A Framework for

Major Emergency Management


Guidance Document 10 – October 2015

Prepared by the Department of Housing, Local Government and Heritage
gov.ie/housing
A FRAMEWORK FOR MAJOR EMERGENCY MANAGEMENT

GUIDANCE DOCUMENT 10

Guidance for those Principal Response Agencies that are designated as Local Competent Authorities under

S.I No.209 of 2015
European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015

October 2015
INTRODUCTION TO GUIDANCE DOCUMENT 10

“This Guidance is intended for the Principal Response Agencies who are designated as Local Competent Authorities under S.I No. 209 of 2015, European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015.”

‘A Framework for Major Emergency Management’ (2006) sets out the arrangements, by which the Principal Response Agencies will work together in the management of large-scale incidents.

Guidance Document 10 is primarily concerned with the obligations and responsibilities of the relevant Principal Response Agencies with regard to External Emergency Planning for ‘Seveso’ Upper Tier Establishments. It is requested that comments and observations that arise during exercises or real incidents are fed back to the national level. Comments should be addressed to;

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November 2022: Since this document was first published, functions of some government departments were transferred with changes to their departmental titles. Some small changes in text have therefore been made.
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## List of Acronyms

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<th>Description</th>
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<tr>
<td>CCA</td>
<td>Central Competent Authority</td>
</tr>
<tr>
<td>LCA</td>
<td>Local Competent Authority</td>
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<tr>
<td>PES</td>
<td>Principal Emergency Service</td>
</tr>
<tr>
<td>PRA</td>
<td>Principal Response Agency</td>
</tr>
<tr>
<td>HSA</td>
<td>Health &amp; Safety Authority</td>
</tr>
<tr>
<td>AGS</td>
<td>An Garda Síochána</td>
</tr>
<tr>
<td>HSE</td>
<td>Health Service Executive</td>
</tr>
<tr>
<td>LA</td>
<td>Local Authority</td>
</tr>
<tr>
<td>Framework</td>
<td>Framework for Major Emergency Management</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
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<tr>
<td>S.I.</td>
<td>Statutory Instrument</td>
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<tr>
<td>COMAH</td>
<td>Control of Major Accident Hazards</td>
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<tr>
<td>MAPP</td>
<td>Major Accident Prevention Policy</td>
</tr>
<tr>
<td>LUP</td>
<td>Land Use Planning</td>
</tr>
<tr>
<td>EEPZ</td>
<td>External Emergency Planning Zone</td>
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<tr>
<td>EEP</td>
<td>External Emergency Plan</td>
</tr>
<tr>
<td>LoC</td>
<td>Level of Concern</td>
</tr>
<tr>
<td>AEGL</td>
<td>Acute Exposure Guideline Levels</td>
</tr>
<tr>
<td>TEEILs</td>
<td>Temporary Emergency Exposure Limits</td>
</tr>
<tr>
<td>SLOT</td>
<td>Specific Level of Toxicity</td>
</tr>
<tr>
<td>SLOD</td>
<td>Significant Likelihood of Death</td>
</tr>
<tr>
<td>LD</td>
<td>Lethal Dose</td>
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<tr>
<td>DTL</td>
<td>Dangerous Toxic Load</td>
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<tr>
<td>IDLH</td>
<td>Immediately Dangerous to Life and Health Limits</td>
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<tr>
<td>TLV</td>
<td>Threshold Value Limits</td>
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<tr>
<td>OELs</td>
<td>Occupational Exposure Limits</td>
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</table>

The term “Consultation Distance” is new terminology introduced in SEVESO III, it replaces the term “specified area”. The term Specified Area was used to describe the area which is liable to be affected by a major accident at the Establishment.
1. Background

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. In Europe, a catastrophic accident in the Italian town of Seveso in 1976 prompted the adoption of legislation on the prevention and control of such accidents. The so-called Seveso-Directive (Directive 82/501/EEC) was subsequently amended in view of the lessons learned from later accidents such as Bhopal, Toulouse or Enschede resulting in the Seveso-II (Directive 96/82/EC).

In 2012 the Seveso-III (Directive 2012/18/EU) was adopted taking into account, amongst other factors, the changes in EU legislation on the classification of chemicals and increased rights for citizens to access information and justice. The Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) “COMAH Regulations”, implement the Seveso III Directive (2012/18/EU).

The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit as far as possible the consequences for human health and the environment of such accidents, with the overall objective of providing a high level of protection in a consistent and effective manner. The intention is to achieve this through tiered controls on the operators of the establishments subject to the regulations - the larger the quantities of dangerous substances present at an establishment, the more onerous the duties on the operator.

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006 and the European Union (Control of Major Accident Hazards Involving Dangerous Substances) (Amendment) Regulations 2013, which implemented the Seveso II Directive (96/82/EC), have been revoked by the European Union (Control of Major Accident Hazards Involving Dangerous Substances) (Revocation) Regulations 2015 (S.I. No. 208 of 2015) and replaced by S.I No 209 of 2015.

2. Introduction

‘A Framework for Major Emergency Management’ (2006) replaced the Framework for Coordinated Response to Major Emergency, which had underpinned major emergency preparedness and response capabilities since 1984. This document ‘A Framework for Major Emergency Management’ is referred to in this guidance as ‘the Framework’. The Framework sets out arrangements which facilitate the Principal Emergency Services in scaling-up the response required, so as to utilise the full resources of the Principal Response Agencies, and to work together in the management of large-scale incidents.

2.1. Principal Emergency Services

The Principal Emergency Services are the blue light services that respond to normal emergencies in Ireland, namely An Garda Síochána, the Ambulance Service and the Fire Service. A fourth principal emergency service, the Irish Coast Guard, is responsible for the initiation, control and co-ordination of maritime emergencies in the Irish territorial waters, harbours and coastline. The Principal Emergency Services would be the first services to respond to most major emergencies.
2.2. Principal Response Agencies

The Principal Response Agencies are the agencies designated by the Government to respond to Major Emergencies i.e. An Garda Síochána, the Health Service Executive and the Local Authorities who in regards to SEVESO are also deemed to be Local Competent Authorities under S.I. No. 209 of 2015. Each Principal Emergency Service is part of a larger Principal Response Agency e.g. the Fire Service is a Local Authority service. Due to the nature and complexity of major emergencies, the staff and resources of the wider agency are required to support the work of the emergency services.

2.3. SEVESO III Directive


- The prevention of major accidents involving dangerous substances
- The limitation of the consequences for humans and the environment of such accidents as do occur

The ‘Seveso III’ Directive is given effect in Ireland by S.I. No. 209 of 2015 – European Communities (Control of Major Accidents Hazards Involving Dangerous Substances) Regulations, 2015, referred-to in this guidance as ‘the Regulations’.

3. Application of the Regulations

The Regulations are principally directed towards the Operators of certain Establishments which are involved either in industrial activities or in the storage of dangerous chemicals.

Categories: For the purposes of the Regulations, these Establishments are divided into three categories as follows:

1. Establishments2 where the quantity of dangerous substances present3 is less than the lower threshold levels given in the Directive;

2. Establishments where the quantity of dangerous substances is above the lower threshold set in the Directive, but below the upper threshold. Such Establishments are covered by the lower tier requirements;

3. Establishments which hold quantities of dangerous substances above the upper threshold contained in the Directive. These are known as Upper Tier Establishments and all of the requirements contained within the Directive apply.

This Guide is primarily concerned with the obligations and responsibilities of the relevant Principal Response Agencies with regard to the third category of Establishments, commonly known as “Upper Tier Establishments”. The guidance is not a substitute for knowledge of the written Regulations and users will need to refer to the Regulations and use them as required.

1 O.J.L 197, 24.7.2012,p.5
2 See definitions “establishment” and “new establishment” in Regulation 2, p.6 and p.8
3 See definition “presence of dangerous substances” in Regulation 2, p.9
4. Competent Authorities

The Seveso Directive places obligations on all member states of the European Union, including Ireland. These obligations include the nomination of a single Central Competent Authority (CCA) as well as Local Competent Authorities (LCAs) in the areas of Policing, Fire, Health, Environmental Protection, Planning and Harbour Control.

The Health & Safety Authority (HSA) has been nominated as the Central Competent Authority (CCA) for Ireland\(^4\) and, as such, is charged with the enforcement of the Regulations.

An Gárda Síochána (AGS), the Health Service Executive (HSE), the Environmental Protection Agency (EPA), Planning Authorities\(^5\), companies established pursuant to Section 7 of the Harbours Act 1996\(^6\) and the relevant Local Authorities (LA) are each designated (by the appropriate Minister of Government) under the Irish regulations as a Local Competent Authority (LCA)\(^7\). Consequently, there are typically six LCAs for any particular Upper Tier Establishment. There may be more where an Upper Tier Establishment may have external effects in the area of operation of one or more adjoining Local Authorities. This guidance is particularly intended to assist LCAs in the process of external emergency planning for Upper Tier Establishments in their areas. Where the introduction of SEVESO 111 affects the level or tier status of an establishment, the change will be notified to the appropriate CLAs by the CCA.

5. Relevant Obligations on Operators

The Operator\(^8\) of every Establishment which comes within the scope of the Directive must notify the CCA of that fact\(^9\) and must establish and maintain a safety management system\(^10\) to be detailed in a ‘Major Accident Prevention Policy Document’\(^11\) (MAPP) as a pre-requisite to operating a regulated Establishment.

In addition, the Operator of each Upper Tier Establishment must provide to the CCA a written Safety Report\(^12\), which must include a description of the activities and processes involved, the hazardous substances present, the major accident risks and the preventive measures in place. All likely major accident scenarios, the consequences of such accidents and the emergency planning process on-site must also be described. One of the stated purposes of Safety Reports is ‘supplying information to enable the external plan to be drawn up in order to take the necessary measures in the event of a major accident’\(^13\).

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\(^4\) Regulation 4 (1) (a)
\(^5\) See definition “Planning Authority” and “Planning and Development Act” p.9, and “Public Authority” 5 (f) p.12
\(^6\) Regulation 5 (c), p.12
\(^7\) Regulations 4 (b) p.11
\(^8\) See definition of “Operator” in Regulation 2, p.8
\(^9\) Regulation 8, p.14
\(^10\) Regulations 10 (7), 11 (a), 12 (b) and Schedule 2
\(^11\) Regulation 10, p.16
\(^12\) Regulation 11, p.18 and Schedule 3, p.53
\(^13\) Schedule 3, p.53
6. The Specified Area / Consultation Distance

The Consultation Distance\textsuperscript{14} is the area which is liable to be affected by a major accident at the Establishment. The term “Consultation Distance” is new terminology introduced in SEVESO II, it replaces the term “specified area”. The consultation distance is normally determined by the Operator with the agreement of the CCA using a ‘probability’ calculation but, in the absence of agreement, it is determined by the CCA. The probability calculation is based on the likelihood of an emergency and its effect on the general population, orientated towards land use planning, not responders.

The Operator’s Safety Report must include an assessment of the extent and severity of the consequences of each identified major accident possibility, including maps to a scale and quality agreed with the CCA and/or images and/or descriptions of areas which are likely to be affected (i.e. the consultation distance).

7. Emergency Planning for Upper Tier Establishments

The Operator of each Upper Tier Establishment is required to prepare an internal emergency plan for the Establishment in consultation with (among others) each LCA in whose functional area the Establishment is situated\textsuperscript{15}. The introduction of SEVESO II regulations may change the status of some of the current Lower Tier sites bringing them into the Upper Tier bracket. This change in status will result in the Operator been obliged fulfil all the obligations associated with the move into the upper tier status as dictated by the SEVESO Regulations, including formulating an Internal Emergency Plan in consultation with (among others) each LCA in whose functional area the Establishment is situated.

In relation to an Upper Tier Establishment, each relevant LCA is required to prepare an external emergency plan for action outside the Establishment which shall include arrangements for co-ordinating off-site action and resources\textsuperscript{16}. It is recommended that a pre-incident planning form be completed in conjunction with the LCAs during the formulation of the External Emergency Plan. An example of a pre-incident planning form can be viewed in Appendix C, p.32.

The common objectives of internal and external emergency plans are as follows:

- Containing and controlling incidents so as to minimise the effects and to limit damage to people, the environment and property;
- Implementing measures necessary to protect people and the environment from the effects of major accidents;
- Communicating necessary information to the public and to the services or authorities concerned in the area and;
- Providing for the clean-up and restoration of the environment following a major accident.

When a LCA has been notified by the CCA of the existence of an Upper Tier Establishment in its functional area, or the change in status of an existing establishment from Lower to Upper tier, the LCA should commence the external emergency planning process in relation to that particular site as soon as is reasonably practicable, bearing in mind the regulatory time-

\textsuperscript{14} Regulation 2.p.5.
\textsuperscript{15} Regulation 15.p.21
\textsuperscript{16} Regulation 16 (1).p.21
frame for the process set out in Regulation"\(^{17}\). The LCAs should at an early stage report to the CCA any non-compliance issues by the Operator and review the situation periodically with the CCA contact point. The establishment of a National Contact point within the CCA could expedite the flow of the relevant information to the relevant LCA, reducing any possible delays in the notification process. It would be beneficial for the SEVESO Sub Group to hold annual meetings with the National Contact point from the CCA, where an exchange of relevant information/data could be conducted.

‘Seveso’ planning groups have been established in all Major Emergency Management regions where there are Upper Tier Establishments. These groups function as a sub-group to the Regional Working Group as detailed in ‘the Framework’ where each of the relevant LCAs is represented. Administration of external emergency planning is a function of this group.

So far as is practical, the group of relevant LCAs in the case of any particular Upper-Tier Establishment should agree on a joint approach to the preparation of the external emergency plan. Where possible, they should agree on one of them taking a lead role in the work of preparing the plan, to the point where it is completed and brought into effect.\(^{18}\). In an area with a number of Upper Tier Establishments, the ‘lead LCA’ role should rotate amongst the relevant PRAs. A Cross Border Emergency Management Working Group comprising of individuals from both the PRAs and their counterparts from Northern Ireland can also be utilised to address any Trans-boundary issues regarding SEVESO.

8. Consultation

This should be a joint activity by all of the relevant LCAs who should:

- Consult with each other concerning the Upper Tier Establishment and form the sub-group recommended in Section 7 above;
- Consult with and establish liaison with the appropriate CCA office;
- Consult with the Operator and visit and inspect the Establishment;
- Consult, where relevant, with the EPA. If environmental damage is a possibility from loss of containment, fire/explosion or from measures necessary to contain an incident (e.g. application of fire-fighting foam in significant quantities), the EPA should be consulted.

9. Necessary Information

In order to prepare an external emergency plan the following will be required:

- The Operators on-site emergency plan;
- The Operators package of information, as distributed to the public in the Consultation distance;
- Mapping, drawings at a scale and quality agreed with the LCA, images and descriptions of the Establishment and premises/installations on the Establishment;

\(^{17}\) Regulation 16 (2),p.22

\(^{18}\) Note that Regulation 16 (16),p.24 requires that external emergency planning takes into account the need to facilitate enhanced co-operation in civil protection assistance in major emergencies

\(^{19}\) Whereas the Regulations require each relevant LCA to prepare an external emergency plan for each Upper Tier Establishment, they do not preclude the common ownership and joint preparation of a single plan for each establishment. Such a plan will meet the requirements of the Regulations where it contains all the elements of planning that would otherwise be distributed over the separate plans of the relevant LCAs.
- Adequate information on the activities and inventories that give rise to the major accident scenarios;
- The major accident scenarios for the Establishment and precise description of ‘domino effect’ possibilities, if present;
- Details of other relevant hazards and risks on the site;
- Details of all mitigating resources available on the site;
- Occupancy details, including contractor attendances, day maxima and shift minima
- Mapping, drawings at a scale and quality agreed with the LCA, images and descriptions of the Consultation Distance including adequate detail of any/all potential exposure of persons, whether living, working, transient, institutionalised or otherwise vulnerable;
- Adequate description of the environment in the Consultation Distance and exposure/vulnerability of elements of the environment to risk of damage;
- Details of persons to be contacted in the event of an emergency;
- Due consideration given by the LCAs in liaising, developing and communicating pre incident planning procedures and enhancing resilience in the event of an incident in the Consultation Distance to schools and other establishments deemed by the LCA to be at risk.

The foregoing should normally be obtained from the Operator’s Safety Report after it has been submitted to and examined by the CCA under Regulation 21(4). Alternatively, an authorised officer of a LCA may require and receive any or all of the information directly from the Operator. The planning sub-group should then study the Consultation Distance, particularly taking note of the distribution of population and movements of persons. Particular study may be required of places of work, neighbouring manufacturing installations, schools, vulnerable institutions, residents and key/critical elements of national or local infrastructure.

LCAs are NOT required by the Regulations to take any responsibility for the investigation of the details of a Safety Report. This is the responsibility of the CCA. The regulations empower the CCA to require an Operator, at his/her own expense, to examine and rectify any inadequacy of a Safety Report in content, detail or method of assessment.

10. External Emergency Planning Zone

The HSA being the Central Competent Authority (CCA), has set out how the Consultation Distance should be determined for Land Use Planning purposes (LUP). The CCA recognises that an emergency planning zone might be different from the Consultation Distance in certain circumstances.

The LCAs, referred to as the Principal Response Agencies (PRAs) in the MEM Framework documentation (2006), may consider defining an area wider than the Consultation Distance, if appropriate. The External Emergency Planning Zone (EEPZ) is a name given to an extended

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20 Regulation (26), p.36 Access to information and confidentially
21 Regulation 16(9), p.23, notification to LCAs of the designation of a site as upper tier should come from the CCA ‘as soon as practicable’ after it has received and examined the operator’s safety report. In many cases, the notification precedes the availability to the CCA of the operator’s finalised safety report. However, ‘un-examined’ information that is received directly from the operator can be used to assist emergency planning for the upper tier establishment in question. This guidance advises the relevant LCAs to consult with the CCA in such cases and move external emergency planning forward in consultation with the CCA. Such consultation should be recorded.
22 See Regulation 22, p.29 Note however, that a LCA is not similarly authorised to address a situation where the information provided by an operator under Regulation 16 (9) is thought to be inadequate in content, detail or method of assessment.
area defined in the External Emergency Plan (EEP) which will be greater than the Consultation Distance.

It is considered that the EEPZ is considered to be an advantage in a variety of circumstances, such as:

- When the Level of Concern (LoC) used to determine the Consultation Distance accepts that a 1% mortality rate or higher might apply or where highly susceptible people are not accounted for, should the worst-case scenario arise.

- Some toxic release scenarios, for example, result in pungent odour a significant distance downwind and persons could experience notable discomfort, irritation and or certain asymptomatic non-sensory effects. However, the effects are not disabling, are transient and are reversible upon cessation of exposure. However, pre-planned public information and reassurance is necessary.

- Where any other routine emergency planning activities consequently inform the LCAs of “knock-on” or additional threats to public safety beyond the limits of the Consultation Distance.

The LCAs will generally use a more conservative LoC to determine the EEPZ, in comparison to the Consultation Distance.

10.1. Potentially Toxic Plumes
In the event of a catastrophic release at an Upper Tier Seveso site the generation of a toxic cloud is possible. The CCA approved approach within the Republic of Ireland is to determine the Consultation Distance limits consideration to acute effects only. There is also a LoC for the cohort of people beyond those subjected to the acute effects. To select the appropriate level of concern or threshold for the protection of public health in the event of a catastrophic release, the parameters to consider, include;

- The characteristics of the population potentially exposed
- The nature of the health concerns
- The likely time period of exposure

As with any modelling process, there are a considerable number of variables. For the comparison between the EEPZ and the Consultation Distance to be reasonable, an identical modelling regime must be used. The exact same modelling is required to determine the appropriate LoC by the “Operator”. The “Operator” should be asked to produce modelling using the same modelling software and parameters used to determine the Consultation Distance replacing probits with the LoC determined by the LCAs see Fig.1.p, 8.
**DTL** Dangerous Toxic Load

**IDLH** Immediately Dangerous to Life and Health Limits

**LD** Lethal Dose, $L_{D_{50}}$, refers to the lethal dose which will kill 50% of the population within the affected area within a specified period of time.

Note: that a 10 minute exposure and a 10 minute release are not the same thing; the **10** min AEGL 3, AEGL 2 and AEGL 1 should be examined as a primary means to delimit the hot, warm and cold zones respectively. However, other exposure times should be included in any analysis of major accident scenarios listed in the operator’s safety report. At a minimum, the **10** min AEGL 3, AEGL 2 and AEGL 1 should be examined to delimit the hot, warm and cold zones respectively. A 10 min catastrophic release might represent a scenario which may be a case worse than a release over a prolonged period of time. Further information on mapping Levels of Concern for External Emergency Planning Zones can be seen in Appendix D, p.44.

Where hazardous substances are concerned, concentration of exposure is more significant than time. A shorter exposure time to a higher concentration will usually result in more severe effects than exposure to a lesser concentration over a longer time period.
At AEGL-1, it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation and or certain asymptomatic non-sensory effects. However, the effects are not disabling, are transient and reversible upon cessation of exposure. Careful consideration should be given as to whether the AEGL-1 mapping needs to be included with the public section of the EEP.

The reason for using the same values for the parameters utilised in determining the EEPZ (Also used for determining the Consultation Distance), is to retain the same process and not to introduce another set of variables. Wind speed and direction are the variable parameters that will have the greatest impact.

It would be for each LCA, individually or collectively, to determine, based upon the worst case scenario identified in the Safety Report, re: how to “standardise” as many of the variable parameters as possible. As D/5 weather/stability conditions occur for about 80% of the time, this should be adopted as “standard” weather, see weather stability Classes, 10.2. Calm still weather conditions can produce a complex scenario should a catastrophic release occur, therefore F/2 weather conditions should also be modelled for EEPZ determination purposes.

Although wind direction is a very significant factor which will determine the population potentially exposed, it is unwise to set out a plume based on upon single wind direction only.

Modelling, generally does not, account for topography or terrain steering effects.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Parts per million (ppm)</th>
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<tbody>
<tr>
<td></td>
<td>10 Min</td>
</tr>
<tr>
<td>AEGL 1</td>
<td>XXX</td>
</tr>
<tr>
<td>AEGL 2</td>
<td>XXX</td>
</tr>
<tr>
<td>AEGL 3</td>
<td>XXX</td>
</tr>
</tbody>
</table>

Table 1. AEGL Exposure Table

Model for both weather conditions; D5 AND F2 (Pasquill Stability Classes) Use; South West prevailing winds.

10.2. Weather Stability Classes

Weather conditions in hazard studies are generally described in terms of an atmospheric stability condition and a wind-speed e.g. D5 indicates Pasquill stability class D with a wind speed of 5 meters per second (m/s). The Pasquill stability class (see table 2) is a measure of the air turbulence which in turn is influenced by the level of solar radiation. The level of air turbulence influences the rate at which gas clouds dissipate to safe levels as they drift away from the source of the release.

<table>
<thead>
<tr>
<th>Wind at 10m height</th>
<th>Solar Radiation</th>
<th>Night time cloud cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strong</td>
<td>Moderate</td>
</tr>
<tr>
<td>&lt;2</td>
<td>A</td>
<td>A-B</td>
</tr>
<tr>
<td>2-3</td>
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<td>5-6</td>
<td>C</td>
<td>C-D</td>
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<tr>
<td>&gt;6</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>

Table 2. Pasquill stability class
The Classes A-F Determine the stability is as follows

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Extremely Unstable</td>
</tr>
<tr>
<td>B</td>
<td>Moderately Unstable</td>
</tr>
<tr>
<td>C</td>
<td>Slightly Unstable</td>
</tr>
<tr>
<td>D</td>
<td>Neutral</td>
</tr>
<tr>
<td>E</td>
<td>Slightly Unstable</td>
</tr>
<tr>
<td>F</td>
<td>Moderately Stable</td>
</tr>
</tbody>
</table>

Table 3. Meteorological conditions that define the Pasquill stability classes

10.3. Overpressure

In determining the effect of overpressure for the EEPZ, 0.010 barg [typical pressure for glass breakage] is recommended as the LoC for the outer limit of the EEPZ. Distances are shown in Table 1.

<table>
<thead>
<tr>
<th>Overpressure - barg</th>
<th>Distance in meters</th>
<th>Expected Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>60</td>
<td>Lethal / High Damage</td>
</tr>
<tr>
<td>0.1</td>
<td>120</td>
<td>Partial Demolition</td>
</tr>
<tr>
<td>0.01</td>
<td>450</td>
<td>Minor Glass Breakage / Non Cutting Missiles</td>
</tr>
</tbody>
</table>

Table 4. External Emergency Planning Zone (Distance in meters)

In determining fragment effects on humans, it is useful to distinguish between “cutting” and “non-cutting” fragments. “Cutting” fragments penetrate the skin, whereas injuries from “non-cutting” fragments result from contact pressure at impact.

10.4. Thermal Radiation

Unlike toxic LoCs, no well-defined guidelines or standards currently exist to evaluate the thermal radiation hazard. Industry generally uses default thermal radiation values (in kilowatts per square meter) that are based on a review of several widely accepted sources on thermal radiation;

<table>
<thead>
<tr>
<th></th>
<th>Thermal Radiation Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10 kW/m²</td>
</tr>
<tr>
<td>2.</td>
<td>5 kW/m²</td>
</tr>
<tr>
<td>3.</td>
<td>2 kW/m²</td>
</tr>
</tbody>
</table>

Table 5. Default Thermal Radiation Values

The thermal radiation effects that people experience depend upon the length of time they are exposed to a specific thermal radiation level. Longer exposure durations, even at a lower thermal radiation level, can produce serious physiological effects. The pathological effects of thermal radiation on humans are most relevant in the immediate vicinity of an incident. Where a thermal dose results in injury and illness it is unlikely that the distance from the heat source would be greater that the consultation distance.

Further information regarding Stability Indices can be found at; [http://www.met.ie/climate/stability-indices.asp](http://www.met.ie/climate/stability-indices.asp)
Noting that there is a difference between thermal radiation intensity and thermal dose [which includes a time factor] the following should be considered:

<table>
<thead>
<tr>
<th></th>
<th>Radiation Intensity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>1.5 kW/m²</td>
<td>Is the threshold of pain</td>
</tr>
<tr>
<td>5.</td>
<td>1.2 kW/m²</td>
<td>Is the radiation received from the sun at noon in Summer.</td>
</tr>
<tr>
<td>6.</td>
<td>1 kW/m²</td>
<td>Is a reasonable level to consider as a LoC for thermal radiation for the determination of the external emergency planning zone, where it is not possible or practical to determine the duration of the exposure.</td>
</tr>
</tbody>
</table>

Table 6. Radiation Intensity

11. Producing the Plan
The planning sub-group should then proceed to:
- Prepare a draft plan for consultation and comment by the relevant LCAs;
- After due amendment, the draft plan should be submitted for comment to the Operator, the CCA and where relevant, to the Environmental Protection Agency;
- After any further amendment, the final draft should be prepared and made available for public consultation. The recommended time frame for public consultation is 4 weeks for both “New Sites” and for existing sites which are updating their External Emergency Plans. The final draft document should be abridged for public consultation only to the extent that personal contact details and other such information is protected (i.e. excluded);
- Consider any issues arising and complete the plan;
- Distribute the plan and bring it into effect by a formal launch at a specified date and time;
- Test the plan appropriately and evaluate any deficits of equipment, training or other resources that are identified;
- Review and test the plan at intervals of not exceeding 3 years;
- Revise and up-date the Plan as necessary.

The External Emergency Plan should be co-ordinated with the local Major Emergency Plan(s), since in certain circumstances it may be necessary to also activate the Major Emergency Plan(s). A SEVESO “Planning Roadmap” should be prepared by the LCAs, giving a guide to the formulation of any planning strategy regarding SEVESO sites within their area. A sample of a Roadmap or Planning cycle can be seen in Appendix D, p.43. The timescale detailed in the Roadmap will vary in length depending on various elements including the amount of sites present in their functional area etc. The External Emergency Plan should be signed off by Senior managers from the LCAs.

12. External Emergency Plan – Content and Format
A recommended structure for a joint External Emergency Plan is set out below. The plan should include the following records before the introduction:

(i) Record of Issues and Amendments;
(ii) Record of Test/Exercise/Review;

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24 An approach to public consultation is recommended in Appendix A, p.14
25 Section 17, p.24 of S.I. 209 No. of 2015.
(iii) Record of Endorsement and/or Promulgation;
(iv) Note/Record of the version of the On-Site Emergency Plan for <The Site Operator> that is currently in operation.

Introduction
1. Activation
2. Key Actions
3. Establishment Site Information
4. External Information
5. Informing the Public in Advance
6. Warning and Informing in an Emergency
7. Media Liaison Plan
8. Recovery
10. Schedule of Appendices

A template for an External Emergency Plan is included in Appendix B, p.19. However, the actual plan in each case may vary from the template, depending on the nature and location of the Establishment involved, as well as on the arrangements for activation, command, control and co-ordination agreed locally by the relevant LCAs.


The term ‘major accident’ is used in the EEP template to reflect its usage and definition in the Regulations. Note that a “major accident” at an Upper Tier Establishment may not necessarily be of sufficient impact on the capabilities of the Emergency Services to require the declaration of a Major Emergency under the Framework. Because the EEP will normally be activated by the Site Operator in the case of a “major accident” at an Upper Tier Establishment, the ETHANE pneumonic is used. The Site Operator cannot declare a Major Emergency under the Framework and should not use the METHANE format.

The term ‘internal’ is used in accordance with its use in Regulation 15, p.21 to mean ‘inside the Establishment’. The term ‘external’ is used in accordance with its use in Regulation 16, p.21 to mean ‘outside the Establishment’. The term ‘On-site’ is used only to refer to the ‘On-site Co-Ordinator’ in accordance with the Framework. Users should ensure that there is no confusion of terminology between ‘On-Site’ as referred to in The Framework and ‘internal’ or ‘inside the Establishment’ as used in the Regulations. Clearly, depending on the circumstances of the emergency, the ‘On-site Co-Ordinator’ may be located inside OR outside the Establishment.

14. Administration of the Plan

Administration of an External Emergency Plan should be a function of the ‘Seveso’ planning sub-group. This sub group maybe referred to as the “COMAH Group” which is a sub group of the Regional Working Group, as recommended in Section 7 of this guidance.

See Regulation 2,p.8 “Major Accident”
15. Public Communication

The external emergency plan should be published by each LCA as a ‘controlled document’ that can be viewed at any one of a published list of locations, typically at the headquarters of each relevant LCA and care of the Operator at the Establishment. Members of the public should be permitted to view a copy of the ‘controlled document’ version of the plan. The Plan will be available for Public consultation for a period of 4 weeks for both “new sites” and for sites that are having their External Emergency Plans updated. The plans availability for review and comment may also be made available through the use of Social Media by the LCAs. A full list of the requirements on the LCAs can be viewed in Appendix A, p.16.

Introductory text in an External Emergency Plan should set out these arrangements, and instruct individual LCAs and agencies, listed as responders in the plan, to print and distribute sufficient copies of the plan for personnel within their organisation. Introductory text should also make it clear that copies downloaded or photocopied are only controlled and guaranteed valid up to and on the date of copy.

16. Care and Custody of the Operators Safety Report

To facilitate the LCA in the preparation of External Emergency Plans, Regulation 16 (2) requires the Operator to provide the LCA "with such information as may reasonably be required for that purpose including the nature, extent and likely effects inside and outside the relevant establishment of possible major accidents". This information will normally be provided from or in the Operator’s Safety Report27.

It is recommended that the lead LCA request the Safety Report from the Operator. The LCA should keep and store the document safely and, once all relevant information has been obtained, it should be returned to the Operator. It is recommended that a simple record be maintained by the LCA, with details of the dates and circumstances of the handover of the document.

It is strongly recommended that the Safety Report be requested in hard copy, rather than in electronic format. Individual objects from the report, such as layout drawings, maps or specific portions of information or data, may be requested from the Operator in electronic form, for inclusion in the External Emergency Plan.

17. Warning and Informing the Public

The operator of an upper-tier establishment shall ensure that all persons likely to be affected by a major accident originating at that establishment receive regularly and in the most appropriate form, without having to request it, clear and intelligible information on the safety measures and requisite behavior in the event of a major accident28. The establishments safety report shall also be made available to the public on request (subject to regulation 25)29.

The engagement between the Operator and the LCA can be in the form of preparing and updating when required a pre incident planning process for vulnerable populations including

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27 In Schedule 3, p.53, a stated purpose, amongst others, of safety reports is to supply “information to enable the external emergency plan to be drawn up in order to take the necessary measures in the event of an accident”

28 Regulation 25 (4)

29 Regulation 25 (3) (B)
schools and crèches located inside the Consultation Distance. This can involve formulating an effective evacuation plan to include measures deemed necessary through discussion between the schools and the Operator such as a text alerting system. Consideration should also be given by the LCA in engaging in pre planning with schools and crèches in the proximity of the Consultation Distance with a focus on alerting and evacuation procedures to avoid traffic congestion issues in the event of an incident which may impact on the emergency response.

18. Testing External Emergency Plans

Regulation 17, p.24 sets out the mandatory time-line for testing and reviewing External Emergency Plans. Exercise planners should avail of the relevant guidance under the Framework, which is Guide 4 ‘A Guide to Planning and Preparing Exercises’.

Consideration should be given to the inclusion (among the stakeholders to be consulted and involved in the testing) of the Operator, the CCA, the EPA and the public/local community, including colleague industrial activities in the Consultation Distance.

An External Emergency Plan should normally be tested before the plan’s effective date. Where circumstances do not permit that, the test should take place as soon as practicable after the plan’s effective date. The CCA and the EPA should be invited to attend the testing of the External Emergency Plan.

It is recommended that the first test should be conducted in table-top format, giving an opportunity to the stakeholders to benefit from direct communication and networking around the challenges set by the exercise organisers. In every test/exercise the scenario(s) and scenario developments must be confined to the scenarios set out in the Operator’s Safety Report. Later exercise formats should be determined as the relevant planning group deem it best for the Establishment and circumstances concerned.

The objectives of the test/exercise should include establishing that the plan would, as a priority, provide effectively for:

- Key initial actions and further strategies to mitigate the emergency;
- Key recovery measures in relation to the emergency site, the environment and the community.

19. Debriefing and Reporting

It is important to ‘close the loop’ in relation to each testing exercise or event, with debriefing as appropriate, and a report by the Seveso Planning Sub Group (or separate reports if/where relevant by individual LCAs concerned) via the Regional Working Group on Major Emergency Management (RWG) to the Regional Steering Group (RSG). The report should carefully set out the issues identified, indicating the reasons for the existence of the same and the lessons learned.

The RSG should ensure the appropriate dissemination of the report, including the follow up actions that are necessary, with a clear indication of who is/are responsible for each one. Where appropriate, the RSG should arrange for the onward reporting of issues to other agencies or authorities, such as The National Steering Group on Major Emergency Management, LCA management, the CCA, the EPA or the Operator. Where necessary, a clear action strategy for the resolution or remediation of any issues, problems or deficits identified, with the reasons specified (eg, non-compliance with this legislation or other legislation), should be recommended in the exercise/event report.
The test/exercise may highlight deficiencies in the External Emergency Plan itself. Where a plan is amended thereafter, the amendments should be inserted in accordance with the version control procedures associated with the plan, and notified to all stakeholders.

The LCAs must submit a report to the CCA on their activities under Regulations 17 (5) within 2 months of the end of each calendar year. The CCA will provide guidelines to the LCA’s on the information that is to be included in the report.\(^{30}\)

\(^{30}\) Regulation 17 (5), p.25
Appendix A

Guidance on Public Consultation Regarding an External Emergency Plan

Overview

Local Competent Authorities (LCA) are required by the Regulations\(^{31}\) to consult with the public while preparing an External Emergency Plan. It is recommended that LCAs should prepare a version of the draft plan specifically for public consultation. The LCAs can achieve this through an advertisement in local and the national press. The public should be invited to visit the offices of the LCA and examine this document and comment on it as appropriate. A period of 4 weeks for both “new sites” and for existing sites where the External Emergency Plans are been updated shall be given by the LCA for Public Consultation. The use of LCA web sites and social media should also be considered in the consultation phase. While transparency in the public consultation process is paramount, LCAs disseminating plans to the public should be mindful of private information, i.e. contact details of persons named in the plan.

The following template elements are included:

- A template for a public notice/media advertisement;
- A template for an information leaflet - copies of which should be included in the pack placed in each centre where the plan may be viewed by the public. The public are permitted to take a copy of the leaflet away, but not the plan or any part of it, and they are not permitted to copy the plan;
- A template for a brief guide for staff in the viewing centres as to how to conduct a consultation, if required by a member of the public. This should also be included in the pack at each viewing centre.

Template for Public Notice/Media Advertisement

<table>
<thead>
<tr>
<th>AN GARDA SIOCHÁNA, THE HEALTH SERVICE EXECUTIVE, AND (the relevant Local Authority)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Notice Under European Communities (Control of Major Accidents Involving Dangerous Substances) Regulations 2006</td>
</tr>
</tbody>
</table>

An Gárda Síochána, the Health Service Executive and (the relevant Local Authority) are each required by the above mentioned regulations to prepare plans to deal with effects off-site and to assist, where relevant, with the emergency response on-site in the event of a major accident at:

<Name and address of The Site Operator>
A draft copy of the External Emergency Plan for <The Site Operator> will be available for examination for a period of 4 weeks between 9.30am and 4.30pm from (date) until (date) for both “New Sites” and for the updating of existing sites, excluding weekends at the following locations:

1. Designated office of the Health Service Executive (address)
2. An Garda Síochána Divisional Headquarters (address)
3. Garda District Headquarters (address)
4. Local Authority Fire and Rescue Service, Fire Station (address)
5. Elsewhere as determined by the relevant LCAs

Submissions and observations with respect to the proposed external emergency plan may be made in writing to <name and address of planning group> or by emailing <address> not later than 5p.m. on <date>

Template for an Information Leaflet

Introduction
An Gárdh Síochána, the Health Service Executive, and <name the relevant Local Authority> are each required by the European Communities (Control of Major Accidents Involving Dangerous Substances) Regulations, S.I. 209 of 2015, to prepare a plan to deal with effects off-site and to assist, where relevant, with emergency response on-site in the event of a major accident at <The Site Operator>. A draft joint External Emergency Plan has now been prepared for <The Site Operator> and is available here for inspection.

The External Emergency Plan
Following an introduction, the External Emergency Plan is made up of ten sections which are briefly described below. A series of Appendices, including supporting information, maps, plans, materials safety data sheets, etc., completes the document.

- Section 1, explains how the plan is to be activated and by whom it should be activated;
- Section 2, sets out the key actions to be carried out by the principal responding agencies;
- Section 3, sets out necessary information on the Establishment site;
- Section 4, sets out necessary information on the area outside the Establishment;
- Section 5, sets out procedures for informing the public in advance of an emergency at the Establishment;
- Section 6, sets out procedures for warning and informing the public while an emergency is under-way;
- Section 7, sets out the Media Liaison Plan;
- Section 8, sets out the plan for recovery;
- Section 9, is a list/directory of contacts for the distribution and implementation of the plan;
- Section 10, is a list/schedule of the Appendices to be attached to the plan.
The plan also contains a contacts directory (the only part that is distributed on a ‘need to know’ basis, in order to protect privacy) and a number of Appendices.

Queries or submissions regarding the plan should be made in writing to the address given below. Please feel free to write if you have any queries or wish to make a submission about the External Emergency Plan for <The Site Operator>.

An Gárdai Síochána, the Health Service Executive and <name the relevant Local Authority> will endeavor to deal with any queries raised.

You may contact us at: <Name, address, telephone number, fax number, email address and web address for planning group>

Template for a Brief Guide for Staff in the Viewing Centres
The External Emergency Plan for <Site Operators> is available for viewing in:

1. An Garda Síochána Divisional Headquarters <address>
2. Garda District Headquarters <address>
3. Designated office of the Health Service Executive <address>
4. Local Authority Fire and Rescue Service, Fire Station <address>
5. Elsewhere as determined by the relevant LCAs

Dates for viewing are from <date> to <date>. Times for viewing are from 9.30am until 4.30pm.

Queries or submissions regarding the plan should be made in writing to the <name of the planning group> as specified on the information leaflet and public notice advertised in <name of the papers>

The draft plan is not available for photocopying or removal.

An information leaflet giving an overview of the plan is available for circulation.

Queries from the Media should be directed to

An Gárdai Síochána: <name and contact details>
HSE (Area): <name and contact details>
Local Authority: <name and contact details>

Further information on the above, if required, may be obtained from:

<Name, address, telephone number, fax number, email address and web address for planning group>
Appendix B

Template for an External Emergency Plan

Recommended Structure for a Joint External Emergency Plan

Cover page

Contents page (Pagination to be applied on completion)

(v) Record of Issues and Amendments/Senior Management from LCA signatures
(vi) Record of Test/Exercise/Review
(vii) Record of Endorsement and/or Promulgation
(viii) Note/Record of the version of the On-Site Emergency Plan for <The Site Operator> that is currently in operation

Introduction

1. Activation
2. Key Actions
3. Establishment Site Information
4. External Information
5. Informing the Public in Advance
6. Warning and Informing in an Emergency
7. Media Liaison Plan
8. Recovery
10. Schedule of Appendices

Appendices
Introduction

This is the External Emergency Plan for;

<The Site Operator>

The plan has been prepared, in accordance with the requirements of the Seveso III Directive, by the relevant Local Competent Authorities, i.e.

An Gárda Síochána

The Health Service Executive

<The relevant Local Authority>

This plan should be read (and implemented) in conjunction with:

The On-Site Plan of <The Site Operator>

The Major Emergency Plans of <List of the relevant LCAs>

In addition to other sources of information, responding organisations / agencies should refer to the following details when responding to a major accident at <The Site Operator>.

Section 1 ; Activation & Stand down

When Will this Plan be Activated?

This Plan will be activated without delay when:

A major accident\(^{32}\) occurs; or

An uncontrolled event occurs which could be reasonably expected to lead to a major accident.

A major accident\(^{33}\) is an occurrence (including, in particular, a major emission, fire or explosion) resulting from uncontrolled developments in the course of the operation of <The Site Operator>, leading to serious danger to human health or the environment, immediate, or delayed, inside or outside the establishment, and involving one or more of the following dangerous substances:

<List of dangerous substances>

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\(^{32}\) Note that a "major accident" at a Seveso Upper Tier Establishment may NOT NECESSARILY be of sufficient impact on the capabilities of the emergency services to require the declaration of a Major Emergency under the Framework. The Site Operator should NOT use the METHANE format.

\(^{33}\) See Regulation 2, p.8 “major accident”
Responsibility for Activating this Plan

The following personnel of <The Site Operator> are authorised to activate this plan:

<Job Title(s) of company personnel who can activate the Plan>

How this Plan will be Activated?

A member of <The Site Operator> personnel will make a ‘999/112’ telephone call to each of the following emergency services:

- Fire Control <address>
- Garda Divisional HQ / Communications Centre <address>

Garda Divisional headquarters will then alert the other responding agencies as follows:

- Ambulance Control <address>
- <Details of other agencies, as appropriate>

Information Provided

When making each ‘999/112’ telephone call, <The Site Operator> must provide the following information to each emergency service:

- Site name and address
- The fact that <The Site Operator> is a ‘Seveso’ Upper Tier Establishment and that the emergency requires activation of the External Emergency Plan

Details of the Incident using ETHANE format

<table>
<thead>
<tr>
<th>E</th>
<th>T</th>
<th>H</th>
<th>A</th>
<th>N</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact Location</td>
<td>Type of Incident</td>
<td>Hazards</td>
<td>Access</td>
<td>Number of casualties</td>
<td>Emergency services</td>
</tr>
<tr>
<td>Specific building or installation on site</td>
<td>Fire, explosion, chemical incident, etc.</td>
<td>Current and potential</td>
<td>From which direction to approach</td>
<td>And their type/severity</td>
<td>Present and required</td>
</tr>
</tbody>
</table>

If it appears to one or more of the emergency services that a major accident has occurred at <The Site Operator> and < The Site Operator > personnel have not activated this plan, then that agency should activate this plan as set out above for < The Site Operator >

On activation of the plan the Emergency Services will implement their key actions as outlined in Section 2.
How this Plan will be Stood Down?

Where a Major Emergency has been declared under the Framework for Major Emergency Management, the decision to stand down the incident at the site, and to announce an “All Clear” to the public, will be taken by the On Site Co-ordinator, in consultation with the other Controllers of Operations at the site and the Local Co-ordination Group.

Where a Major Emergency has not been declared, the decision to stand down this External Emergency Plan and to announce an "All Clear” to the public will be taken by the Controller of Operations of the lead responding agency and the Site Operator, in consultation with the Controllers of the other responding organisations.

Section 2; Key Actions

<The Site Operator>

Ensure that the activation section of this plan has been completed

Ensure that a primary Meeting Point is identified and communicated to the emergency services. (The primary Meeting Point is the point on the site where responders who have to deal with the incident will initially attend and where <The Site Operator> will be expected to provide a competent person, if applicable.)

<Remainder of <The Site Operator’s> key actions>

[Ensure that the Operator actions include contacting the HSA and, where relevant, any/all Domino Sites and/or the Harbour Authority/Port Company and/or the EPA]

Fire and Rescue Service

Consider the requirement to declare a Major Emergency (under the Framework for Major Emergency Management) and to activate the Major Emergency Plan

Obtain more detail regarding the incident from the <The Site Operator>

establish initial contact on arrival

establish on-going contact in <The Site Operator’s> Emergency Control Centre/Room at the site

Carry out a dynamic risk assessment for the incident (with <The Site Operator> if available) and determine what resources are required in the first instance to deal with the incident.

Put in place a command system for dealing with the incident.

Obtain/refer-to chemical plume prediction.

Identify potential contamination by fire run-off water.

Establish own agency liaison with: <refer to contact details for each>

<The Site Operator>

An Garda Síochána

34 This will almost always be the Local Authority
The Ambulance Service
The Central Competent Authority
Other Local Authority Services (where appropriate)
Port Company/Harbour Authority (where appropriate)
The Environmental Protection Agency (where appropriate)
Any/each other nominated responding agency

Establish a Danger Area. (Consider the site perimeter as an initial Inner Cordon)
Advise on sheltering and evacuation, if appropriate.

An Gárda Síochána
Consider the requirement to declare a Major Emergency (under the Framework for Major Emergency Management) and to activate the Major Emergency Plan
Establish clear and robust communications with the Garda officer-in-charge at the site
Establish communications with other responding agencies
Pass to the Garda Press Office any necessary warning to the public, in accordance with the Media Plan
Depending on information received as to risk scenario, identify safe approach route to the primary Meeting Point. Once established, deploy an officer there to liaise with the lead agency Controller of Operations
Appoint a Garda Controller of Operations who will take command of Garda resources in managing any off site consequences
Identify locations for Garda Incident Command Vehicle, secondary Meeting Point for responding agencies and, if necessary, a Holding Area
Depending on the information received as to the risk scenario, implement cordons as appropriate
Ensure that sufficient Garda resources are deployed to the incident
Jointly with the <The Site Operator> and other responding agencies, consider what action should be taken to communicate the conclusion of the incident and the “All Clear” to the public

Health Service Executive <Area>
Consider the need to declare a Major Emergency (under the Framework for Major Emergency Management) and to activate the Major Emergency Plan
Mobilise and despatch the pre-determined attendance

<Health Service Executive (Area) PDA>
Obtain more detailed information regarding the incident from the Operator, or the other Principal Emergency Services, as appropriate
Provide relevant information to responding units, as it becomes available
Establish an appropriate level of protection for staff (e.g. chemical protective equipment, intrinsically safe radios, etc) and alert staff accordingly
Identify a safe approach route for ambulances (depending on wind direction, traffic, etc.). Direct responding units to the designated locations (pre-determined or not depending on the circumstances)
<Specify pre-determined locations>
Alert the appropriate Acute Hospitals

<Hospital(s) details>

Alert adjoining Ambulance Control Centres

Identify (where relevant) the product/chemical involved

Alert the HSE Area Crisis Management Team

<HSE (Area) ACMT alert procedures>

Determine availability of on-site facilities for:

Casualty Management

Decontamination

Health Service Executive <Area> On-Site

The Ambulance Service will execute Ambulance Service Standing Orders for the site of a Major Emergency. In particular, the senior HSE Ambulance Officer at the site will:

Report to Ambulance Control using ETHANE

Act as HSE Controller of Operations, if required

Meet Controllers of Operations of other two Principal Response Agencies at the designated Meeting Point. In consultation with other Controllers, agree locations for Incident Control, Casualty Clearing Station, Ambulance Loading Point, Body Holding Area and HSE Holding Area, as appropriate.

Obtain Manufacturer Safety Data Sheet (MSDS) information on the product or chemical involved. Prepare a report from the site for the Area Crisis Management Team, using the normal reporting structure, and provide further updates, as requested. Request the activation of additional HSE services through the Ambulance Management Team to the HSE Area Crisis Management Team.

Liaise with other HSE services if required. Update Ambulance Control, on a regular basis, with information on the status of the incident, numbers and types of casualties, despatch of casualties to hospitals, etc.
Section 3; Internal Information

Details of Dangerous Substance(s) Present at <The Site Operator>

This plan has been prepared to respond to major incidents involving certain dangerous substances that are present at <The Site Operator>.

The dangerous substances concerned and the possible major accident scenarios for <The Site Operator> are as follows:

<Summary details of the notified dangerous substances and associated major accident scenarios>35

[Provide a link to any maps giving locations / quantities, etc, of dangerous substances]

Harmful Effects of the Dangerous Substance Present at <The Site Operator>

The harmful effects of the Dangerous Substances listed above are as follows:

<Details of the harmful effects of the dangerous substances>

<Refer to relevant Appendix>

[This should include health and environmental information]

Further information is contained in the Material Safety Data Sheets (MSDS) which are stored at / available from:

<Location of the msds>

Other Hazardous Substances present

<Details of any other hazardous substances present – location / quantity / msds are stored at / available from >

Details of Site Access and Egress

Primary

<Details of all primary access and egress routes to the site>

Secondary

<Details of all secondary access and egress routes to the site>

Location of <The Site Operator> On-Site Emergency Co-ordination Centre

The location of <The Site Operator’s> On-Site Emergency Control Room/Centre has been identified as follows:

<Details of <The Site Operator> On-Site Emergency Control Room/Centre>

Location of the Primary Meeting Point

<Details of the primary Meeting Point>

35 This section should set out each of the scenarios included in the <The Site Operators> safety report
Section 4; External Information

The Consultation Distance
The Consultation Distance for <The Site Operator> is <distance> from <location and / or national grid reference.>
<Describe the Consultation Distance – see also other relevant sub-heads below>

The External Emergency Planning Zone
If a wider External Emergency Planning Zone than the Consultation Distance (See Guidance Section 10, p.6) has been defined, it should be described here. The reasons why such a zone has been identified should be set out.
<Describe the External Emergency Planning Zone as necessary>

Location of Holding Areas
As the incident develops, a Holding Area will be established under the control of An Gárda Síochána. All emergency, specialist and voluntary services will be directed there, as appropriate.

Suggested Holding Areas are as follows:
<Details of Holding Area(s)>
However, the Garda Controller of Operations will decide, depending on wind speed and direction, and any other relevant factors, <if this location/which one of the suggested locations> will be used. If <this is not/neither of these are/none of these are> suitable, then the Garda Controller of Operations will designate another location.
<Cross-reference to relevant maps>

Location of the On-Site Co-ordination Centre (i.e the On-Site Co-ordination Centre in terms of The Framework)
[Note: Ensure that terminology is not confused in this section between ‘on site’ as referred-to in The Framework and ‘on site’ meaning present at the <The Site Operator> establishment.]
The location of the On-site Co-ordination Centre has been identified as the safest and most appropriate location from which inter-agency co-ordination can be managed:
<Details of the On-site Co-ordination Centre>
Or insert the following wording: “Initially the command vehicle of the lead response agency (very likely to be the <Local Authority> Fire and Rescue Service) will be at the Primary or Secondary Meeting Point designated in Section 2. It may subsequently be moved closer to the site depending on the incident scenario and risk assessment”

Location of Fire & Rescue Service Holding Area
The location of the Fire & Rescue Service Holding Area has been identified as follows:
<Details of Fire & Rescue service Holding Area>
Location of Garda Holding Area
The location of the Garda Holding Area has been identified as follows:
<Details of Garda Holding Area>

Location of Ambulance Holding Area
The location of the Ambulance holding area has been identified as follows:
<Details of Ambulance holding area>

Location of off site Helicopter Landing Zones for Casualty Evacuation
<Details of off site Helicopter Landing Zones>
If locations cannot be pre-identified, individual pilots will determine them at the time, following a dynamic risk assessment.

Domino Sites (where relevant)
The following Establishments are classed as Domino Sites by the CCA in respect of <The Site Operator>:
<Address(es) of any domino site(s)>

Details of Environmentally Sensitive Areas
The following areas are sensitive around <The Site Operator>
<Details of any environmentally sensitive areas around the site, in particular
Water courses /drinking water sources
Any Special Area of Conservation that may be effected>

Details of Land Use
The use of land around <The Site Operator> has been identified as follows for which particular protective measures may have to be implemented:
<Details of land use around the site>
<Details of any particular protective measures available>

Hazards to People in the Area
<Describe the residential pattern of the population and the pattern of people working in the Consultation Distance. Describe particular situations where large numbers may be exposed or where vulnerable persons are present.
Residential clusters
Schools, crèches, etc.
Nursing homes, day care centres, etc
Places of public assembly – conference venues, clubs, hotels, etc
Significant sleeping risks such as hotels, large guesthouses
Etc.>

**Specific Hazards to the Environment**
The hazards to the environment around <The Site Operator> are as follows:
<details of all hazards to the environment>

**Predicted Environmental Effects of Accidents**
The predicted environmental effects of an accident at <The Site Operator> are as follows:
<Details of the predicted environmental effects of an accident>

**Additional Information**
<Any additional information that <The Site Operator> has provided or that is required to be in this plan in the local circumstances>

---

**Section 5; Information to the Public Prior to an Incident**

What the Public has been Advised to do via the Information Issued Beforehand
The information issued beforehand advises the public to:
<Details of the package of information issued prior to an accident by < The Site Operator>>

When the Information was Issued to the Public
The above information was last issued to the public on:

<Date>

How the Information was Disseminated to the Public

The above information was disseminated to the Public using the following means:
<Details of how the information was disseminated>

Who received the information outside of the Consultation Distance
The above information was disseminated outside of the Consultation Distance to the following:

<Details of any recipients located outside the Consultation Distance>
Section 6; Warning and informing the public during an incident

How the Public will be Notified of an Incident

<The Site Operator> has the following procedures in place to notify the public of an incident:
<Details of how the public will be notified of an incident.>

How the Public will be Kept Informed During an Incident

<The Site Operator> has the following procedures in place to keep the public informed during an incident:
<Details of how the Operator will keep the public informed during an incident>

The responding agencies have the following procedures in place to keep the public informed during and after an incident:
<Refer here to relevant parts of Section 7 ‘Dealing with the Media’ and enter any other local arrangements for keeping the public informed>

How the Public will be Notified of the “All Clear”

Where a Major Emergency has been declared under the Framework for Major Emergency Management, the decision to announce an “All Clear” to the public will be taken by the On Site Coordinator, in consultation with the other Controllers of Operations at the site and the Local Coordination Group.

Where a Major Emergency has not been declared, the decision to announce an “All Clear” to the public will be taken by the Controller of Operations of the lead responding agency and the Site Operator, in consultation with the Controllers of the other responding agencies.

The methods chosen to notify the “All Clear” to the public for <The Site Operator> will depend on the nature and extent of the incident and its impact on the public.

Notwithstanding that the site has been declared clear, the Controllers of Operations together with <Lead Agency> Media Liaison Officer (and, as/where appropriate, a representative from <The Site Operator>), should consider the effect of the incident on the public, and prepare and issue advice on any measures necessary for members of the public to manage the aftermath of the incident and the return to normality.

36 This will almost always be the Local Authority
Section 7; Working with the Media

Inter-Agency Media Plan


The Framework recommends that the activities of the Media Liaison Officers at the site be co-ordinated by the Media Liaison Officer of the Lead Agency. All statement to the Media should be cleared by the On-site Co-ordinator or his/her Media Officer.

<Detailed Media Plan>

Co-ordination with <The Site Operator’s> Media Strategy

The On-Site Co-ordinator should maintain liaison with <The Site Operator> media liaison contact to ensure a co-ordinated response to the media, in so far as that is appropriate, in the interest of public safety.

The media liaison contact provided by <The Site Operator> for liaison with Media Liaison officers of the LCAs is

<Details>

The Media Briefing Centre on site at <The Site Operator> is:

<Details>

Section 8; Recovery

Where a Major Emergency under The Framework has been declared, the management of recovery from the effects of the emergency will conform in general with Section 6 of The Framework and the Major Emergency Plans of <Relevant LCAs>

In the case of any activation of this EEP, the following will specifically apply:

<The Site Operator>

<The Site Operator> will take the following key actions for the protection, management and clean up of the environment:

<Details of planned & agreed measures to protect the environment

<Details of on-site containment measures, including location and operation of shut-off valves>

<Details of any specific measures to manage the clean up and to restore the environment>

<Details of organisations to be consulted e.g. The EPA, HSE Public Health, Local Authority Environmental Service, An Taisce, Wildlife Bodies, etc.

To support the Community following the incident, <The Site Operator>, will consider:

<Details of any arrangements that The Site Operator has to support the community following an incident>

An Gárda Síochána

To support the community, following an incident at <The Site Operator>, An Garda Síochána will provide all necessary and appropriate information on the investigations, as soon as that is possible.

Otherwise, An Gárda Síochána will comply with the provisions of The Framework, as applicable in the circumstances, during the recovery phase.
Health Service Executive

To support the community, following an incident at <The Site Operator>, the HSE will assess the health needs of the community and consider the scale of immediate and ongoing needs for assistance in the circumstances of the emergency. The following needs in particular will be considered:

The health needs of evacuees or persons displaced by the emergency and of others caught up in the emergency

The health needs of vulnerable persons and groups of people

Provide a point of contact for the provision of information and for dealing with the health concerns of the community, such as a <The Site Operator> major incident help-line

Provide advice on environmental health in the circumstances of the emergency

<Details of HSE arrangements>

Local Authority

To support the community, following an incident at <The Site Operator>, the <Local Authority> will make arrangements to provide appropriate support, assistance and advice to people affected by the emergency and shelter for people displaced as deemed necessary

<Details of Local Authority arrangements>

<Details, where relevant, of evacuee shelter, accommodation and welfare arrangements>

The <Local Authority> shall establish a list, in priority order, of remedial works / actions, with a view to dealing with such works / actions in a speedy and efficient manner.

The <Local Authority> shall at the earliest possible time, establish any remedial works/actions, which are outside its own control/function, and shall determine the speediest means of their alleviation, including legal remedy, if necessary.

Section 9; Contact Directory

<Contact details>

Section 10; Schedule of Appendices

The schedule/index goes on this page and each Appendix is to be attached thereafter
Appendix C
Emergency Services Pre Incident-Planning form

EMERGENCY SERVICES PRE INCIDENT-PLANNING FORM

*(Please read through the entire pro forma)

Sections: A. Premises Details
    B. Occupancy
    C. On-Site Risks
    D. Resources Available on-site
    E. Sealed Drawings and Maps

Date:

A. Premises Details

Premises Name
Alias Name
(address/previosly known as)
Address
Telephone
Fax
Emergency Phone No
(24 hour number)

Description of Premises
(chemical factory/office/warehouse, etc.)

Security on duty/call?
(give name/telephone no.)

Guard Dog?
(if so, give handler’s contact)

Salvage Priorities
(See Section E)
1.
2.

Personnel Register?
Location of Register

Location of Main Fire
1. Alarm Control Panel(s)
2. 3.

Location of Main Isolators
(Electricity, Gas, etc.)
1. 2. 3.
### Names / Phone No’s of Adjacent Industries

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<th>Name</th>
<th>Phone</th>
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### Construction Description

**Page ____ of ____ pages under this heading**

(General description of type - please use as many of these pages as are necessary)

<table>
<thead>
<tr>
<th>Building No;</th>
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<tbody>
<tr>
<td><strong>Building Name</strong></td>
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<td>Ground Floor Area</td>
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<td>No of floors (incl. Ground Floor)</td>
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<td>Height from ground to eaves of roof</td>
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<tr>
<td>Basement (y/n)</td>
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<td>Frame</td>
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<td>(concrete portal / steel portal / unframed, etc.)</td>
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<td>Ground Floor</td>
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<tr>
<td>(concrete, timber, steel etc.)</td>
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<td>Upper Floors</td>
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<tr>
<td>(concrete, timber, steel etc.)</td>
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<tr>
<td>Roof</td>
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<tr>
<td>(concrete, timber + tiles, steel decking etc.)</td>
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<td>External Walls</td>
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<td>(concrete, brick, steel cladding etc.)</td>
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<td>Internal Walls</td>
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<td>(general description will suffice concrete, stud partition, proprietary, etc.)</td>
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<td>Stairs</td>
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<td>(concrete, timber, steel etc.)</td>
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<td>Fixed Fire Protection Facilities</td>
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<td>(sprinkler, drenchers, halon or CO2 flooding system etc.)</td>
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33
B. Occupancy

1. Normal Occupancy (No. of personnel in each Department)

<table>
<thead>
<tr>
<th>Occupancy / Department</th>
<th>Office Hours</th>
<th>Shift/ Weekends</th>
<th>Shutdown or other</th>
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<tbody>
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2. Multiple Occupancy

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<thead>
<tr>
<th>Occupier (Company Name)</th>
<th>Building or Part of Building Occupied by Company</th>
<th>Trade or Business</th>
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3. Names of People to be contacted in emergency situation

(Only relevant persons should be listed, such as Key holders, Safety officers, Plant engineers, MD etc.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Function (Key holder etc.)</th>
<th>Telephone (day)</th>
<th>Telephone (night)</th>
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</table>
## C. On Site Risks

### 1. Hazardous Substances (Page ____ of ____ pages under this heading)

(a) List all hazardous chemicals stored or used on site on as many copies of this page as are necessary

(b) General Laboratory Chemicals stored and used in Laboratories in small quantities need not be included

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS NO</th>
<th>UN NO</th>
<th>UNIT SIZE</th>
<th>MAX QUANTITY</th>
<th>STORE</th>
<th>CATEGORY (Note 4)</th>
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**Notes:**

1. Substances indicated by a "trade"/IUPAC name should also give correct chemical name.
2. If the UN No. is NOT given, a CAS No. and/or a Material Safety Data Sheet for the substance should be supplied.
3. The inventory should be in alphabetical order.
5. Indicate with an asterisk any substances that are named substances in Schedule 1, Part 2 of S.I. No. 209 of 2015.
6. All substances should be given a hazard category or indicated as non-hazardous.
2. Delivery / Despatch of Hazardous Bulk Loads

Notes; Use as many copies of this page as necessary

If UN No. is **NOT** given then a CAS No. and a Material Safety Data Sheet must be supplied

<table>
<thead>
<tr>
<th>Name:</th>
<th>UN No.</th>
<th>&quot;Trade&quot; Name</th>
<th>CAS No.</th>
</tr>
</thead>
</table>

**Delivery:**
- Mode of Transport
- Approx Frequency
- Port of Entry / Route

**Vessel/Container Type**
- Average load quantity
- Usual Carrier(s)

**Despatch**
- Mode of Transport
- Approx Frequency
- Port of Entry / Route

**Vessel/Container Type**
- Average load quantity
- Usual Carrier(s)

**Any Other Information**

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<table>
<thead>
<tr>
<th>Name:</th>
<th>UN No.</th>
<th>&quot;Trade&quot; Name</th>
<th>CAS No.</th>
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</table>

**Delivery:**
- Mode of Transport
- Approx Frequency
- Port of Entry / Route

**Vessel/Container Type**
- Average load quantity
- Usual Carrier(s)

**Despatch**
- Mode of Transport
- Approx Frequency
- Port of Entry / Route

**Vessel/Container Type**
- Average load quantity
- Usual Carrier(s)

**Any Other Information**

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<table>
<thead>
<tr>
<th>Name:</th>
<th>UN No.</th>
<th>&quot;Trade&quot; Name</th>
<th>CAS No.</th>
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</table>

**Delivery:**
- Mode of Transport
- Approx Frequency
- Port of Entry / Route

**Vessel/Container Type**
- Average load quantity
- Usual Carrier(s)

**Despatch**
- Mode of Transport
- Approx Frequency
- Port of Entry / Route

**Vessel/Container Type**
- Average load quantity
- Usual Carrier(s)

**Any Other Information**

---

36
3. **Other Risks** (i.e. Products of Combustion, Biological / Radiological Risks. etc. or Risks to Rescue Personnel -- e.g. Machinery, Unprotected Floor Opes etc.)

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Action to be taken</th>
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4. **Outline the nature, extent and likely effects on and off site of possible major accidents at the site. Indicate the areas off site to which expected effects are confined** (and also mark same on the Site Location Map required at part E of this form). *(Vide S.I. no.209 of 2015)*

5. **Additional Comments on on-site risks** *(If relevant)*

---

37
**D. Resources Available At Site**

**Water Sources**

1. **Hydrants**  
   *(Please list adjacent hydrants along with any known info re same)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Location</th>
<th>Type</th>
<th>Owner (Loc. Auth / Private etc.)</th>
<th>Condition (Good/ Bad/ in need of repair etc.)</th>
<th>Flow (Litre/min)</th>
<th>Static Pressure (Bars)</th>
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</table>

2. **Other Water Sources**  
   *(Please list adjacent Open Sources, Static Tanks, Streams, etc.)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Location</th>
<th>Type</th>
<th>Owner (Loc Auth / Private etc.)</th>
<th>Capacity (Approx. Volume in cub metres or litres)</th>
<th>Access for Brigade</th>
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3. **Detailed Instructions (if relevant) on the operation of firewater facilities.**
   
   *(e.g., cut off valves, meter by pass arrangements, etc.)*

4. **Details on provisions (if relevant) for the collection of firewater run-off**

5. **Fixed Fire Fighting Systems (if any)**
   
   *(Sprinklers, Fixed Monitors, Hose Reels etc.)*

<table>
<thead>
<tr>
<th>Description of System</th>
<th>Area Covered</th>
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6. Other Fire Fighting Capabilities
   (e.g. works brigade, special equipment, foam stocks, etc.)

   **Works Brigade** Available on site? ________________________________
   **Fire Leader** Available on site? ________________________________
   **Trained Employees** Max/Min no’s on site ________________________________
   **Fire Fighting Vehicles** (pumping capacities) ________________________________

   **Specialist Equipment** held on site - give particulars

   **BA sets- No/Type/Cyl Capacity** ________________________________
   **Chemical Protection Suits** ________________________________
   **Close Proximity Fire Suits** ________________________________
   **Water/Foam Monitors** ________________________________
   **Portable Radio Sets** ________________________________
   **Neutralising Agents** ________________________________
   **Other** ________________________________

   **Extinguishing Agents** held on site - give particulars.

   ________________________________
   ________________________________
   ________________________________

   **Works Brigade protective clothing.** Indicate the colour, type, and markings.

   ________________________________
   ________________________________
   ________________________________

   **Safety/training officer** - Give name. (or person responsible for training)

   ________________________________

7. Other Resources

   **Spill Containment** ________________________________
   **Toxic Gas Release Containment** ________________________________
   **Gas Detection Equipment** ________________________________
   **Hazardous Substance Dispersion Modelling Equipment** ________________________________
8. Medical Facilities / Resources

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

9. Decontamination Facilities / Resources

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Please indicate Medical and Decontamination Facilities / Resources on site on a map and / or drawing e.g. medical centre, medical supplies store, First Aid resources / supplies, Company Doctor’s surgery, decontamination facilities and / or supplies etc.
E. Drawings and Maps

Sections A to D of the pro-forma should be accompanied by the following:-

1. A simple Site Layout Plan on a single A4 size sheet (or A3 if A4 would be unclear or cluttered) showing **ONLY** the following:
   a. Each **building/structure** named simply (e.g. Warehouse, offices, process etc. ....)
   b. Each **storage compound** or **tank farm** named simply.
   c. Identify any sprinkler-protected buildings or compartments and where **sprinkler-stop valves** are located.
   d. Identify all electrical / fuel / gas **isolators**.
   e. Mark the **access points to each building** (including personnel doors) with arrow pointers.
   f. Mark each **site access/egress point**, giving the width.
   g. Mark the **site-roads** layout.
   h. Indicate areas of **restricted access** (Radiological / Biological / Dangerous Process activities).
   i. Mark the location from where the **on-site control** of an emergency (by senior management) would be conducted.
   j. **Salvage** Priorities.

2. A schematic diagram of the fire water supply and distribution network on an A4 (or A3) size sheet.

3. A clear **Site Location Map** also on a single A4 sheet.

4. A map or drawing showing **Medical and Decontamination Facilities / Resources** as set out in Sections 8 and 9.

**Note**: You are requested to submit the above in .dxf or .dwg digital format.
## Appendix D; Roadmap Example Template

### SEVESO PLANNING ROADMAP

**Procedure and Record of the Preparation or Review and Exercise Process of the External Emergency Plans (EEP’s)**

*Once every three years for each Upper Tier SEVESO Site*

<table>
<thead>
<tr>
<th>Company – Site Operator</th>
<th>Date</th>
<th>Timeline</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Letter (Req. Rev1) sent by [ ] to the Site Operator requesting information for preparation or review. This includes: [Requesting an up to date Emergency Service Pre Incident-Planning form and public leaflet] and [Informing the operator of the charge for the preparation or review and exercise of the EEP] and [consequence modelling for calculating the External Emergency Planning Zone, using the Level of Concern parameters provided by the PRAs ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Period during which the operator replies</td>
<td></td>
<td>4 Weeks</td>
<td>23 Weeks In Total</td>
</tr>
</tbody>
</table>
| 3 Preparation or review of EEP and setup of review team is initiated at COMAH meeting and co-ordinated by LCAs Officer :  
   a) A member of each Principal Response Agency (PRA) is nominated to the exercise review team from: [An Garda Síochána], [The Health Service Executive], [The Local Authority], [The Port Authority - if the specified area of a site affects a Ports Functional Area] and [Site Operator].  
   b) A nominated member assisted by the LCA Officer from this review team will take the lead role for: [The preparation or review of the EEP] and [Planning and execution of the exercise] | | 4 Weeks |  |
| 4 Consultation with Site Operator, Review and formulate an Exercise Team, LCA, HSA, EPA and Port Authority if applicable. Meetings are also arranged with any vulnerable populations that are in close proximity to the Consultation Distance. | | 2 Weeks |  |
| 5 Public Consultation  
   a) Consultation must take place before the EEP is exercised with the site operator  
   b) If an EEP is being put in place for the first time and including any reviews the period of public consultation is four weeks. The LCAs produce the notice about the public consultation and requests the HSE and relevant Local Authority to place it on the public area of their websites. It can also request AGS & LA to place it on its ‘Facebook / Twitter pages.  
   The LCA prepares packs for the viewing centres as listed in the public notice and a pack is sent to the operator for information. Ensure contact details are removed / blacked out in the copies of the EEP for public consultation. | | 4 Weeks |  |
| 6 c) The LCA Officer organises a site tour for the exercise team and all members from the PRAs taking part in the exercise. The exercise is: - a Live or Table top (Type of Exercise is determined by Regional Steering Group – funding dependant). | | 1 Week |  |
| 7 Exercise Report (The nominated team leader produces the exercise report which is submitted to the LCA). The exercise team meets at least once during this period of four weeks to include learning points from the exercise and debrief in the finalisation of the EEP. | | 4 Week |  |
| 8 Finalisation of EEP (Ver. No. and Promulgation). The exercise team leader presents the exercise report to the COMAH Subgroup. The COMAH Subgroup:  
   (a) Considers whether the EEP is ‘fit-for-purpose’  
   (b) Amends the EEP if necessary  
   (c) Proposes that the EEP be adopted by all relevant LCA’s (Local Component Authorities) and that the promulgation page of the EEP be signed  
   (d) Submits the finalised EEP to the Regional Working Group | | 4 Week |  |
| 9 The Exercise Report is finalised and circulated to the LCAs. A copy of the report is also sent to the National Working Group ( When Requested) | | |  |

**This Roadmap is intended as a guide to the LCAs in the SEVESO External Emergency Planning Process.**
Mapping Levels of Concern for External Emergency Planning Zones (EEPZ)

Re: the Levels of Concern [LOCs] exposure to toxic fumes, there is a division between a once-off exposure to a member of the public and occupation exposure of a worker.

Public Exposure Guidelines
Public exposure guidelines are intended to predict how members of the **general public** would be affected if exposed to a particular hazardous chemical.

Workplace Exposure Limits
Workplace exposure limits are intended to protect **workers** from excessive exposure to toxic chemicals in the workplace. Employers are responsible for ensuring that these limits are not exceeded in the workplace.

Public exposure guidelines and workplace exposures limits are not interchangeable. They address two different cohorts of people; they address two different sets of conditions and more significantly, are the responsibility of two different entities. One of these entities, the employer, has very specific legal responsibilities which they must meet.

Public Exposure Guidelines
The most common public exposure guidelines are;
- **AEGLs** (Acute Exposure Guideline Levels)
- **ERPGs** (Emergency Response Planning Guidelines)
- **TEELs** (Temporary Emergency Exposure Limits)

Typically, these guidelines are used to assess the severity of a hazard to the general public when a hazardous chemical release occurs.

Workplace Exposure Guidelines
Common workplace exposure limits include;
- **IDLHs** (Immediately Dangerous to Life and Health limits)
- **TLVs** (Threshold Limit Values)
- **OELs** (Occupational Exposure Limits in relation to an 8-Hour or 15-Minute reference period)

These are usually defined for healthy adult workers, and typically incorporate safety factors to ensure that workers won’t be overexposed to hazardous chemicals in the workplace.
In order to estimate the level of harm from a hazardous agent it is necessary to provide a means to quantify the exposure in terms of the intensity, duration of exposure and consequences of effect. In mapping LoCs that are useful, LoCs must be chosen that are appropriate for the scenario being mapped or modelled. As much as possible, LoCs should:

- Represent the hazard or effect that is of concern.
- Be intended for the population that is of concern.
- Have exposure durations appropriate for the scenario.

The Consultation Distance determination is for land use purposes and the values do not transfer readily to emergency response.

In determining the Consultation Distance other LOCs are used such as Specified Level Of Toxicity (SLOT) Dangerous Toxic Load (DTL) or Significant Likelihood Of Death (SLOD). These are a means of estimating the level of fatality exposure to a hazardous agent.

SLOT and DTL are usually defined as the dose that results in highly susceptible people being killed, a substantial portion of the exposed population requiring medical attention and or causing severe distress to the exposed. Lethal Dose (LD) is a lethal dose or lethal concentration. The value of LD50 for a substance is the dose required to kill half the members of a tested population after a specified test duration. LD50 figures are frequently used as a general indicator of a substance's acute toxicity. A lower LD50 is indicative of increased toxicity and as such it represents the dose that will result in the onset of fatality for a specific percentage of an exposed population (commonly referred to as LD1 or LD1-5).

Given that the Local Competent Authorities [LCAs] will have concerns for the general public and for their own unprotected staff, any LoC that specifies the "onset of fatality" for a specific percentage of an exposed population is regarded as too high. A more conservative LoC, the Acute Exposure Guidance Levels (AEGLs) are the appropriate threshold value to use as the level of concern to protect public health. Acute Exposure Guideline Levels (AEGLs) are considered the best public exposure guidelines to date, because they undergo a rigorous review process, and are designed as guidelines for nearly all members of the general public—including sensitive individuals.

AEGLs are available for exposures of 10 mins, 30 mins, 1 hr, 4 hrs and 8 hrs. AEGLs may not be available for all chemicals and in such a situation the LoCs should default to:

- **ERPGs** (Emergency Response Planning Guidelines)
- or
- **TEELs** (Temporary Emergency Exposure Limits)

if ERPGs are not available.
AEGL
Description: Acute Exposure Guideline Levels (AEGLs) are considered the best public exposure guidelines to date, because they undergo a rigorous review process, and are designed as guidelines for nearly all members of the general public — including sensitive individuals. Each AEGL includes three tiers, defined as follows:

Three AEGL tiers are defined as follows:

- **AEGL – 3** is the airborne concentration, expressed as parts per million (ppm) or milligrams per cubic meter (mg/m$^3$), of a substance above which it is predicted that the general population, including susceptible individuals could experience life threatening health effects or death.

- **AEGL – 2** is the airborne concentration (expressed as ppm or mg/m$^3$) of a substance above which it is predicted that the general population, including Susceptible individuals could experience irreversible or other serious, long lasting adverse health effects or an impaired ability to escape.

- **AEGL – 1** is the airborne concentration (expressed as ppm or mg/m$^3$) of a substance above which it is predicted that the general population, including susceptible individuals could experience notable discomfort, irritation or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

ERPG
Description: The Emergency Response Planning Guidelines (ERPGs) are intended to be a planning tool to help you anticipate human adverse health effects to the general public caused by toxic chemical exposure. ERPGs are based on experimental data. Unlike AEGLs they are only available for a 1-hour exposure duration. ERPGs are not designed as guidelines for hypersensitive individuals, who could suffer adverse reactions to concentrations far below those suggested in the guidelines.

Three ERPGs are three tiered Guidelines, with tiers defined as follows:

- **ERPG-3** is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 Hour without experiencing or developing life threatening health effects.

- **ERPG-2** is the maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 Hour without experiencing or developing irreversible or other serious side health effects or symptoms which could impair an individual’s ability to take protective action.

- **ERPG-1** is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 Hour without experiencing other than mild transient health effects or perceiving a clearly defined, objectionable odor.
**TEEL**

**Description:** TEELs are temporary levels of concern designed to be used as toxic exposure limits for chemicals for which AEGLs or ERPGs have not yet been defined. Like AEGLs and ERPGs, they are designed to represent the predicted response of members of the general public to different concentrations of a chemical during an incident. TEELs do not incorporate safety margins. Each TEEL includes four tiers, defined as follows:

Three TEEL include four tiers defined as follows:

<table>
<thead>
<tr>
<th>Tier</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>TEEL-3</td>
<td>is the maximum in air below which it is believed nearly all individuals could be exposed without experiencing or developing life-threatening health effects.</td>
</tr>
<tr>
<td>TEEL-2</td>
<td>is the maximum in air below which it is believed nearly all individuals could be exposed without experiencing or developing irreversible or other serious health effects or symptoms that could impair their abilities to take protective action.</td>
</tr>
<tr>
<td>TEEL-1</td>
<td>is the maximum concentration in air below which it is believed nearly all individuals could be exposed without experiencing other than mild transient health effects or perceiving a clearly defined objectionable odor.</td>
</tr>
<tr>
<td>TEEL-0</td>
<td>is the concentration below which most people will experience no appreciable risk of health effects.</td>
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</table>
## Summary of the Major Levels of Concern

<table>
<thead>
<tr>
<th>LOC</th>
<th>Population</th>
<th>Definition</th>
<th>Exposure Duration</th>
<th>Source</th>
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<tbody>
<tr>
<td>AEGL</td>
<td>General Public</td>
<td>3- Tiered guidelines for emergency response</td>
<td>10 min., 30 min, 1 hr, 4 hr and 8 hr.</td>
<td>National Advisory Committee, National Research Council</td>
</tr>
<tr>
<td>ERPG</td>
<td>General Public</td>
<td>3 – Tiered planning guideline for emergency response</td>
<td>1 Hour</td>
<td>American Industrial Hygiene Association</td>
</tr>
<tr>
<td>TEEL</td>
<td>General Public</td>
<td>Use a response/Planning guideline only if AEGL or ERPG is not available</td>
<td>No Exposure Duration</td>
<td>U.S Department of Energy</td>
</tr>
<tr>
<td>IDLH</td>
<td>Healthy Adult Workers</td>
<td>Estimate the highest concentration from which escape is possible without permanent damage</td>
<td>No Exposure Duration</td>
<td>NIOSH</td>
</tr>
<tr>
<td>TLV</td>
<td>Healthy Adult Workers</td>
<td>Guideline meant to protect workers safety and health over a working lifetime. Each TLV includes a time – weighted average limit (TWA), may also include ceiling (C) and short-term (STEL) Limits</td>
<td>TWA; 10 – Hour day /40 – Hour weeks C; Instant STEL; Usually 15 minutes</td>
<td>NIOSH</td>
</tr>
</tbody>
</table>
| REL  | Healthy Adult Workers | Recommended limit meant to protect worker safety and health over a working lifetime. Each REL includes a time-weighted average limit (TWA); may also include ceiling (C) and short term (STEL) limits. | TWA; 10 – Hour day /40 – Hour weeks  
| C; Instant  
STEL; Usually 15 minutes | NIOSH |
| PEL  | Healthy Adult Workers | Limit meant to protect worker safety and health over a working life. Each PEL includes a time weighted average limit (TWA), may also include a (C) limit | TWA; 8 Hour day/ 40 Hour week  
| C ; Instant | OSHA |

*Source: Fictitious data, for illustration purposes only*