Seveso III: Capital and Operational Budget Impacts – the Changes and Challenges for Industry

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Overview

- Introduction to AWN Consulting Ltd.
- 2015 COMAH Regulations and application thereof in ROI
- Main provisions for operators
- Changes that impact on Capital and Operational Costs
- Case Studies
- Summary



Brief Introduction

- Maeve McKenna, Principal Risk Consultant, AWN Consulting
- Dr Fergal Callaghan Director EHS
- Multi-disciplinary EHS Consultancy
- 28 Consultants 4 working full time on Seveso, GHS. CLP, Chemical Agents Risk Assessment and ATEX
- Work for US multi-national and Irish client base in Ireland and abroad, including pharma, oil and gas, chemical storage and processing, semi-conductor, explosives
- Also work for Local Authorities (Fire and Emergency Services) An Bord Pleanála as Technical Inspector



Services AWN provide

- Classification of hazardous materials;
- HAZID and HAZOP Studies;
- Consequence & Risk Modelling (DNV PHAST, TNO Effects and Riskcurves);
- Quantitative Risk Assessment (QRA) (Individual and Societal);
- Preparation of Safety Reports;
- Land Use Planning Assessments;
- SDS troubleshooting and preparation;
- Accident Investigation;
- Organisation Change Risk Assessment;
- ATEX;
- CLP and GHS



Some recent Clients





2015 COMAH Regulations

- The Seveso III Directive came into operation in the Republic of Ireland as of 1 June 2015 via the Chemicals Act, Control of Major Accident Hazard Regulations 2015
- Alignment of dangerous substances covered by the EU Classification, Labelling and Packaging Regulation which replaces risk phrases with hazard statements and introduces a new system for classifying and labelling substances and mixtures
- 2015 Regulations also introduce a number of changes for operators



Application of the 2015 COMAH Regulations

- Schedule 1 Part 1 lists 21 categories of dangerous substance under groups of:
 - Health Hazards classification criteria have changed for acute toxic categories, and STOT SE 1 category is new,
 - Physical Hazards new categories include flammable aerosols and self reactive substances mixtures and organic peroxides, lower thresholds for high flashpoint flammable liquids kept above their boiling point and processed under hazardous conditions,
 - Environmental Hazards
 - Other Hazards



Main provisions for operators

Provision	2015 COMAH Regs	2006 COMAH Regs	Lower Tier Establishment	Upper Tier Establishment
General Duties (including HAZID and QRA)	7	8	\checkmark	\checkmark
Notification	8	11	\checkmark	\checkmark
Domino effects	9	9(3)	×	\checkmark
MAPP and SMS	10	10	\checkmark	\checkmark
Safety Report	11	12	×	\checkmark
Modifications	12	-	\checkmark	\checkmark
Internal Emergency Plan	13, 14, 15	15	×	✓
External Emergency Plan	13, 14, 16, 17	16	×	✓
Land use planning	24	27	✓	✓
Provision of information to the public	25	18	\checkmark	\checkmark
Access to information and confidentiality	26	34	\checkmark	\checkmark

2015 COMAH Regulations What has changed?

- Notification
- Major Accident Prevention Policy and Safety Management System
- Safety report
- Modifications
- Emergency response plans
- Provision of information to the public
- Access to information and confidentiality



Notification

- The HSA will only accept notifications made using the electronic notification form
- To be submitted at least 3 months prior to construction, operation or modifications leading to a change in inventory
- The notification form will also be used to collect the information to be provided to the public and for the development of technical land use planning advice
- Operators will be required to have completed hazard identification studies, consequence modelling and QRA prior to notification in order to provide this information



MAPP and SMS

- Lower tier sites are now required to send the MAPP to the CCA
- The Safety Management System shall be "proportionate to the hazards, industrial activities and complexity of the organisation in the establishment" and shall be based on assessment of risks
- The organisation and personnel part of the SMS to address measures taken to raise awareness of the need for continuous improvement
- There is an absolute requirement for safety performance indicators



Safety Report (Upper Tier Sites)

- The description of the installation should take into account available information on best practice
- Include a review of past accidents and incidents with the same substances and processes used, consideration of lessons learned from these, and to specific measures taken to prevent such accidents
- The EPA will be involved in reviewing major accidents to the environment



Safety Report Timeline

- For new establishments, the Safety Report is to be submitted four months prior to start of construction or operation or prior to modifications leading to a change in the inventory of dangerous substances, CCA will communicate conclusions or seek further information within 4 months
- Existing upper tier establishments to submit an updated safety report by 1 June 2016
- An operator shall not begin construction, operation, or implement modifications leading to a change in the inventory of dangerous substances until it has received the conclusions and permission from the CCA



Modifications and Land Use Planning

- Prior to a significant modification including change to form or quantity of dangerous substances which could have significant consequences for major accident hazards, operator to review and update the notification, MAPP and Safety Report
- Operator to inform the CCA of details of updates in advance of modifications taking place and in "sufficient time" to allow the CCA to carry out its functions under Regulation 24 (land use planning)
- The CCA will decide if the modification constitutes a "significant change" and may request additional technical measures to be included or may refer the proposed change to the planning authority with relevant technical advice



Emergency Response Plans

- More emphasis on domino effects
- The IEP must be prepared in consultation with personnel on site as well as Local Competent Authorities (Fire Service, Ambulance Service and An Garda Síochána)
- IEP and EEP to be tested every 3 years
- Greater provision for public participation in the External Emergency
 Planning process
- Modelling to extent of Harm to AEGL2



Provision of information to the public

- All establishments are required to make information permanently available to the public, including by electronic means as per Schedule 5 Part 1 (all sites) and Part 2 (upper tier sites)
- It is now required to make information on inspections available to the public
- For upper tier establishments the inventory of dangerous substances and safety report should be made available to the public on request (subject to regulation 26)
- Operators of upper-tier establishments to communicate with persons likely to be affected by a major accident



Access to information and confidentiality

- Information held by a competent authority is treated as environmental information and subject to Access to Information on the Environment (AIE) Regulations (2007 to 2014)
- For safety reports, this applies only where the CCA have communicated their conclusions
- Technical land use planning advice provided by the CCA is considered public information
- The AIE regulations include discretionary grounds for refusal (including commercial confidentiality and intellectual property rights)
- A request for environmental information shall not be refused where the request relates to information on emissions into the environment (such as a major accident)



Operator Case Studies

- Case studies were conducted involving a number of upper and lower tier establishments, in order obtain feedback and to identify operator's concerns around the implementation of Seveso III. A number of organisations were contacted as follows:
- Case study 1: medium sized chemical manufacturing and distribution company, upper tier Seveso III establishment – dangerous substances represent mainly toxic hazards
- Case study 2: medium sized chemical manufacturing company, upper tier Seveso III establishment – dangerous substances represent mainly environmental hazards



Operator Case Studies

- Case study 3: warehouse company, upper tier Seveso III establishment – product is environmentally harmful
- Case study 4: small chemical manufacturing and distribution company, lower tier Seveso III establishment – dangerous substances represent mainly toxic hazards (the same organisation as Case Study 1)



Case Study 1	Medium sized chemical manufacturing and distribution company
Employees	140 on site (including administrative personnel for the organisation nationally)
Seveso III status	Upper tier establishment
Main hazard	Toxic substances
Location	Established site, built up area, numerous commercial and residential receptors in close proximity
Cost implications	Significant capital expenditure increases, mainly on emergency response equipment for installations with high consequence accident scenarios but very low frequency, increased consultancy costs for 2016
Safety training	Operational and emergency response safety training has increased significantly on site, mainly driven by emergency planning due to sensitivity of receiving environment. The emergency response team has increased in size.
Emergency response planning	The drill frequency has increased, driven by the requirements of the emergency response authorities. 4 site evacuations per year are now carried out to ensure readiness of personnel on site in an emergency event.
Planning modifications	Potential delays to deliver new projects due to need to consult authority as to whether change significant or not an potential 2 month additional delay
Public communications	There are significant concerns around modelling to consequence endpoints in the MEM Guidelines, which are extremely conservative, and the public perception of this. Due to lack of public understanding, it will unnecessarily cause concerns about the level of risk for this establishment. Also, in the experience of this organisation modelling software is not robust enough to accurately model to these endpoints.

Case Study 2	Medium sized chemical manufacturing company
Employees	170 on site
Seveso III	Upper tier establishment
status	
Main hazard	Substances classified as hazardous to the aquatic environment
Location	Established site in industrial estate with commercial/industrial receptors
Cost	Seveso III compliance costs and budget (updating consequence
implications	modelling, safety report) will increase significantly on previous years .
Safety training	There has been significant investment in emergency response training
	using external consultants and in equipment stored on-site.
Emergency	Emergency response training and equipment have been a significant cost
response	An exercise has been conducted with the emergency response
planning	authorities the cost of this was significant
Planning	This establishment is continuously developing new products and the new
modifications	modifications approval process under Seveso III could potentially impact
	the ability to meet customer requirements in a timely manner
Public	There are concerns around modelling to consequence endpoints in the
communication	MEM Guidelines.
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Other	Reclassification of chemicals was the driver for this site to become a
comments	Seveso establishment. However, the scope of Seveso has extended to
	other systems and processes on site.

Case Study 3	Warehouse company
Employees	30 on site
Seveso III status	Upper tier establishment
Main hazard	Substances classified as hazardous to the aquatic environment, confidentiality of product information is a significant business concern
Location	Established site, limited number of commercial receptors, some low density residential receptors in the area
Cost implications	Capital expenditure has been significant, the cost of a new unit was approximately 15% higher due to HSA requirements. This constituted a significant cost to the organisation.
Safety training	Some additional training has been required, but no significant increase in training requirements or costs.
Emergency response planning	The main concern is the cost to the operator. The external emergency plan is based on a warehouse fire scenario or loss of containment of refrigerant which is toxic, but it is not the reason why the warehouse became a Seveso establishment.
Planning modifications	Change of product could potentially occur at this operation. The main concern is the lack of timescales for the HSA approvals process for significant modifications and implications for ability to meet the potential future needs of customers.
Public communications	There are significant concerns around modelling to consequence endpoints in the MEM Guidelines, which are overly conservative, and the public perception of this. It would not reflect the overall low risk profile of this operation.
Other comments	A concern is the approach of the competent authority which does not acknowledge the low risk nature of activities at the warehouse when compared to complex manufacturing activities, and this has resulted in significant capital costs.

Case Study 4	Small - medium sized chemical manufacturing and distribution company
Employees	30 on site
Seveso III status	Lower tier establishment
Main hazard	Toxic substances
Location	Established site, industrial area with few receptors
Cost implications	No significant increase in capital expenditure has been required
	Main issue for Seveso III is budgeting to update consequence modelling as per emergency response authorities requirements
Safety training	No significant changes have been required on site
Planning modifications	Concern about potential delays
Public communications	Information on the establishment will be available on the HSA's website. This is not a significant concern as the receiving environment is mainly industrial with few residential receptors.



Conclusions

- Operators have concerns around release of information to the public
- This relates to both perception of their operation and also protection of Intellectual Property
- Operators surveyed have had to invest in emergency response training and equipment
- Concern expressed about delays to making changes on-site due to process under Seveso 3, which has potential impact on sites ability to add new products or processes
- Capital cost impact for all sites in terms of investment in emergency equipment and one site due to firewater retention requirements
- Main impacts are operational costs (training, management time, emergency response organisations time and consultancy fees)



Conclusions

 In conclusion all Operators accept that Seveso 3 will improve site safety but are concerned about the impact on their operational costs and their ability to introduce new products and processes

