

LESSONS LEARNED ABOUT PREPARING COMAH SAFETY REPORTS

Trevor Britton

Health & Safety Executive, Hazardous Installations Directorate, St Anne's House,
University Road, Bootle, Merseyside, L20 3RA

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Operators of COMAH scheduled premises are required to prepare a safety report making a number of demonstrations to show that they are able to prevent and limit the consequences of the major accidents identified from their processes. The regulator is required to come to conclusions about each operator's report and give their conclusions to the operator within a reasonable period of time. All the required reports have now been received. This paper outlines the key issues and lessons learned by the regulator about the preparation of such reports based on assessment experience so far. It summarises the key components of COMAH safety reports and what is good practice in writing them. The paper also takes a glimpse into the future by looking at some of the matters currently being considered involving COMAH and other permissioning regimes.

COMAH, Safety Reports

BACKGROUND

The Control of Major Accident Hazard Regulations (COMAH) apply to establishments that have, or can anticipate having, threshold quantities of dangerous substances. The regulations are goal setting and place a duty on operators of establishments to take all measures necessary to prevent and limit the consequences of a major accident. COMAH replaced the earlier Control of Industrial Major Accident Hazards Regulations 1984 (CIMA).

COMAH is enforced in Great Britain by a new 'competent authority' (CA) which consists of the HSE and the Environment Agency in England and Wales and HSE and the Scottish Environment Protection Agency (SEPA) in Scotland. HSE and the Agencies work together jointly to implement the Regulations.

Central to COMAH is the requirement for operators of establishments, with higher thresholds of dangerous substances specified in the regulations (referred to as 'top-tier' establishments) to send a safety report to the CA. The safety report is a key element in identifying, preventing, controlling and mitigating major accident hazards. This is a continuation of a similar duty under CIMA, but there are key differences between the two, which have led to deficiencies in COMAH reports submitted as follows:

- COMAH requires a report for an establishment as a whole, not just for individual hazardous installations containing dangerous substances
- The definition of 'dangerous substance' has been changed from a lengthy scheduled list of named substances to a very much shorter list. However it now includes 'generic' categories of substances, such as 'flammable', 'toxic' and 'dangerous for the

environment', based on their classification under the Chemicals (Hazard Information and Packaging for Supply) Regulations 1994, colloquially known as CHIP2.

- COMAH has more specific requirements in relation to safety management systems, including an additional requirement for a written Major Accident Prevention Policy to cover the overall aims and objectives with respect to control of major accident hazards.
- Increased emphasis on the prevention and limitation of the consequences of a major accident to the environment.
- Operators are now required to demonstrate how they are preventing and limiting the consequences of major accidents. Specifically, they are required to show the effectiveness of their management systems, that they have properly identified the major accident hazards, that the necessary prevention and limitation measures are in place, that the installations themselves are of adequate safety and reliability in design, construction and maintenance and that an on-site emergency plan have been drawn up.

IMPACT OF CHANGES

These changes have had a significant impact on the preparation of safety reports.

ESTABLISHMENTS AND DANGEROUS SUBSTANCES

Operators now have to consider the major accident potential across the whole of their sites, not just at the installations with the scheduled quantities and for a much broader range of substances, including preparations and mixtures, depending on their CHIP classification. As a result there are a further 100 plus COMAH top tier establishments contributing to a current total of over 350 such sites. The 'new entrant' sites include an increased percentage of businesses outside the traditional chemical industry, such as whisky warehouses, explosives sites and steelworks.

MANAGEMENT SYSTEMS

Furthermore, COMAH places emphasis on the importance of effective management arrangements for controlling major hazards and describes the framework for the systems that are required in Schedule 2 of the Regulations. This framework corresponds well to the model espoused in the HSE publication HS/G 65¹ *Successful Health & Safety Management* that should be familiar to all COMAH site operators. As a result, providing information in their safety reports about management arrangements has not caused UK operators too many problems, whereas in many EU countries this new development in Seveso II has been a major step change for operator and regulator alike.

ENVIRONMENT

A major challenge has been in showing that the major accident hazards to the environment have been systematically identified and as a result that the necessary measures to prevent a major accident to the environment (MATTE) are in place. Guidance on what is a MATTE² has been published but has proved difficult for operators to use during their risk predictive assessments. The Environment Agency has published guidance on undertaking an environmental risk assessment for COMAH³.

The systematic identification of major hazards and assessment of their likelihood and severity is more complicated when considering the environment as a whole rather than just the people in it. If we look at the major accident potential in a simple way by considering the source of a release, the pathway to harm i.e. water, ground or air and the receptor, whether flora, fauna or the built environment, then the same model can be applied for both people and the environment as a whole. Clearly the release sources will be the same or similar and should be straightforward to identify. The pathway can be identified and the distribution modelled, however the response, in other words the harm, to the receptor from a quantity of release is a bigger problem given the diversity of receptors and the paucity of relevant dose-response data. This was a major topic that was highlighted in the COMAH CA Conference held in London (Nov. 2000).

The CA recognises the difficulty in providing appropriate data but expects operators to be thorough in the identification of sensitive receptors and to justify reasonable assumptions when describing the likely harm. Although these assumptions may introduce large uncertainties into the outcomes, these do not invalidate the importance of the risk assessment process and the consideration of whether existing control measures are adequate. The focus of the risk assessment should be on identifying release mechanisms and preventing them rather than whether the release affects an area of 5m² or 7m². However, some base line prediction (with uncertainties) or worst-case scenario has to be made to indicate the effectiveness of control, preventative or mitigation measures.

DEMONSTRATIONS

Even so, it has not been the above changes that have proved the most difficult challenge to operators in preparing safety reports and to the CA in assessing them. The requirement to demonstrate that certain controls are in place and the extent of the information required have proved the major stumbling blocks, so much so that up to 30% of the safety reports were initially returned for further work to be done. This did not mean that up to 30% of the UK COMAH sites were unsafe but it did mean operators had not made a case that their sites were safe and equally importantly that they had not shown they couldn't do more to prevent a major accident or limit its consequences.

CURRENT ISSUES RELATING TO DEMONSTRATIONS

The last tranche of safety reports due by 3 February 2002 has now been received. The majority was received by February 2001 so the CA has significant experience in assessing COMAH safety reports. There have been lessons learned by the CA as well as operators, resulting in revised procedures⁴, which were introduced at the beginning of 2002 and are described elsewhere⁵.

The key purpose of a COMAH safety report is to make the necessary demonstrations specified in Schedule 4 part 1. Assessors are finding that the following are the main reasons why operators have not been making these demonstrations as required:

- **Inadequate linking between major accident scenarios and the measures provided.** The links between the major accident scenarios and the necessary measures to prevent or limit the consequences of a major accident are not clearly made within the report. Too

many operators are providing a description of what is done and asserting that they have all the measures that are necessary without making the links to scenarios, which are representative of the type of major accidents that could occur, to show this. The risk control systems that form part of the management arrangements, such as inspection and maintenance, change management, training etc. are important components of the full measures necessary when making these links.

- **Incomplete arguments as to why an operator believes that all necessary measures have been taken to prevent or limit the consequences of a major accident.** The guide to the COMAH Regulations⁶ at paragraph 75 clearly states that prevention should be considered in a hierarchy based on the principles of reducing risk to **as low a level as reasonably practicable (ALARP)**. Operators are failing to show that there is a systematic risk assessment process, which is used to select, prioritise and schedule measures to reduce major accident risks ALARP.
- **Inadequate information.** The information provided about the measures in place and in what way they are relevant is often not enough or written in too general terms. Commonly operators are referring to company standards or practices without describing the relevance of the standards or guides they are referring to, what they cover, in what way they are relevant, how they operate, in what circumstances they are used and what limitations there are. Even so, the CA does not want to see the inclusion of copies of the company standards and guidance documents with a safety report, only an outline of how the standards are relevant.

MAKING THE DEMONSTRATIONS

ALARP PRINCIPLES

The demonstration that all measures necessary have been taken to prevent or limit the consequences of a major accident underpins the whole purpose of the safety report. This involves showing that the risks are ALARP, as explained above. The CA view of ALARP is discussed in HS/G 190⁷ and in *Reducing Risks, Protecting People*⁸ (R2P2). Essential considerations are:

- the scope for hazard elimination
- the scope for inherently safe design
- the extent to which relevant good practice is adopted

Where good practice has not been established, operators will have to show on a case specific basis that they have implemented risk-reduction measures to ALARP. **Good practice** is a much used and abused term. In this context, HSE use it as a generic term for those standards for controlling risk which have been judged and recognised by HSE as satisfying the law when applied to a particular case which is relevant and in an appropriate manner. This is discussed in more detail in R2P2⁸ and supporting documents on HSE's website.

Where such codes or standards are relevant, the operator does not need to justify costs and technical feasibility against the acceptability of the risks involved, since these will have been considered when the codes or standards were prepared. However, the scope of the

code or standard should be sufficiently clearly defined to know whether the specific circumstances addressed by the safety report are within scope or not.

The demonstration argument should show a clear bias towards safety, whether human or environmental, when justifying the measures in place are all that are necessary. Even in the cases where good practice, through following recognised standards, codes and guidance, is adopted throughout, operators should consider whether there are particular circumstances, because of the location of the establishment or because of serious consequences on site, that mean they should take additional measures to justify their arguments that risks are ALARP.

Where the report shows that a number of options for risk reduction exist, all options, or combination of options, that are reasonably practicable should have been implemented. The legal requirement to reduce risks ALARP means that the CA is likely to challenge a measure(s) provided if there are options that provide better protection but have not been chosen, for example on cost grounds.

ALARP arguments require an assessment of the risk that might be avoided. A comparison of net sacrifice and the benefits of risk reduction will give an overall view on the risks presented by a COMAH establishment. In making a demonstration in a COMAH safety report, this comparison is frequently made in monetary terms. If so, then case law indicates there has to be a considerable bias towards the cost of the sacrifice before an operator should accept that all measures necessary to prevent or limit a major accident have been taken. There is a requirement to show a gross disproportion between costs and benefits before deciding nothing further need be done. There are 2 simple questions, which should be answered by operators to take account of these issues: What more can I do? Why am I not doing it?

During assessment of COMAH safety reports, many operators have been asked to provide further information on extent and severity of their major accident hazards. Operators have been reluctant to provide information on the number of potential casualties, serious injuries and hospitalisations to be determined for each major accident hazard scenario given that it will be placed on the public register. Clearly this information is essential to enable a meaningful comparison between the sacrifice and benefits, when making the risk assessment and the consequent decisions as to whether further measures are necessary.

At the design stage, a life-cycle approach should be adopted taking account of the foreseeable risks throughout the lifetime of the installation and the measures required to prevent or limit the consequences of a major accident.

RISKS TO BE COVERED

Both individual risk and societal risk should be considered and both should include the risks to people off-site. HSE has published its approach to making ALARP decisions in R2P2⁸. It is the risk posed by reasonably foreseeable hazardous events from the duty holders' work activities both to employees and others not in their employ that must be addressed.

Societal or group risk is the risk of a number of multiple fatalities occurring in one event from a single major industrial activity and HSE has published criteria for addressing this risk. These criteria have been developed through the use of so-called FN-curves

(obtained by plotting the frequency F at which such events might kill N or more people) to identify unacceptable, broadly acceptable and tolerable societal risks. These have been further developed for major hazards relating to dangerous substances and are available in an HSE document⁹.

Even so, when considering the benefits at a particular site, if a measure results in a 'transfer' of risk to other people, the added risk to those people should be offset against the benefits the measures provide. For example, reducing the inventory of a hazardous substance by "just-in-time" delivery in road tankers rather than storage on site may be a transfer of risk. The added risk to those on the transportation route must be considered when making the ALARP decision but only to the extent over which the duty holder exercises control.

EXTENT OF INFORMATION PROVIDED

COMAH safety report requirements ask for demonstrations that the operator has reduced the risks to ALARP and that the establishment is being managed in such a way that this will continue to be the case. Some key points are:

- In showing that the risks are ALARP, the operator should **identify those events that dominate (safety critical events)**. A necessary precursor to deciding the appropriate depth of information is a sufficient analysis of the hazards at the establishment. This is because the level of demonstration of safety and reliability of measures needed is proportionate to the severity of the hazard. The various major accident scenarios, their likelihood, the triggering events and their potential extent and severity must be analysed in the report.
- Operators can then **derive a set of major accident scenarios that are representative of the type of scenarios that are foreseeable**. The most serious events can be clearly identified and more attention paid in the report to demonstrating the measures in place for preventing these.
- Operators can say in their safety reports that they believe certain factors are not relevant to demonstrating that they are preventing or limiting the consequences of a major accident but should explain why. The safety report should **avoid over elaboration** in making justifications, particularly where this is disproportionate to the risks involved.
- The MAPP and SMS are key elements in ensuring continuing safety at establishments but it is relatively straightforward to present the demonstration if operators **follow the structure in Schedule 2 of COMAH**.
- In the preparation of safety reports, there has been a debate about the level of detail required in describing the prevention/control/mitigation measures in place. This information is primarily linked to the third demonstration in Schedule 4 – showing that there is adequate safety and reliability in the measures provided. The CA and the Chemical Industries Association (CIA) have prepared **guidance on the amount of detail required about the measures provided**. This guidance has been distributed to CIA members and published as Part 2 Chapter 8 of the Safety Report Assessment Manual⁴, written for the guidance of CA assessors.

OUTLINE OF A COMAH SAFETY REPORT

The CA has said that it should not prescribe how operators present information and their demonstrations in their COMAH safety reports. It is clear however, in the light of experience, that some ways of presenting the information, required by Schedule 4 Part 2, are better than others in making the demonstrations, required by Schedule 4 Part 1. Some key points are listed here. The paragraph numbers in square brackets refer to the relevant paragraph of Schedule 4 Part 2.

1. SITE, ENVIRONMENT & MANAGEMENT INFORMATION

Factual information is required concerning

- a. Description of the installations, processes and main activities [paras. 2(b)(c) 3(a)(b)]. The extent of detail will depend on how important they are as a source of or contributor to a major accident risk.
- b. Description of dangerous substances on site. [Para. 3(c) provides a clear outline of the information required.]
- c. Description of the environment around the site. This will include natural and built environment as well as populations, particularly vulnerable populations and where large numbers may gather. [para. 2(a)]
- d. information on the management systems relating to major accident prevention. [para.1]. COMAH Schedule 2 outlines in some detail the type of information required.

This information is generally given in narrative text. HS/G190⁷ discusses the factual information required, but those writing reports might find the list of criteria for assessors in Part 2 Chapter 1 of the SRAM⁴ a useful checklist. The criteria in Chapter 2 cover general descriptions required and the criteria in Chapter 4 deal with management systems, supported by the type of evidence required. The descriptions of the management arrangements are key because these will show how the measures described in the safety report are to be delivered and maintained.

2. HAZARD IDENTIFICATION & MAJOR ACCIDENT SCENARIOS

The report should describe

- a. What the arrangements are for hazard identification and risk assessment for the actual and anticipated substances and processes on site.
- b. The major accident scenarios, which should include
 - i. their probability or the conditions under which they can occur [para 4(b)]
 - ii. an assessment of their extent & severity [para. 4(c)]

A table showing the links between the hazards and consequences identified and the preventive measures provided will help to demonstrate a systematic approach and could be used as a framework for developing more detailed demonstration arguments that all the measures necessary have been taken, later in the report.

This information will be reviewed at the initial stage of the CA's review and assessment of a report. The CA is looking for a systematic approach to risk assessment proportionate to the hazards and risks involved. It is important to remember that a major accident means an

occurrence from an uncontrolled development in the course of operations leading to serious danger to people (whether workers on-site or other people off-site) or to the environment.

The 'extent and severity' information is essentially who might get hurt, how badly and how many it might be? To consider this, the hazard assessment of the identified major accidents must be carried out and then a prediction of the consequences made. In practice, this means providing information on potential casualties (both on site e.g. employees, contractors, etc. and people living and working nearby) for the representative set of major accident hazard scenarios, which form the operator's risk analysis. Information on extent and severity helps to determine what depth of demonstration is needed to show that prevention, control and mitigation measures adequately control major accident risks ALARP. The presentation of the extent and severity information can be in several forms and there is HSE guidance¹⁰ expanding on what is required.

3. MEASURES TO PREVENT OR LIMIT THE CONSEQUENCES OF A MAJOR ACCIDENT

The report should describe

- a. the technical parameters and equipment used for the safety of the installations [para. 4(c)]
- b. the equipment installed to limit the consequences of a major accident [para.5 (a)]

Where a number of hazards are comparable, information about the measures in place is sufficient so long as this provides evidence that the other similar hazards are also adequately controlled. A straightforward example of where this might be applicable is for similar storage vessels. The extent and type of information required can be more readily identified if a table linking hazards & consequences to the measures provided has been prepared.

Discussion on measures to limit the consequences of major accidents is as important as those of prevention, although the CA will review the latter first. In demonstrating that the measures provided have adequate safety and reliability [Schedule 4 Part 1 para.3], there is no need to include copies of recognised standards.

- c. The measures of protection and intervention to limit the consequences of a major accident including
 - i. the organisation of the alert [para. 5(b)] and
 - ii. the mobilisable resources [para. 5(c)]

Although the on-site emergency plan should be prepared together with the safety report, the CA does not expect a copy as part of the safety report. However the systematic analysis of the hazards and consequences, along with the risk assessment described in the report should enable the report to outline the emergency arrangements to limit these, confirm that an on-site emergency plan exists and explain the principles behind the plan, linked to the hazards and consequences.

4. DEMONSTRATION ARGUMENTS

The report should show that the necessary measures have been taken to prevent and limit the consequences of a major accident

When showing that major accident risks are ALARP, the report should base its arguments on safety critical events. As discussed earlier, the depth of the risk assessment will depend on the extent and severity of the consequences and should be proportionate. Risk assessment techniques range from a simple qualitative approach to a detailed quantitative assessment. Fully quantified risk assessments, such as Quantitative Risk Assessment (QRA), are very costly and time-consuming exercises and because of this, some operators believe the effort is disproportionate to the benefits gained. One method for identifying the safety critical events, which may help to bridge the gap between qualitative and fully quantitative approaches, is to use a **risk matrix**. This type of approach has been widely used by many operators in their COMAH safety reports.

Risk is interpreted as the combination of consequence (severity) and likelihood (frequency). Both these are minimum requirements in Schedule 4 Part 2 of COMAH safety reports. A risk matrix enables this combination to be represented graphically. It is a reasonably quick and easy method to visualise the spread of risk and consequently is commonly used during (or after) hazard identification studies (such as a HAZOP), to screen hazards or to conduct a simple risk analysis. The main advantage of the matrix is its easy representation of different risk levels, and the avoidance of more time consuming quantitative analysis where this is not justified.

Consideration of costs and benefits require estimates. The basis for the risk estimate is usually qualitative, although it can be quantitative (for either the consequences or the frequencies or both). The matrix typically comprises a square divided into a number of boxes, with each box representing a different underlying risk level. Providing the risk analysis is based on cautious best estimates and the cost arguments appear realistic then the CA will use these to make a judgement on the risks involved and whether all the necessary measures have been provided.

For societal risks, if operators provide the required 'extent and severity' information they can develop a considered argument on why they believe they have reduced risks ALARP. As a benchmark, HSE regards the risk of an accident causing the death of fifty people or more in a single event as intolerable, if the frequency is estimated to be more than one in five thousand per annum. FN curves have been drawn based on this figure and some operators have calculated their societal risks, relating to these, as part of their demonstration.

5. IMPROVEMENT PLAN

Although the safety report should be able to demonstrate that an operator has taken all the necessary measures to prevent or limit a major accident, this is an onerous test and it may well be that an operator will not be able to fully confirm this at the time the report is submitted. This is more likely for those operators who are required to prepare a safety report for the first time under COMAH. Relatively straightforward measures should be dealt with before submission of the report and the report can then confirm what is actually in place, however there may well be a number of measures which are more costly or time consuming to complete. Submission of the safety report should not be delayed because of these. As a result, the CA encourages the inclusion of an Improvement Plan, which includes the action an operator proposes to take and the timetable.

It is very easy to believe that the analysis in safety reports relating to hazard identification, consequence and risk assessment and linking the measures to prevent major accidents leads to Improvement Plans that are highly complex with sophisticated solutions. This shouldn't be the case. Much of the report should come down to systematic analysis of the hazards coupled with common sense solutions. The following is a recent example of an 'Improvement Plan'. This was for a steel works and concerned the handling of carbide.

Example

"The analysis we have done in conjunction with the preparation of the safety report has enabled us to find four shortcomings:

- the floor gullies in the work area will be sealed off and plugged in order to avoid the risk of explosion in the event of a very high emission of carbide
- the ground around the unloading bay and storage silo slopes so that there is risk of water accumulation. This will be rebuilt so that the slope will provide natural run-off
- delivery by road is a stand-by routine for rail delivery. When a road vehicle is unloaded, persons doing the work must stand outdoors. In wet or snowy weather, this involves greater risk than normal delivery by rail. So we are studying the possibility of rebuilding the unloading hall, so that lorries can also be unloaded indoors
- in winter, snow and ice are carried by railway wagons into the unloading hall. Puddles form in the unloading hall, with the associated risk of explosion. We are therefore investigating whether we can remove the snow and ice from the wagons before they are admitted into the unloading hall."

CONTINUOUS IMPROVEMENT

The inclusion of an Improvement Plan is a key point. It emphasises that the preparation of the safety report and the subsequent confirmation of the CA's conclusions is not the end of the process. In many ways it is a starting point because the report

- sets the baseline for preventing or limiting the consequences of a major accident at the establishment. Operators are required to think through the hazards and risks of their operations and assure themselves they have introduced appropriate control measures.
- forms a major part of the CA's inspection for the site. This will include matters to be followed up from the report and verification that the activities actually carried out on site are carried out in the way described in the report
- enables an informed dialogue between operators and the CA to reduce or remove risks of major accidents at the establishment.

The safety report is just one part of a strategy for regulatory oversight at top tier major hazard sites. The primary benefit of a safety report regime lies in the process of preparing the report. This requires operators to think through the hazards and risks of their operations and assure themselves that they have identified the hazards and risks in a systematic way and introduced appropriate control measures. The CA is anxious to avoid the preparation of safety reports being a 'one-off' paper exercise. The dangers are that the safety report becomes an expensive exercise in which all parties involved lose a sense of proportion as to

the necessary measures to prevent major accidents and which has little if no relevance to the operation of the site on a day to day basis.

REVIEW & REVISION OF SAFETY REPORTS

COMAH does not require routine revisions to safety reports, but it does require operators to regularly review the content of safety reports

- as a result of changes to the safety management systems, establishment, installations, processes, nature and quantity of dangerous substance where these could have serious repercussions with respect to prevention of major accidents or the limitation of consequences of major accidents ('change reviews') and
- because of new facts or new technical knowledge, which in any case should be undertaken as a minimum at least every five years ('five yearly reviews'). An example of this is the guidance from HSE concerning ALARP and societal risk.

Policy is being developed on how revisions to COMAH safety reports should be prepared and handled. This will not only deal with the reviews required after 5 years but will also deal with revisions due to changes that have significant repercussions for major accidents and is likely to expect reviews and any consequent revisions of safety reports for whatever reason to be undertaken as early as possible, but taking into account overall resources and priorities.

The approach to preparing revisions to safety reports and their assessment must take account of major accident experience nationally and internationally as well as accident experience at a particular site over the period since the safety report was last reviewed. The review needs to be a robust process, which provides the public reassurance expected. The approach should also be flexible and although it needs to go over ground that has already been adequately covered in previous assessments, it need only do so to the extent of checking whether there are reasons to change the conclusions, for example because of new technology or new knowledge.

VALUE OF SAFETY REPORTS

Recent events, such as the railway accident at Ladbroke Grove, have encouraged HSE in particular to look at the value of regimes that require safety cases, safety reports or similar. These regimes are generally known as 'permissioning regimes'. As a result HSE has initiated a project to look at the value of COMAH safety reports for sites where a safety report was required by February 2002. This will be a long running project and will be reported¹¹ on as part of the Hazards XVII proceedings. HSE has also produced a discussion document¹² with a view to increasing transparency, stimulating discussion and seeking views on its approach to permissioning regimes and the fundamental principles that underpin HSE's approach.

It would be presumptuous to anticipate the conclusions of the work being done on this, however there were some telling comments by Lord Cullen in Part 2 of his report¹³ on the Ladbroke Grove accident. He accepted the view that this type of regime (railway safety case) provided 'an appropriate means of managing safety' and 'an adequate assurance of safety for independent scrutiny'. He was also convinced that for goal setting legislation such

as the Health & Safety at Work Act, there was a 'need for a framework required by legislation, within which the arrangements and procedures for the management of safety can be demonstrated and exercised in a consistent and effective manner' and that the 'framework within which management can exercise their (*sic*) responsibility for safety more effectively than under a highly prescriptive regime'.

CONCLUSION

This paper discusses some of the key problem areas that the CA has found in accepting COMAH safety reports. Some suggested ways forward in the form of an outline of a safety report have been given. This may be helpful for those operators who are currently dealing with the CA concerning their safety reports. It may also be useful for operators of sites that are new to COMAH top tier requirements. This applies to a number of sites from 30 July 2002, as a result of changes in classifications under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002, known as CHIP3 and as a result of the proposed amendments to Seveso II, which are likely to come into force in the UK in 2004.

A large amount of effort has been put into the preparation of safety reports by operators and by the CA in assessing them. This effort has been necessary to provide a good base line for the prevention of major accidents for future activities at COMAH top tier sites. The CA will expect operators to meet the levels of safety they describe in their reports and will develop this approach to ensure continuous improvement.

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