

## **THE AMENDMENT OF THE SEVESO DIRECTIVE AND PROPOSED CHANGES TO THE CONTROL OF MAJOR ACCIDENT HAZARD REGULATIONS (COMAH) 1999**

David Bosworth

Health & Safety Executive, Bootle, UK; [www.hse.gov.uk](http://www.hse.gov.uk)

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The amendment of the Seveso II Directive adopted on 31 December 2003 is described. The proposed implementation of the Amending Directive into UK Regulations by amending the COMAH Regulations is outlined along with the some aspects of the regulatory impact assessment required under government policy.

**KEYWORDS:** Seveso II Directive, Control of Major Accident Hazard Regulations 1999

The Seveso II Directive (Directive 96/82/EC) on the control of major accident hazards involving dangerous substances was adopted in 1996. The UK implemented the Directive via the Control of Major Accident Hazards Regulations 1999 and the land-use planning regimes for hazardous substances consent. The objective of the Directive is to prevent major accidents and limit their consequences for human health and the environment.

When the Directive was adopted questions were raised in the Environment Council concerning the scientific and practical basis for the list of named carcinogens, the qualifying quantity assigned to them, and the qualifying quantities for substances dangerous for the environment. The Commission was requested to carry out studies on these issues and to submit reports accompanied, if appropriate, by proposals for amending the Directive.

In response to these requests, the Commission, after consulting with the Committee of Competent Authorities (CCA) set up under the original Seveso Directive, established two Technical Working Groups (TWG 7 "substances dangerous for the environment" and TWG 8 "carcinogens"). The Technical Working Groups delivered their Final Reports in April 2000<sup>1,2</sup>. The reports propose extending the list of carcinogens with appropriate qualifying quantities, and significantly lowering the qualifying quantities assigned to substances dangerous for the environment.

On 10 December 2001, the Commission adopted a proposal to amend the Seveso Directive broadening its scope to take into account the reports of the technical working groups and industrial accidents at Baia Mare in Romania in 2000 that resulted in cyanide entering a river, and an explosion at a fireworks factory in Enschede in the Netherlands in 2000 in which 20 people were killed. During discussions in the Environment Council a new amendment on ammonium nitrate was adopted after an explosion at a fertiliser factory in Toulouse, France, which killed 30 people.

The amendment was further developed during the negotiation process in the Environment Council and discussions in the European Parliament. The final amending Directive was published in the Official Journal of the European Commission on 31 December 2003 (2003/105/EC) at which time it came into force. The UK, along with the other Member States will have 18 months to implement the Directive in national legislation.

The amending Directive:

- Clarifies the mining exclusion to cover the storage of hazardous substances in the processing of minerals at mines and quarries;
- Implements administrative provisions for time periods for the submission of notifications (3 months), safety report (12 months), provision of information for off site emergency plans (12 months) and drawing up of off site emergency plans (12 months);
- Requires consultation of personnel and long term sub-contracted personnel on the preparation of internal emergency plans;
- Requires Member states to take account of major transport routes in land use planning, assist the Commission in drawing up a technical database including risk data and risk scenarios used to assess compatibility of major hazard establishments and other areas: and
- Requires operators to supply regularly information on emergency procedures, in the most appropriate form, to persons and all establishments serving the public.

The amendment also made a number of technical changes to the annexes:

- Amending the references to other Directives for classification, packaging and labelling of substances and preparations;
- Amending the classification of explosives and pyrotechnics to harmonise with the UN/ADR classification which has priority over the CPL classification;
- Adding seven new carcinogens to the existing list; raise the qualifying quantities to 0.5 and 2 tonnes and raise the dilution cut off from 0.1% to 5% for all carcinogens;
- Reducing the qualifying quantities for substances classified as dangerous for the environment to 100 and 200 tonnes for very toxic and 200 and 500 for toxic (annex 1, part 2 entry 9);
- Amending the entries for ammonium nitrate maintaining the current classes but reducing the concentration of ammonium nitrate covered, making the detonation test necessary for fertilizers and introducing classes for fertilizers capable of self sustaining decomposition 5000 and 10,000 and reject material 10 and 50 tonnes;
- Redefining the entry for automotive petrol and other petroleum spirits and halve the qualifying quantities 2500 and 25,000 tonnes;
- Altering the summation rule to require substances with multiple dangerous properties to be summed in all relevant classes and breaking the summation of substances dangerous to the environment with those toxic to humans;
- Requiring maps or equivalent descriptions showing areas liable to be affected in the event of a major accident to be included in safety reports;

- Requiring the safety management system to address the involvement and training of sub-contracted personnel.

The full text of the amendment is on the European Commission internet website and on the HSE website (<http://www.hse.gov.uk/chemicals/index.htm>).

The COMAH competent authority (HSE & Environment Agency for England and Wales, HSE & Scottish Environment Protection Agency for Scotland) has identified a small number of changes that need to be made to the regulations to clarify or make explicit certain requirements. These are minor, domestic amendments and do not impinge on implementation of the either the original or the amending Directive. They include:

- review and revision of safety reports;
- clarification of the method of notification; and
- disclosure/freedom of information issues in connection with the provision of information by the competent authority.

A further change proposed would place a requirement on the operator to provide, in cases approved by the competent authority or the Secretary of State, a copy of the safety report that excludes matters of e.g. industrial, commercial, or national security, and is suitable to be made available to the public. This was in the original Directive 96/82 but was not implemented through COMAH Regulations 1999.

HSE proposes to implement the changes to the COMAH Regulations in line with the Government's policy for the transposition of EC measures into law. This policy is:

- transposing so as to achieve the objectives of the EC measure;
- transposing on time;
- implementing Government policy goals, and minimising burdens on business;
- inviting Ministers to articulate clear policy goals for the transposition; and
- options for transposition to be described to Ministers with an assessment of the risks to the achievement of the objectives, including legal risks.

The amendment provisions of the Directive are such as to require implementation through legislation. It was considered that implementation through an Approved Code of Practice or guidance would be insufficient and could leave the UK open to the possibility of infraction proceedings by the European Commission. There are no provisions in the amending Directive that HSE wish to either over or under-implement for domestic reasons.

There were two ways open to HSE to introduce the legislative changes:

1. a set of regulations that would amend and sit alongside COMAH; or
2. a new set of consolidated COMAH regulations.

HSC endorsed option 1 because this is the first time that COMAH has been amended and, given the straightforward nature of the Directive and the small number of other changes proposed, there are no special considerations that mitigate in favour of consolidating COMAH at this time (as a general rule, consolidating regulations are usually produced when a set of regulations has already been amended three times).

HSC has consulted widely on its implementation proposals and is preparing revised Regulations after analysis of the consultation responses.

As part of the process of introducing new regulations HSE had to complete a Regulatory Impact Assessment to examine the costs and benefits of the Amendment Regulations.

A key source for the cost data used in the assessment is the Entec report '*Safety report regime – evaluating the impact on new entrants to COMAH, 2003*'<sup>3</sup>. The Entec study estimated the costs of compliance with the COMAH regulations following their implementation. Information from the Entec report on possible benefits of COMAH has also been included in the benefits section. In addition Det Norske Veritas (DNV)<sup>4</sup> was commissioned by the Department for Environment, Food and Rural Affairs to undertake two studies to assess the number of sites which will be brought into the scope of COMAH based on the storage of 'Substances Dangerous for the Environment', R50, R50/53 and R51/53 substances at current and suggested alternative thresholds. The substances examined by the study were those which will be included solely because of the risk they pose to the environment and will not be included under "toxic (to humans)", "flammable" or any other heading. These estimates were used in the RIA.

The amendments will affect all current COMAH sites, bring a number of new sites into its scope and upgrade some sites from lower tier to top tier status. The sites affected will mainly be operated by businesses in the basic chemical, petroleum, electricity and water supply sectors, and those involved in the manufacturing and storage of explosives. Sites in other sectors will be affected if they store above the threshold quantities of dangerous substances as specified by the Directive. HSE estimates that there are currently 360 top tier sites and 800 lower tier sites.

Using data from several sources HSE estimates that the amendments will affect a total of between 215 and 230 sites. The numbers of sites in the different risk categories are given in the paragraphs and table below.

**Table 1.** Number of sites affected by changes in scope and COMAH status

Risk category	Effect on site			Total
	Enters COMAH as lower tier	Enters COMAH as top tier	Moves from lower to top tier	
Carcinogens	15	16	34	65
Explosives	10	0	20	30
Petroleum substances	28–39	0	18–22	46–61
Substances dangerous for the environment	29	0	23	52
Ammonium Nitrate	20	2	0	22
Total	102–113	18	95–99	215–230

## **BENEFITS**

### **HEALTH AND SAFETY BENEFITS AND OTHER BENEFITS IDENTIFIED FROM THE EXISTING COMAH REGIME**

#### *Duty holder's assessment of COMAH benefits*

As part of the Entec<sup>5</sup> report, participants were asked their views regarding the possible benefits of COMAH to their establishment. They suggested many benefits of COMAH including:

59% more awareness amongst the workforce of major accident hazards

37% more systematic analysis of major accident hazards

36% better understanding of major accident hazards

8% improved dialogue with Competent Authority

5% better knowledge of neighbours' activities

26% of those expressing an opinion stated that COMAH had benefits to their business beyond compliance.

#### *Financial benefits associated with avoiding the costs of accidents*

Research by HSE in conjunction with WS Atkins<sup>6</sup> estimated that the total cost of the 20 major chemical/petrochemical accidents since Flixborough was at least £500 million in 1996 prices. These costs are equivalent to a figure of around £20 million [Calculated by roughly dividing the total cost by the years covered — £500m/24] each year.

Future catastrophic risks are likely to incur lower costs than these figures because safety has improved over the last two decades. However, it is estimated that the current risk at high hazard sites would probably remain in the region of £10 million to £100 million per year in monetary terms even if the part of the risk relating to the most serious incidents has been significantly reduced.

## **COSTS**

### **COSTS OF COMPLIANCE DUE TO CHANGES IN SCOPE AND COMAH STATUS**

As a consequence of the proposed changes to the definitions and qualifying quantities of dangerous substances covered by COMAH, compliance with other COMAH provisions automatically becomes necessary. These are:

- notification to the competent authority (by new lower and top tier sites);
- preparation of a MAPP (lower tier only);
- preparation of a safety report (top tier only);
- on and off-site emergency plans (top tier only); and
- provision of information to the public (top tier only).

Data from the Entec report assists estimation of some of these costs. In particular, it provides information on the cost of assessing the hazards (cost of analysis) and the cost of drafting the MAPP or safety report (cost of writing). The average cost of analysis for new entrant top tier establishments is estimated at £64,000 and the writing cost at £71,000. For

lower tier establishments the figures are £9,000 and £8,000 respectively. The assumed corresponding costs for establishments whose status changes from lower to top tier is the difference of the values estimated at top and lower tier, that is £55,000 for analysis costs and £63,000 for writing costs.

The Entec study also considered ‘control’ costs and estimated these at £376,000 for the average new top tier establishment and £160,000 for the average lower tier site. On this basis the ‘control’ cost for an establishment that moves from lower to upper tier would be £216,000.

The Entec report identified ‘control’ costs as the costs of changes to arrangements for managing major accident hazards identified as a result of writing a MAPP or safety report (one of the benefits identified in the Entec report was that structured consideration of safety driven by MAPPs and safety reports identifies opportunities for improvements).

Using the above information on the number and unit costs per site the total cost of the Directive 2003/105/EC is £17.8–£18.6 million excluding additional safety measures and £59.0–£62.3 million including additional safety changes [Calculated by multiplying the number of sites set out in Table 1 by the relevant unit costs in Table 2.] The total costs by risk category are shown in Table 2.

**COSTS TO ALL COMAH SITES**

Amendments to the Seveso II Directive will require top tier operators to provide a map, image or equivalent description as part of their safety report. Latest figures from HSE indicate that there are currently 360 top tier COMAH sites. This figure will rise to 475 sites as the amended directive will lead to a further 18 establishments entering COMAH for the first time at top tier level and another 95 to 99 will move from lower

**Table 2.** Costs of compliance due to changes in scope and COMAH status

Risk category	Total cost (£m) (inc additional safety measures)	Annualised cost (£m) (inc additional safety measures)*	Total cost (£m) (excluding additional safety measures)	Annualised cost (£m) (excluding additional safety measures)
Carcinogens	22.2	2.2	7.8	0.8
Explosives	8.4	0.8	3.0	0.3
Petroleum substances	11.0–14.3	1.1–1.4	3.1–3.9	0.3–0.4
Substances dangerous for the environment	12.8	1.3	3.9	0.4
Ammonium nitrate	4.6	0.5	0.7	0.1
Total	59.0–62.3	5.9–6.2	17.8–18.6	1.8–1.9

\*Total cost over the appraisal period divided by 10.

to top tier status. The existing COMAH regime already requires operators to provide information on effect or consequences data in the safety report. As this can often be complicated, some sites already opt to show these effects in map form. Furthermore, HSE estimates that at least 50%, and possibly as many as 66%, of all operators currently choose to provide this information in a map form to the competent authority. Estimates of the map/image and modification notification costs, is estimated between £44,000–88,000.

#### Guidance

HSE is intending to publish a revised version of 'A guide to the Control of Major Accident Hazards Regulations' (L111) which will be updated to reflect the amending regulations. This would provide guidance on the changes to the regulations, clarify existing guidance to reflect experience of the operation of COMAH and include revised guidance on, in particular, the review and revision of safety reports.

#### Changes to other legislation

Because the amending Directive includes changes to the substances covered and qualifying limits, consequential changes will need to be made to legislation on land-use planning and hazardous substances consents, which is the responsibility of other Departments (Welsh Assembly, Scottish Executive and Office of Deputy Prime Minister). Northern Ireland will implement the Directive separately.

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