quantities above certain thresholds. The purpose was to secure the identification of sites having major hazard potential.

The second stage was to have been Hazard Survey Regulations requiring any occupier handling at least 10 times the threshold quantity of a NIHHS substance to carry out and submit to the HSE a detailed survey of the hazards associated with the operations and the precautions being taken. This would have been the first part of the prevention/control strategy.

However, the UK's plans to introduce regulations to implement the policy were changed when the Commission of the European Communities (CEC) signalled its intention to introduce a Directive for the control of industrial hazards following a series of major accidents in the Community. The UK strategy ever since has been to play a leading role in CEC negotiations with the aim of securing Directives which correspond as closely as possible to UK needs and ideas. The UK has had a major influence on the CEC's thinking and the strategy of identification, control and mitigation remains the basis for UK and European policy on major industrial hazards.

THE DEVELOPMENT OF EUROPEAN POLICY

The problem of major hazards was becoming generally recognised in Europe due to a number of incidents. In 1966 in Feyzin, France, 17 people were killed and 80 injured when an LPG sphere bleved. In 1975, 14 people were killed in Beek, Holland when a release of propylene resulted in a large fire and explosion. Then, in 1976 in Seveso, Italy a major environmental disaster resulted from the release of highly toxic substances including TCDD-dioxin from a runaway reaction in a pesticide manufacturing process. That incident caused the contamination of almost 2000 hectares of land and the deaths of more than 70,000 animals.

THE SEVESO DIRECTIVE

The outcome of the CEC negotiations was Directive 82/501/EEC⁽⁷⁾ the so-called "Seveso" Directive. The Directive does not apply to all sites which present an off-site hazard. When the Directive was negotiated a conscious decision was taken to limit its scope in order not to overstretch scarce resources. This was achieved by applying quantity thresholds of dangerous substances to limit the application of certain articles of the Directive. It should be noted therefore that major accidents with off-site consequences could occur at sites which fall outside the scope of the Directive.

The Directive was implemented in the UK by the Control of Industrial Major Accident Hazards Regulations 1984 (CIMAH)⁽⁸⁾. Those regulations differed significantly from most other legislation enforced by the HSE in that a substantial part was concerned with off-site hazards and risks, including ones to the environment.

The part of the regulations which initially caused most concern and difficulty was the requirement for the manufacturer to prepare a written safety report. The report was required to contain details of the dangerous substances, the installation, the management system, potential major accidents and the measures taken to prevent, control and minimise the effects of major accidents.

Preparing a report was resource intensive both for the manufacturer and for HSE which had to evaluate it. Discussions with industry at the time centred on the scope of the reports, the amount of detail which should be included, the extent to which consequence assessments were required, whether quantified risk assessment was necessary and the extent to which manufacturers would be required retrospectively to fit safety devices to existing plant as a result of risks identified in the report.

The regulations acknowledged that even when all reasonably practicable precautions had been taken there would remain a small residual risk of an accident which could have devastating off-

site consequences. To mitigate the effects of major accidents there was a requirement to plan for emergencies on and off-site and prepare the responses to them. Manufacturers were required to prepare on-site emergency plans and to provide technical information to county emergency planning authorities who were responsible for preparing off-site emergency plans. Manufacturers were also required to ensure that people who might be in an area where they could be affected should be informed of the nature of the hazards and the action they should take for their own safety in an emergency.

The Seveso Directive has been amended twice, in 1987 and 1988. The first amendment⁽⁹⁾ involved the revision of some substance threshold quantities following the 1984 Bhopal disaster. The second amendment⁽¹⁰⁾ involved greatly increased application to storage premises after the 1986 Sandoz warehouse fire in Switzerland illustrated the dangers of pollution from stored chemicals. That incident also resulted in an increased awareness of the possibility of damage to the environment and to the transboundary effects of major accidents.

The interest of the CEC in the major hazards area has been maintained. A committee of competent authorities meets 3 or 4 times a year in Brussels to review experiences in member states. Discussion has centred on the way in which member states have implemented (or have failed to implement) the Directives. Major topics have included the varying criteria by which the adequacy of safety reports has been judged; the extent to which member states have established effective regimes for inspection and enforcement; the extent to which emergency plans have been implemented; reviews of major accidents which have occurred (including ones outside the Community), the lessons learned and adequacy of member states' reporting arrangements; and whether amendments to the Directive would be desirable.

For a number of years the UK pressed for a fundamental review of the Directive. UK argued that the Directive was badly and confusingly worded making implementation and enforcement difficult, the annexes defining application were excessively long and complex, some of the thresholds had been set at the wrong level, and that wherever possible thresholds should be set at levels which produced an equivalence of harm.

The CEC accepted the need for a review but took little action. Late in 1989 the Council of Ministers adopted a French Government proposal that land use planning controls should be made part of the Directive. This precipitated the review that we had wanted. The form of the fundamental review and the UK's approach to the negotiations are discussed later in this paper.

OTHER INTERNATIONAL INFLUENCES

The UK has played a major part in shaping policy on the control of major hazards in other international fora, in particular in the Organisation for Economic Cooperation and Development (OECD), the United Nations Economic Commission for Europe (UNECE) and the International Labour Office (ILO). Each of these organisations has a different membership which gives a different character to the discussions and each has a different degree of influence on the UK.

OECD

The OECD represents the countries of the developed world; Western Europe, North America, Japan and Australasia. OECD has a growing interest in the subject of major hazard control and completed in December 1991 a 3 year programme of work to produce guiding principles for chemical accident prevention, preparedness and response which were published in the spring of this year. The guiding principles document⁽¹¹⁾ provides comprehensive advice on all aspects of major hazard control. It contains guidance on the safe planning, construction, management, operation and review of safety performance of hazardous installations and, recognising that major accidents may still occur, guidance on mitigation through land-use planning and emergency preparedness and response. The guiding principles provide advice on the role and responsibilities of public authorities, industry, employees and their representatives, as well as other interested parties including members of the public potentially affected in the event of a major accident and non-governmental organisations. The UK played a major part in the negotiations and drafting of the guiding principles document which follows the philosophy of identification, prevention/control, and mitigation.

OECD has commenced a further 3 year programme of work which includes extending the guiding principles to cover the interface between fixed installations and transport modes and addressing the medical and health aspects of major accidents. UK will continue to take an active part in this forum.

UNECE

The UNECE involves Western and Eastern Europe and North America. It has been an increasingly important forum following the improvements in East/West relationships and the recent political changes in Eastern Europe. UK has had a major influence on the content and structure of the Convention on the Transboundary effects of Industrial Accidents⁽¹²⁾ which was signed in Helsinki in the spring of this year. The convention deals with the identification of hazardous installations, consultation, control and prevention of major accidents,

emergency preparedness and response, accident notification, mutual assistance, land-use planning and information to the public. It will be inferred from this that the UK's philosophy of identification, prevention/control, and mitigation has been followed in this convention, an excellent example of UK influence benefitting the wider international community.

The Convention will have little direct effect in the UK as we have few borders with other countries. Items such as exchange of technology and technical expertise are applicable more generally and will receive our support. However, it should have a major influence on the policies of countries of Eastern Europe for whom the control of industrial major accident hazards is becoming increasingly important.

ILO

The ILO has a much wider membership - around 130 states - and includes many developing countries. ILO published a code of practice on the prevention of major accidents in 1991⁽¹³⁾ and has started work on producing a Convention on major hazards. The UK has taken an active part both in the production of the code of practice and in negotiations on drafting the Convention. The EC has also influenced this work and has attempted to ensure similar wording to that used in EC Directives.

THE UK APPROACH TO INTERNATIONAL NEGOTIATIONS

The UK's approach to EC discussions in the area of major hazard control has, in recent years, been based on the presumption that our national interests are best served and protected by active and positive participation in discussions. This policy has successfully resulted in the CEC adopting large segments of the UK's major hazards philosophy.

The EC's Directives have to be implemented in the UK so we have the strongest incentive to influence those negotiations but the ideas and policies adopted in one forum can have a significant effect on those adopted in another. The text from one convention could, for example, be considered for inclusion in an EC Directive (and vice versa). The UK takes an active part in the negotiations in the EC, OECD, UNECE and ILO, and in other fora regarding them as opportunities to influence other countries in favour of a philosophy and approach which we believe to be sound and to prevent unwelcome influences appearing in other international agreements.

The UK places great importance on ensuring that its representatives taking part in negotiations have had a combination of technical and practical knowledge with a basic

legal understanding and drafting skills. This goes some way to ensuring that legislation is worded with enforcement in mind. UK has also pressed in negotiations for the need to back up legislation with effective inspection and enforcement arrangements.

It is UK policy to ensure that there is adequate consultation with the relevant interested parties when international negotiations take place. When the fundamental review of the Seveso Directive was carried out the UK negotiating policy was approved by the Health and Safety Commission (HSC). The Seveso Ad-Hoc Committee (SAHC) was formed under the chairmanship of HSE's Hazardous Installations Policy Unit to carry out the necessary consultation. Its members included representatives of the CBI, TUC, Local Authorities, Emergency Planning authorities, Department of the Environment and other government departments.

FUNDAMENTAL REVIEW OF THE SEVESO DIRECTIVE

The CEC conducted the informal stage of the negotiations through its Committee of Competent Authorities (CCA). This is a committee comprised of technical experts drawn from member states under the chairmanship of DGX1. Following the fundamental review the CEC has published a formal proposal for a new Seveso Directive. The proposed new Directive is wider in scope, simpler to understand, more demanding in its requirements and easier to enforce than the old one.

The CEC's formal proposals will be considered in the CEC's Environment Working Group and Environment Council over the coming months under the UK's presidency. If these negotiations are successful in reaching common position by the end of 1992, the new Directive is likely to be adopted by the Council of Ministers early in 1993. The UK will have to implement the new Directive within 18 months of its adoption.

The chief features of the Directive include:

(1) Application will be dependent on the presence on site of dangerous substances in quantities above certain thresholds. All installations will be subject to a duty to take preventive measures and to report major accidents. Previous distinctions between process and storage activities will be removed.

(2) The scope will be extended by the removal of exemptions relating to explosives, waste disposal and chemical hazards at nuclear installations. UK also argued for extensions of scope to include pipelines and ground level installations at mines and quarries where a major hazard exists but there is not an equivalent standard of major hazard control. UK did not obtain sufficient support from other member states to secure these additional controls. However, there was agreement that pipelines with major hazard potential should be covered by an equivalent control regime and work on a separate Directive

should commence when the negotiations on the revised Seveso Directive are completed.

(3) The Directive will not apply to off-shore installations. The UK view is that major hazards at such installations should be dealt with in a separate Directive preferably one prepared jointly by DGV and DGX1 (which deal with worker protection and environmental matters respectively). It should cover all sources of major accidents not just those arising from the presence of dangerous substances and should set minimum rather than harmonised standards.

(4) There will be greater use of generic categories of substances eg "highly flammable" or "toxic" to define application. This will enable the number of named substances to be reduced from 178 to around 37. It will also ensure that new substances are covered as soon as they receive a classification under regulations dealing with the classification and labelling of dangerous goods for supply.

(5) A new "ecotoxic" generic category will be introduced to cover substances which present a hazard to the environment without hazarding people. Initially, only substances which hazard the aquatic environment will be included because a standard for classification has so far only been agreed for these.

(6) The duty to notify occupation has been switched from top tier to bottom tier to facilitate the identification of all installations covered by the substantive parts of the Directive. This notification has been kept simple so as not to overburden industry.

(7) The duties on management will be extended in line with the UK's emphasis on the need for management to adopt policies and introduce organisations and arrangements to put these policies into effect. The foundation of these new requirements is a lower tier duty to have a major accident prevention policy. This is supported by a requirement for more detail in the top tier safety report about the organisation and arrangements for putting this policy into effect.

(8) In addition to the new management requirements, the contents of safety reports will be set out more precisely for example making it clear that hazard and risk assessments should cover the whole range of potential accident scenarios.

(9) Land use planning requirements will be introduced which are largely based on the UK's present system except that there will be increased emphasis on hazards and risks to the environment as well those to people.

(10) There will be a requirement to test emergency plans and a duty to put them into effect in an emergency.

(11) The scope of information which must be made publicly available will be expanded. It will include off-site emergency plans and those parts of safety reports which are relevant to off site conditions. There will be no requirement to make publicly available confidential information.

(12) The definition of a major accident will be sharpened to avoid the large scale under reporting of major accidents which is believed to have occurred over the last 10 years.

(13) The duties on competent authorities will be extended. An inspection system will be required to check the accuracy of safety reports and to monitor the way in which major accident prevention policies are put into effect. The powers of competent authorities to prohibit dangerous and illegal activities will also be increased.

(14) The CEC will be empowered to set up a Committee of Member States which will be able to agree amendments to annexes of the new Directive. This will enable future changes on matters of detail to be adopted more readily. The Committee will also be empowered to adopt criteria and guidelines designed to improve harmonisation of member states' implementation of the Directive. HSE will make arrangements to ensure that there is full consultation with interested bodies in the UK about discussions in this committee through the new Major Hazards Sub-Committee of the Advisory Committee on Dangerous Substances (ACDS).

FUTURE DEVELOPMENT OF CEC POLICY

The CEC has made it clear that they are dissatisfied with the extent of harmonisation between the policies, standards and practices of member states achieved during the 10 years since the Seveso Directive was adopted. The wording of the new Directive will be clearer, more precise and more detailed which will strengthen their hand in future to allow them to monitor more closely the adequacy of member states' implementation arrangements. These changes are welcome to the UK since they will require other member states to set up effective inspection and enforcement regimes similar to those which already exist in the UK.

The main instrument in the CEC's drive for greater harmonisation will be a Committee of Member States (CMS) which will be set up under the new Directive and which will formalise and replace the present Committee of Competent Authorities. The CMS will be supported by a number of technical working groups covering specific topics or areas of work and which will consider the extent to which those topics would be suitable ones for the adoption of criteria, guidelines or harmonised standards. The technical working groups will report to the CMS which would retain all decision making powers. Four technical working groups have been set up to consider inspection systems, major accident prevention policies management systems and internal safety auditing, evaluation of safety reports, and accident reporting and the equivalence of harm. UK intends to make a strong input into the work of these groups and that of the main CMS.

CONCLUSION

This paper has given an overview of the development of UK and European major hazard control philosophy over the last 20 years. It is clear that UK has been at the forefront of international thinking on this topic and has exerted considerable influence over the way in which controls have been developed throughout the rest of the world to the benefit of the whole international community.

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