

THE CONTROL OF MAJOR ACCIDENT HAZARDS REGULATIONS 1999 (COMAH)

G MacDonald, L Varney

The COMAH Regulations are due to come into force on 3 February 1999. They implement the Seveso II Directive and will replace the Control of Industrial Major Accident Hazards Regulations 1984. There are similarities between the two regimes: they apply where certain quantities of dangerous substances are present; there are two levels of duties depending on the quantities held; and there are requirements for safety reports, emergency plans and information to the public. But there are important differences too, such as: broadening the scope of the regime to cover sectors which were previously exempt; greater emphasis on management systems; greater clarity in the purpose and content of safety reports; more explicit requirements for environmental protection; a new duty to test emergency plans; greater public access to information; new requirements on land use planning.

The paper describes the background to the Seveso regime, and sets out the key features of the new regime.

INTRODUCTION

The Seveso II Directive (96/82/EC published in the Official Journal of the European Communities on 9 December 1996) must be implemented in UK law by 3 February 1999. HSE, the Department of the Environment, Transport and the Regions and the Scottish Office have undertaken a consultation exercise based on a consultative document with proposals for the Control of Major Accident Hazards Regulations (COMAH), which will implement most aspects of the Directive. The consultation period ran from May to September. The speaker will present the results of that consultation exercise at the symposium.

This paper provides:

- background information on the approach to major hazards legislation in the UK and Europe and traces the development of the Seveso Directive to the present day (this information may be well known to some readers and is not essential to understanding of the rest of the paper);
- sets out the main requirements of the Seveso II Directive;
- sets out the key features of the proposals for the COMAH Regulations.

BACKGROUND

The current framework for the control of industrial major hazards in the UK and elsewhere in Europe can be traced back to the work of the Advisory Committee on Major Hazards (ACMH) in the 1970s and early 1980s.

The Committee was set up by the Health and Safety Commission following the disastrous explosion at Flixborough in 1974. ACMH produced three reports, in 1976, 1979 and 1984, the first of which proposed a three part strategy for the control of major hazards consisting of:

- identification;
- prevention/control;
- mitigation.

Identification is carried out by reference to threshold quantities of hazardous substances above which there is thought to be the potential for major accidents giving rise to serious consequences. For practical reasons thresholds do not encompass all installations with such potential, only those with the greatest hazard are included.

Prevention/control requires operators to assess the risks and consequences of major accidents and then apply appropriate precautions to reduce or maintain the risks at tolerable levels.

Mitigation, the third part of the strategy, recognises that accidents cannot be entirely prevented and requires steps to be taken to reduce the effects of such accidents to people and the environment. These steps include land use planning controls to separate vulnerable populations from hazardous installations, emergency planning both on and off-site and information to the public.

Development of UK Legislation

Development of legislation in the UK to implement the ACMH strategy preceded moves within Europe by a number of years. The process started with the introduction of the Notification of Installations Handling Hazardous Substances Regulations (NIHHS) 1982. These required notification to HSE of any site at which hazardous substances listed in the regulations were present above certain thresholds.

Plans for further UK legislation were then overtaken by events in Europe where a series of major accidents persuaded the European Commission that concerted Community wide action in this field was necessary.

The "Seveso" Directive

The efforts of the European Commission and member states resulted in the Seveso Directive. The Directive depended on threshold limits of listed substances to define application and

introduced the concept of two level or tiers of control. The Directive differed significantly from the original UK proposals in that it applied to both human health and safety and the environment.

Preparation and subsequent development of the first Directive was driven by a series of accidents in Europe and India. The directive was developed in the aftermath of an incident in Seveso, northern Italy in 1976 where the accidental production and release of a dioxin as an unwanted by-product from a runaway chemical reaction led to widespread environmental contamination. In 1987 the directive was amended to reflect the lessons learnt from the Bhopal disaster. The 1988 amendment broadened the scope to storage premises following the fire in the Sandoz warehouse in Switzerland which led to far reaching pollution of the Rhine.

In the UK the Directive was implemented through the Control of Industrial Major Accident Hazards (CIMAH) Regulations 1984 and its subsequent amendments. CIMAH has an underpinning duty on all sites within scope to identify major accident hazards and take steps to ensure that they are prevented. However there are more specific requirements on top tier sites to produce safety reports and emergency plans and to provide information to members of the public who may be affected by a major accident.

The Review of the Seveso Directive

Though Seveso was a good first attempt at Community wide legislation to control major hazards, it suffered from a number of weaknesses. The directive was complex and difficult to implement, a position not improved by the later amendments. The application annexes were long and inflexible with over 170 named substances. Also, the directive lacked any reference to a major part of the mitigatory package, land use planning. Furthermore, it was felt that the Directive was unevenly implemented in member states.

For a number of years the UK and other member states pressed for a fundamental review of Seveso. In 1989 the Council of Ministers recommended that land use planning should be made part of the Directive precipitating the review which was started in 1990.

The review of Seveso, carried out by the European Commission in conjunction with the Committee of Competent Authorities, made up of representatives of all the governmental bodies enforcing the Seveso Directive in their respective countries, was sufficiently far reaching to require the drafting of a new Directive. The draft, entitled "Proposals for a Council Directive on the Control of Major Accident Hazards involving Dangerous Substances" (COMAH or Seveso II) was published in April 1994. Following intensive negotiations which began in February 1995, the Directive reached common position in June of that year. It was finally adopted on 9 December 1996.

The Seveso II Directive: Requirements

The new Directive, whilst similar in nature to Seveso and following the same two tier format for duties, differs in a number of important ways. It reflects more clearly the relatively recent

emphasis on safety management systems, seen as the key to high and sustainable levels of safety. It also contains a mechanism to allow the Directive to be kept up to date with technical progress and includes greater detail to ensure a more uniform implementation by member states.

The chief features of the new Directive are:

- (a) Application will depend solely on the presence on site of the threshold quantity of dangerous substance. Previous distinctions between process and storage activities will be removed.
- (b) The scope will be extended to include chemical hazards at nuclear installations and explosives. This will leave exemptions for the extractive industries, transport related establishments, pipelines outside of establishments and military installations.
- (c) There will be a greater use of generic categories of substances eg "highly flammable" or "toxic" to define application enabling the number of named substances to be reduced to 37. The generic categories are separately defined by the directives dealing with the classification and labelling of dangerous goods for supply. The use of this mechanism should ensure that new substances are covered as soon as they receive a supply classification.
- (d) A new "ecotoxic" general category will be introduced to cover substances which present a hazard to the environment without necessarily being dangerous to people.
- (e) The increased emphasis on safety management systems is reflected at both top and lower tier. Operators of lower tier establishments are required to have a "major accident prevention policy" with the organisation and arrangements to put the policy into effect. This policy forms part of the safety report that operators must submit for all top tier installations.
- (f) 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.
- (g) Land use planning requirements will be introduced but with a need to take into account risks to the environment.
- (h) There will be a continuing requirement to prepare on and off-site emergency plans with additional duties to test those plans and put them into effect and to include measures to be taken for remediation and clean up of the environment.
- (i) Openness has been extended by making safety reports available to the public.

- (j) Criteria for the reporting of major accidents are included to improve the consistency of reporting from member states to the European Commission.
- (k) The duties of competent authorities will be extended and there is a new obligation on them to communicate the conclusions of the examination of the safety report or prohibit start up or continued operation where there is evidence that the measure taken for the prevention and mitigation of major accidents are seriously deficient. There will also be a requirement for member states to set up a system for the inspection of installations covered by the Directive.
- (l) The European Commission will be empowered to set up a Committee of Member States which will be able to agree amendments to certain annexes to the Directive.
- (n) There is a new requirement on competent authorities to designate establishments which might give rise to domino effects.

KEY FEATURES OF THE COMAH REGULATIONS

All Measures Necessary

All operators have to ensure that they have taken "all measures necessary" for the prevention and mitigation of major accidents. We have set out an interpretation of this duty which recognises that, by requiring measures for prevention and mitigation, the duty does not set an objective of zero risk. Therefore a judgement has to be made as to whether the measure is necessary in relation to the major hazard and the associated risks that the measure addresses.

These factors allow us to retain the concept of proportionality in enforcement of the regime and we believe the current approach based on reducing risk to as low a level as reasonably practicable will be sufficient to meet the "all measures necessary" test.

Major Accident Prevention Policy

Operators must set out and implement a policy for major accident prevention - the MAPP. Top-tier operators have to include the MAPP in their safety reports. A stand alone document is required at lower-tier establishments. The Regulations list the elements of a safety management system which must be considered in the MAPP, and all these should be familiar to UK industry:

- roles and responsibilities of personnel
- procedures for hazard identification;
- operational procedures;
- modification procedures;

- procedures for handling emergencies;
- monitoring, auditing and reviewing procedures.

We expect the MAPP usually to be a short and simple document. It should set down what is to be achieved, with an indication of how this is to be done, but not in any great detail. The detail will be contained in other documentation on site eg plant operating procedures, training records, job descriptions, audit reports, to which the MAPP can refer.

It is important to emphasise that an essential element of a safety management system is a procedure for handling emergencies. For lower tier establishments there is no list of requirements which emergency plans must address and there is no set period at which plans have to be tested, as there is for top tier sites, but handling emergencies effectively and efficiently are every bit as important.

Safety Reports

As in Seveso I and CIMAH the safety report must provide all the data and information which is listed in the Regulations. However the new Regulations list, for the first time, the purposes of safety reports. Essentially the report must demonstrate that necessary measures have been taken for major accident prevention and mitigation in terms of both organisational and technical factors. We are therefore moving from CIMAH where the safety report is mainly descriptive, to COMAH where it is, additionally, a justification for an operator's approach.

The regime for submission, review and revision of the safety report by the operator differs in COMAH from CIMAH. So too is the action required from the competent authority. For new establishments, the proposal is that operators submit safety reports in two parts. The first part, submitted prior to construction, should describe substances, accident scenarios, processes and activities on site and the surrounding environment, together with such information as the operator has on the design of plant which might affect safety. The operator cannot start construction without having received the assessment conclusions from the competent authority. The second part of the safety report is submitted before operation and it adds further relevant design detail together with the operational procedures etc which it would have been unreasonable to expect the operator to have before construction. Again the operator cannot start operation before receiving the competent authority's conclusions of the assessment.

Existing establishments will submit their safety reports and continue operating whilst the regulator undertakes its assessment. For both new and existing establishments the competent authority is under a duty to prohibit operations if they have evidence that there is a serious deficiency in the measures taken for major accident prevention or mitigation.

Safety reports should be reviewed and, where necessary, revised:

- at least every 5 years;

- at any time where justified by new facts or to take account of new technical knowledge;
- when modifications are proposed which could have significant repercussions on major accidents.

Emergency Planning

There are similarities between the emergency planning regimes in CIMAH and COMAH: the operator must produce an on-site plan and the local authority must prepare an off-site plan. Both must meet objectives and contain information which are set out in the Regulations. However, there are also significant differences: providing for restoration and clean-up of the environment after a major accident has been added to the objectives of emergency plans; on-site and off-site emergency plans have to be tested at least once every 3 years.

Environmental remediation and clean-up raises some difficult questions. For example, what sort of baseline needs to be established for the quality of the environment against which the adequacy of remediation and clean-up will be judged? And who pays for it? These issues are being considered by DETR, who have the policy lead in these areas, at the moment.

The requirement to test emergency plans every 3 years is an important new duty. Testing is essential to give confidence in the accuracy, completeness and practicability of the plan. The Directive does not define what constitutes an adequate test so we have set out in the consultative document an interpretation. Central to this is the idea that testing is not a single activity. For instance, it does not necessarily mean a full scale live exercise at each installation at an establishment or, for the off site plan, at each establishment every 3 years. Rather testing may consist of a range of activities such as:

- table top exercises, where all the appropriate resources are brought together in one place to work through their roles in the event of an emergency;
- “control post” communication exercises which examine the adequacy of the communication arrangements between the key players in an emergency;
- use of virtual reality systems to support table top or other exercises;
- live exercises which deploy on the ground all the appropriate resources in a simulation of their actual response to an accident.

There may be scope for employing economies of scale in testing regimes. For instance, for an off site plan, it may be possible for one live or table top exercise to test the off site components of two or more sites. This will depend upon similarities of the location and of the risks posed to the adjacent population and environment. Similarly, for on site plans at multi - installation sites, it may be possible to use lessons learned from live exercises on some installations, supported by table top exercises for other installations. This will depend on similarities in the hazards and risks posed, and in the type of emergency response.

Whatever the precise details of the arrangements it will be essential that lessons learned from tests are fed back to all relevant personnel and organisations.

Emergency plans must be reviewed as well as tested. Review is a fundamental process which must take into account:

- all material changes in the activity;
- any changes in the emergency services relevant to the operation of the plant;
- advances in technical knowledge, for example new, more effective means of mitigation;
- knowledge gained as a result of major accidents either on site or elsewhere;
- lessons learned during the testing of emergency plans.

Emergency planning is an essential element of the COMAH regime. There is some guidance in the consultative document on this but we plan to publish a new guidance document on emergency planning next year which will give much more detail.

Public Access to Information

COMAH contains a new requirement for safety reports to be made available to the public. Certain information can be withheld on the grounds that it is commercially confidential, it is personal, or it might compromise national security or public safety and we are developing guidance on what these exempt categories might mean in practice.

We propose that safety reports should be made available for the public at operator's premises and at the offices of the Environment Agency and SEPA. In addition, we will recommend that operators try and reach agreement with local authorities on putting safety reports in libraries and town halls.

Finally there is the question of how safety reports should be presented where some information is to be withheld. We have left operator's the option of deleting parts of the report, or undertaking a more substantial re-edit of the document.

Environmental Requirements

All of the requirements of the new regime apply to protection of the environment, but COMAH has *more explicit requirements for environmental protection than CIMAH* Some of these have been mentioned. One of the generic categories of dangerous substances which will attract the regime is substances dangerous substances for the environment. Emergency plans must address remediation and clean up of the environment after a major accident. In addition the content of safety reports regarding the environment has been made clearer.

DETR have commissioned important research in these areas and an update on the outcomes of this work will be given at the symposium.

Land Use Planning

The Seveso II Directive contains, for the first time a requirement for member states to have land use planning or other policies which take account of the location of new sites, and modifications to, and developments around, existing sites. The UK has had a land use planning system in place for some time but this will need to be amended to apply such controls to all sites subject to COMAH, and to ensure that environmental protection is considered in the siting of new establishments. The land use planning aspects of the Directive will be implemented through changes to planning law.

ENFORCEMENT OF THE REGIME

HSE are the sole competent authority under Seveso I/COMAH. This will change. Under COMAH HSE and the Environment Agency and Scottish Environment Protection Agency will be the competent authority. HSE and the agencies are developing detailed working arrangements for this at the moment. Central features of the arrangements are:

- submission of documents such as safety reports to a single office;
- HSE and the agencies working together as a team on the assessment of safety reports providing the operator with a single set of conclusions;
- HSE and the agencies sharing inspection programmes to identify the need for joint or co-ordinated inspections.

CONCLUSIONS

COMAH is a development of the existing regime but it introduces significant changes. This paper identifies some of the key ones. HSE, DETR, and the Scottish Office have published a consultative document which presents proposals for Regulations and interpretative guidance. The consultation period ends on 4 September. After that, the views of consultees will be analysed, changes to the Regulations will be made and a new draft submitted to Ministers and the Health and Safety Commission. In order to comply with the Directive the new Regulations have to be in force by 3 February 1999.