

COMPETENCY AND TRAINING OF SEVESO INSPECTORS

RECOMMENDATIONS AND SUMMARY OF CURRENT PRACTICE IN EU MEMBER STATES AND OTHER IMPLEMENTING COUNTRIES



TABLE OF CONTENTS

Executive Summary	5
Background	9
Recommendation for Establishing Competency Requirements and Training Programmes for Seveso Inspectors	11
Competency Requirements and Training Programmes for Seveso Inspectors: Findings and Conclusions	12
Introduction.....	12
A. The Need for Recommendations and Best Practice Change on Seveso Inspector Competency and Training	12
A1. The Multiple Competencies Required of a Seveso Inspector.....	12
A2. The Need for Individualized Training Plans for Seveso Inspectors.....	14
A3. Challenges in Achieving Effective Seveso Inspector Training.....	15
B. Knowledge-Gathering Activities for the Recommendations on Competency and Training Practices of Seveso Inspection Programmes	16
B1. Completion of the collection and analysis of responses to the survey of Seveso inspectors on competency and training requirements	17
B2. Organization of a short workshop on Seveso inspector competency and training requirements in the TWG annual meeting	18
C General principles and considerations that influence competency and training choices in Seveso countries	19
D Competency Requirements for Seveso Inspectors – Common Principles and Examples of Good Practice	20
E. Different types of ongoing training/professional development activities	22
E1. Basic Seveso inspector training.....	23
E2. Periodic training and professional development.....	25
E3. Different types of ongoing training/professional development activities ..	27
E.3.2 Professional development and training support outside of formal training programmes	28
F. General summary and conclusions	30
ANNEX 1: Comments and Observations from Poland and Baden-Württemberg	33
ANNEX 2: Examples of Training Syllabi of Different Seveso Inspectorates	37
A. Basic training programme – FPS Employment, Labour and Social dialogue Belgium - summary	38
B. An Example of In-House Training Provided by HSE’s Hazardous Installations Directorate (HID) for Inspectors of Seveso Sites in the UK	39

Table of Figures

Figure 1: Typical Training Strategy to Provide Seveso Inspectors with Necessary Competences	13
Figure 2: Survey Respondent Suggestions for Improvements to Their Seveso Inspector Training Programs	14
Figure 3: Challenges in Completing Needed Training Courses	15
Figure 4: Presence of Formal Hiring Criteria in Survey Respondent Organisations..	20
Figure 5: Competency Requirements of Organisations of Surveyed Inspectors	21
Figure 6: Essential and Preferred Competencies for Inspecting Seveso Installations	22
Figure 7: Technical Training Priorities of Surveyed Inspectors	23
Figure 8: Non-Technical Training Priorities of Surveyed Inspectors.....	23
Figure 9: Basic Seveso Inspector Training of Surveyed Inspectors	24
Figure 10: Duration of Basic Training Elements According to Surveyed Inspectors	25
Figure 11: Status of Periodic Training According to Surveyed Inspectors	26
Figure 12: Frequency and Duration of Periodic Training.....	26
Figure 13: Typical Periodic Training Content Identified by Surveyed Inspectors	28
Figure 14: Other Valuable Resources and Opportunities for Training.....	29

Table of Tablees

Table 1: Position and Responsibilities of Surveyed Inspectors	17
Table 2: Profile of Survey Respondents by Country	18
Table 3: Profiles of TWG Workshop Presenters	19
Table 4: Summary of the Various Approaches to Seveso Inspector Training in Europe.....	31

Executive Summary

Following 10 years of implementation of the Seveso II Directive, it is widely recognized by competent authorities that fulfilment of the enforcement obligations within the Directive requires staff possessing a unique set of competencies and skills. Moreover, these competencies and skills must be nurtured and augmented over time to remain high quality and current with evolving technology and to understand and sometimes use new models, methodologies and applications that are being deployed to increase process safety.

In 2007 the Technical Working Group for Seveso Inspections (TWG 2) was asked by the Committee of CA to develop a recommendation for an EU competency/training syllabus for Seveso inspectors. These recommendations are based on the results of a survey of Seveso inspectors on the competency requirements and training programmes of their organisations as well as a subsequent workshop on competency and training requirements involving countries represented on the TWG 2. In addition to the recommendations, principles and examples of good practice are presented in a summary document associated with these recommendations.

Summary of Findings from the Survey and Workshop on Seveso Inspector Competency Requirements and Training Programmes

The table below provides a general summary of the range of approaches to Seveso inspector training across Europe.

Summary of the Various Approaches to Seveso Inspector Training in Europe

Type of Training	Structure	Content	Duration
Basic training	On the-job training is an essential component in most countries. In addition, many countries have established specific courses. In some authorities, a test or series of tests must be passed.	At a minimum, courses usual cover the legal system, regulatory obligations, enforcement and inspections strategy. Additional content varies considerably from country to country.	Considerable variation starting with a minimum of a week up to 6 months in some countries. On-the-job training ranges from a few months to a year.
Periodic training	Very broadly defined. Can include formal training programmes and courses as well as ad hoc professional development opportunities organized locally as well as internationally. Formal courses on specific topics as well as exchange of good practice and lessons learned are included in this definition. Several countries regularly organize joint training for all its Seveso inspection authorities.	Focus varies with time and inspection objectives, but generally tends to be either improving technical or administrative skills, or updating regulatory knowledge. Some authorities link inspector grades with the amount and type of training completed. Needs and strategy related to maintaining competency in specialized areas of industrial safety also influence training objectives.	Usually ranges from 1-2 days to a couple of weeks per year. In some countries training is fixed for a specific number of days each year, but in many countries it depends on the need and availability of training opportunities.

In addition some general conclusions can be drawn from the detailed descriptions of competency and training practices in Seveso inspection programmes, one can note the following:

- **Individual inspectors should be well-equipped with the proper competencies so that their inspections have a real possibility of improving risk management on their Seveso sites.** Control of major hazards requires fundamentally a multi-disciplinary expertise, and competencies in each of the disciplines is generally acquired through experience and training. The central challenge of the inspection authority is to match inspector experience and competency with the inspection plan of the inspector.
- **There is no standard universally applicable syllabus for training Seveso inspectors.** There is no specific course structure that can be recommended to guide competent authorities in building their Seveso inspection training programmes. The objectives and content of training programmes are linked directly with the perceived role and obligations of the inspection authority in inspection and enforcement of the Seveso directive in their country. Moreover, competency needs can be addressed in numerous ways using a combination of competency requirements, basic plus periodic training.
- **Competency requirements vary considerably depending on the needs and objectives of the organization’s Seveso inspection programmes.** The emphasis on specific professional credentials (beyond a university degree), experience and specific skill sets was not uniform across authorities. These aspects were influenced by a variety of factors unique to the organization, including its staffing and training strategy, the experience and competency of existing inspections staff, and the availability of appropriately experienced and skilled individuals in the work force.
- **Basic training, and especially on the job training, are considered essential.** Seveso inspection programmes generally consider that Seveso inspectors must have some form of basic training as a foundation for their work. Training on the job is considered a critical element of training by all inspection programmes. In contrast, the emphasis on coursework and the content of courses offered as basic training varied considerably across countries and inspectorates.
- **Periodic training is also highly valued but definition and content of such training varies even more than basic training across authorities.** Local influences play an even more critical role in determining the nature and content of periodic training. Resources in particular may influence the frequency and systematic structuring of periodic training opportunities. In addition, the objective of inspections and other roles played by inspectors (e.g., review of safety reports) and inspection/accident experiences will strongly determine content. Periodic training priorities may be influenced by a perceived need to maintain or improve co-ordination and consistency with other authorities internally and externally.
- **Seveso inspectors generally view professional development as a combination of specialized training, good practice and lessons learned exchange, and improvement of general professional skills.** The desire to improve “technical skills” was expressed by a majority of participants (when combining both generic and specific responses). Where such skills were

specifically identified risk assessment, process safety and plant operations topped the list. Legal, communication and administrative skills were also highly valued by a wide number of participants as well as training on overall inspection strategy.

- **National and international seminars and conferences to exchange good practice and lessons learned were considered valuable learning resources.** In addition to participation in international events such as the EU Mutual Joint Visit workshops and IMPEL conferences, several countries host national events and have established national networks of inspectors. Survey responses were particularly strong in emphasizing the value of any opportunity to exchange information with other Seveso inspectors.

Recommendations for Establishing Competency Requirements and Training Programmes for Seveso Inspectors

It is recommended that:

- *Member States and associated countries establish and periodically review specific competency and training requirements for Seveso inspectors.*
- *Effective Seveso inspections require a base competency in legal and technical requirements of Seveso implementation and in proven inspection methods.*
 - *A training strategy for each individual inspector should be established and updated on a regular basis.*
 - *The training strategy should be adapted to individual inspectors to support and strengthen their individual level of competency in these areas.*
 - *The education and experience of an inspector should be appropriate to the sites in his/her inspection plan.*
- *It is further recommended that, in the process of defining or improving competency requirements and training programmes for Seveso inspectors, Member States and associated countries take into account good practice emanating from past experience in Seveso countries. For this purpose, the document that follows summarizes different approaches adopted by the vast majority of EU countries and inspectorates, in terms of both content and implementation.*

Objectives of inspections and the role of inspectors are often defined quite differently across authorities and countries due to important local and national influences, such as the existing legal framework, enforcement philosophy, the distribution of responsibilities between organizations, and current inspection resources and capacity. Therefore, it is expected that Seveso competent authorities will use their best judgment in selecting and adapting content and implementation measures that are appropriate to their local situation, in particular, in consideration of their own institutional norms and legal framework .

- *Exchange of documentation of best practices and clear interpretations and applications at EU level should be encouraged and resulting materials should be made available on a protected, inspector web server best practices. Exchange of documentation in all the European languages should be accepted and inclusion in the website of a translation mechanism should also be considered over time.*

Formattati: Elenchi puntati e numerati

Formattati: Elenchi puntati e numerati

Competency and Training of Seveso Inspectors

Recommendations and Summary of Current Practice in Member States and Other Seveso Implementing Countries

**Prepared by the EU Technical Working Group for Seveso Inspections (TWG 2)
for the 22nd meeting of the Seveso CCA (22 October 2009, Lulea, Sweden)**

Revised version – draft June 2010

Background

Following 10 years of implementation of the Seveso II Directive, it is widely recognized by competent authorities that fulfilment of the enforcement obligations within the Directive requires staff possessing a unique set of competencies and skills. Moreover, these competencies and skills must be nurtured and augmented over time to remain high quality and current with evolving technology and to understand and sometimes use new models, methodologies and applications that are being deployed to increase process safety.

It was also recognized that the depth and range of required competencies and skills can vary considerably between countries, and even competent authorities, depending on the specific role of the competent authority in Seveso enforcement and its strategic approach. Hence, it would be useful to understand whether there are competencies and skills broadly recognized as important by most or all Seveso competent authorities and how competent authorities work to meet and maintain such core requirements. Secondly, it would be useful to know what and how much specialized knowledge is valued in the competent authorities and how competent authorities meet such needs.

For this reason this issue was recommended to be a priority topic for study by the EU Technical Working Group on Seveso Inspections in 2004, resulting in the implementation of the inspector survey that forms the basis of some of the elements of this recommendation. Furthermore, the issue was separately raised during the CCA Seminar on Enforceability that took place in April 2008 in Brdo, Slovenia. As a result, it was recommended to develop an EU competency/training syllabus for Seveso inspectors. Since the Technical Working Group for Seveso Inspections was already working on this topic, it was asked by the CCA to implement this recommendation.

The following document consists of recommendations followed by a summary of principles and examples of good practice that should be taken into consideration in establishing competency requirements and training programmes for Seveso inspectors. Part A of this summary describes the need to maintain an effective training for Seveso inspectors. Part B describes the knowledge-gathering efforts, namely a survey of Seveso inspectors and a workshop that took place in association with a TWG 2 annual meeting. Part C highlights the general principles gathered from the TWG study that influence the selection of Seveso inspector competency requirements and the structure of Seveso inspector training programmes. Part C also provides an overview of the kinds of competency and skill requirements generally considered important across Seveso inspectorates. Part D describes norms of basic training programmes as well as various approaches to specialist and advanced, or ongoing, training that has been established in various inspectorates in associated countries and also how these programmes are managed and financed.

NOT FOR DISTRIBUTION – Version 4

Please also note that the description of competency and practices attached to the recommendation may be revised in advance of its final publication.

Recommendations for Establishing Competency Requirements and Training Programmes for Seveso Inspectors

It is recommended that:

- *Member States and associated countries establish and periodically review specific competency and training requirements for Seveso inspectors.*
- *Effective Seveso inspections require a base competency in legal and technical requirements of Seveso implementation and in proven inspection methods.*
 - *A training strategy for each individual inspector should be established and updated on a regular basis.*
 - *The training strategy should be adapted to individual inspectors to support and strengthen their individual level of competency in these areas.*
 - *The education and experience of an inspector should be appropriate to the sites in his/her inspection plan.*
- *It is further recommended that, in the process of defining or improving competency requirements and training programmes for Seveso inspectors, Member States and associated countries take into account good practice emanating from past experience in Seveso countries. For this purpose, the document that follows summarizes different approaches adopted by the vast majority of EU countries and inspectorates, in terms of both content and implementation.*

Objectives of inspections and the role of inspectors are often defined quite differently across authorities and countries due to important local and national influences, such as the existing legal framework, enforcement philosophy, the distribution of responsibilities between organizations, and current inspection resources and capacity. Therefore, it is expected that Seveso competent authorities will use their best judgment in selecting and adapting content and implementation measures that are appropriate to their local situation, in particular, in consideration of their own institutional norms and legal framework .

- *Exchange of documentation of best practices and clear interpretations and applications at EU level should be encouraged and resulting materials should be made available on a protected, inspector web server best practices. Exchange of documentation in all the European languages should be accepted and inclusion in the website of a translation mechanism should also be considered over time.*

Formattati: Elenchi puntati e numerati

Formattati: Elenchi puntati e numerati

Formattato: Rientro: Sinistro: 1,9 cm

**Competency Requirements and Training Programmes for Seveso Inspectors:
Findings and Conclusions**

Version 2

Introduction

This document represents the combined findings from the workshop on Seveso competency and training and from the survey on competency and training completed by various MJV participants. The workshop was particularly helpful in confirming the degree to which trends cited in the survey are widely reflective of trends across the broad spectrum of Seveso inspectorates in Europe. In particular, several Seveso inspectorates in Europe were not included in the survey but their practices were described in the workshop.

This document is divided into four parts as follows:

Section A – The need for recommendations and best practice change on seveso inspector competency and training

Section B - Knowledge-gathering activities for the recommendations on competency and training practices of seveso inspection programmes

Section C - General principles and considerations that influence competency and training choices in Seveso countries

Section D - Competency requirements for seveso inspectors – Common principles and examples of good practice

Section E - Different types of ongoing training/professional development activities

Section F – Summary and conclusions

A. The Need for Recommendations and Best Practice Change on Seveso Inspector Competency and Training

The recommendations and associated knowledge-gathering efforts (the survey and the workshop) stem from a recognition that maintaining effective training programmes for Seveso inspectors is a challenge of several dimensions.

A1. The Multiple Competencies Required of a Seveso Inspector

Control of major hazards, also known alternatively as loss prevention or process safety management, is fundamentally a multi-disciplinary expertise, and competencies in each of the disciplines is generally acquired through experience and training. Over 30 years experience with the Seveso Directive suggests that it is not possible for an inspector to check compliance in a meaningful way without a fundamental knowledge of all the elements that contribute to effective control of major hazards. In addition, inspection is in itself a field of expertise that is also multi-disciplinary. Seveso inspectors therefore, have to somehow acquire on the job or from past experience competency in a number of disciplines, some of which are inter-related, but others, such as risk assessment, are stand-alone disciplines and highly specialised.

Hiring experienced process safety professionals can be a significant advantage to an inspections programme but is not often possible due to availability and cost. Therefore, as noted later in this document, most inspection authorities adopt a strategy of hiring staff that have education and experience that make them likely to be a good inspector, but with the inspection that a substantial part of the competencies that they need will be learned on the job through experience and training

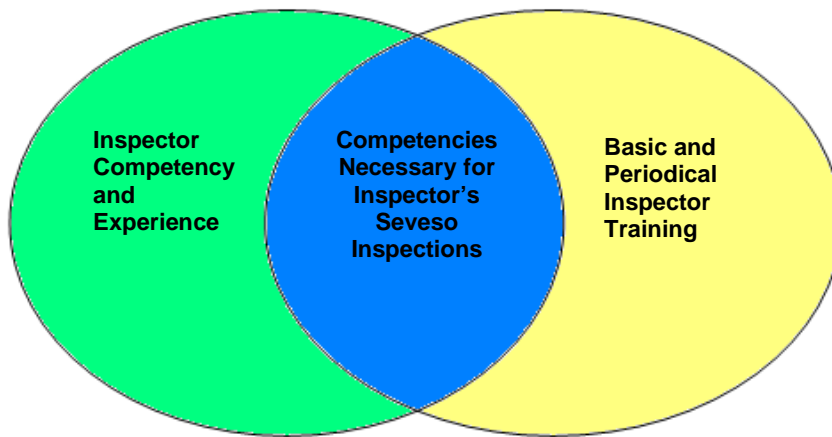


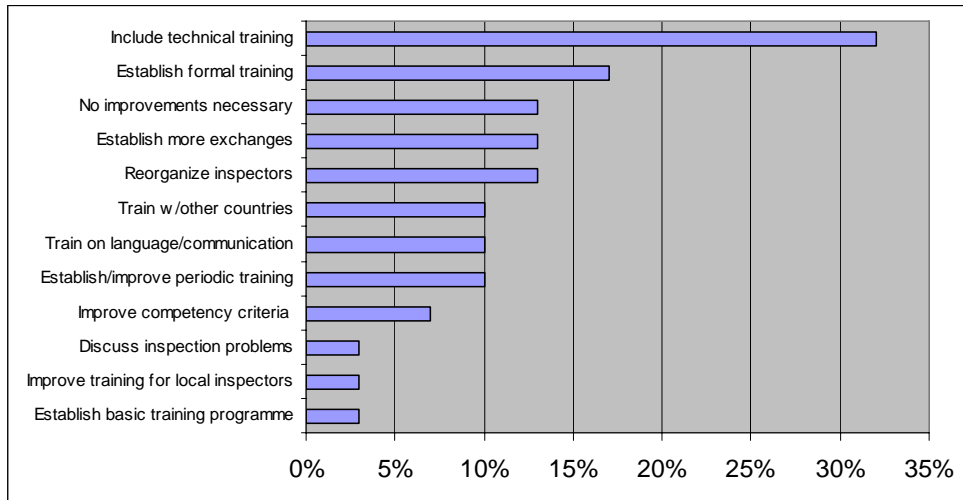
Figure 1: Typical Training Strategy to Provide Seveso Inspectors with Necessary Competences

The inspector must essentially have the competence to evaluate the adequacy of the site's compliance with all the elements of the safety report and the safety management system (see Text Boxes 1 and 2). In essence, these elements include understanding of chemical engineering processes for Seveso type industries, principles of mechanical engineering (for reliability and integrity issues), behaviour of numerous dangerous substances and their effects on people and the environment, techniques for identifying hazards and assessing consequences, psychological disciplines of organizational behaviour and human-machine interfaces (human factors), and emergency planning.

The challenge is complicated further by the sheer diversity of major hazard industries and the vast number of dangerous substances and potential reactions involved. For example, the e-MARS database established to record major accidents at Seveso sites lists 45 different industrial sectors. It has been further estimated that there have been over 250 toxic substances released or involved in accidents recorded in the database. Moreover, for most equipment and many activities, there exist codes and standards and even regulations of which the inspector must be aware and in some cases very knowledgeable.

Furthermore, inspection itself is an expertise. It follows a disciplined process that starts with strategic planning, following onto inspection preparation, the inspection itself and follow-up. Several important elements of the process include a firm grasp of all the legal aspects (legislation, rights and obligations of the regulator and the regulated, and the legal process), and co-ordination with other authorities and external experts. In addition, as many of the surveyed inspectors emphasised, excellent communication and writing skills are necessary to maximise the possibility that inspection findings will be addressed.

Figure 2: Survey Respondent Suggestions for Improvements to Their Seveso Inspector Training Programs (N = 30)



A2. The Need for Individualized Training Plans for Seveso Inspectors

The recommendations emphasise the need for individualized training plans for individual inspectors. As shown in Figure 1, the central challenge of the inspection authority is to match inspector experience and competency with the inspection plan of the inspector. In addition to highlighting the multi-disciplinary nature of major hazard control, Section A1 also notes the additional complexity that arises stemming from the diversity of sectors represented by Seveso sites. Different sectors require a different and often specialised knowledgebase of inspectors for effective evaluation of the operator’s demonstration that all necessary measures to protect humans and the environment have been undertaken.

These sectors in particular are differentiated in numerous ways relevant to safety, such size and complexity, types of processes, types of equipment, engineering, operational equipment, staff expertise and balance sheets.¹ In addition, sites differ from one another in terms of particular risk management challenges and sometimes the significance of certain challenges to safety, such as the risk assessment process or human factors, on particular sites requires specialised expertise to evaluate.

Therefore, it is clear that individual inspectors should be well-equipped with the proper competencies so that their inspections have a real possibility of improving risk management on their Seveso sites. This challenge becomes increasingly critical when

¹ This fact is highlighted in the 2008 joint publication by the European Commission’s Joint Research Centre and the Netherlands, *Enforcement of Seveso II: An Analysis of Compliance Drivers and Barriers in Five Industrial Sectors* on Seveso highlighting strengths and weaknesses of Seveso compliance in five industrial sectors (mineral oil refineries, batch processors, pharmaceutical production, LPG storage, and fertiliser production).

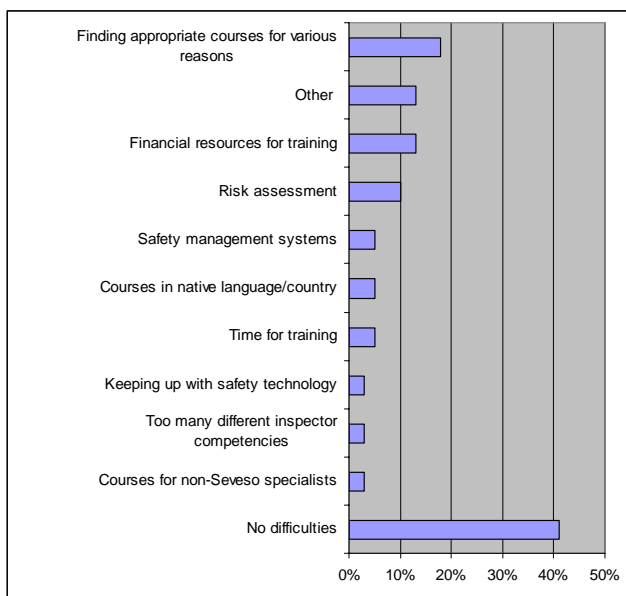
access to experts in particularly important expertises are not available to the authorities. There is no doubt that it is a significant challenge for inspectors and the inspection authority as a whole to keep abreast of all the competencies that might be required to implement within their annual Seveso inspection plan. However, inspection authorities generally find that working strategically they can make significant progress in maintaining and increasing the competency of their staff. The following description of needs and practices associated with Seveso inspector training is aimed to help inspection authorities in establishing and improving their training goals and strategies.

A3. Challenges in Achieving Effective Seveso Inspector Training

The survey and workshop indicate that the majority of inspection authorities generally offer some kind of basic and periodic training for Seveso inspectors. However, as noted in the survey, programmes sometimes have difficulty in obtaining precise training necessary for Seveso inspectors. The survey highlighted some of these challenges, that were also recognised in the workshop presentations and in the two country comments included here in **Annex X**.

In particular, Figure 3 shows a general difficulty in finding appropriate materials and courses in specialty areas. Several survey respondents mentioned specifically that opportunities for training on safety management systems and risk assessment may be limited. More generally, keeping up with safety technology and the various competencies that they may be require also poses challenges to many programmes.

Figure 3: Challenges in Completing Needed Training Courses (N = 39)



Moreover, it was noted that when specialised training materials or courses exist, they sometimes do not exist in the native language of the inspectors.

This situation gives support for the ongoing efforts of the various Seveso countries, through the MJVs and the TWG 2, and the Major Accident Hazards Bureau to exchange best practices and make them available to inspection authorities. MAHB in collaboration with the various involved Seveso countries currently conduct a number of activities as part of

these efforts, in particular:

- Guiding Phase II of the Mutual Joint Visit programme that facilitates exchange of best practice and other knowledge among Seveso inspectors on special topics
- Publishing a hard and electronic copy of the results of the MJV Phase II exchanges in the Seveso Inspection Series

- Publishing documentation on the TWG 2's priority topics on the Seveso Inspections website (<http://sevesoinspections.jrc.it>) in original languages
- Producing a Seveso Safety Bulletin periodically on narrowly defined topics of interpretation and guide practice
- Fostering technical exchange on specific topics in TWG 2 meetings. The materials and a summary of the discussions (if any) are subsequently made available on the Seveso Inspections website.

It was also noted in the comments from Baden-Württemberg that it would be helpful if a translation mechanism were included in the website to allow reading all documents in the inspector's own native language. This would require additional investment in the website design which may be possible to incorporate over time.

B. Knowledge-Gathering Activities for the Recommendations on Competency and Training Practices of Seveso Inspection Programmes

The TWG determined that this effort required establishing a reference knowledge base of current practices in Member States and other Seveso implementing countries. It identified, and subsequently completed, two main activities to achieve this objective, a survey and a workshop in the context of the TWG 2 annual meeting

The workshop was added following the completion of the survey in order to ensure a well-rounded interpretation of the status of Seveso inspector competency requirements and training across Europe.

It is important to note that these efforts included input from every Member State but not every inspectorate. In particular, it is estimated that more than 250 Seveso inspectorates throughout Europe (and considering the number of countries that involve local inspectorates, this estimated number could be considered conservative). However, there was considerable diversity among inspectorates that did participate either through the survey or through the TWG 2 mini-workshop. Independently, sampling a mostly different audience, both the survey and the workshop reached more or less the same conclusions about typical requirements, optional approaches and their influences. From this it seems evident that the analysis and recommendation below will largely be considered relevant and applicable for most Seveso inspectorates in the European Union and associated States.

Moreover, from the results of these exercises it was immediately clear that generic recommendations regarding the importance of maintaining a training programme for Seveso inspectors would be relevant and useful. However, providing a specific recommended syllabus would be difficult given the diverse approaches and responsibilities of the various Seveso inspectorates across Europe. Therefore, the recommendations are general and short and cover training and competency requirements broadly.

Moreover, in lieu of a recommended syllabus, the recommendations has included this explanation of current practice as derived from the survey and workshop results. In this way, the document can be used as both a benchmarking reference as well as a menu of options for inspectorates looking for ideas.

Important points resulting from these exercises are incorporated in the current document and in the annexes.

In addition, following circulation of the final draft of the recommendations to the CCA, further information and recommendations on training programmes were received from Poland and Baden-Württemberg (Germany). These comments can be found in Annex 1.

In the process of gathering this information, three syllabi were collected from individual Seveso inspection programmes (UK Health and Safety Executive, Belgian FSP Employment and Labour and the French Ministry of Ecology, Sustainable Development and Sea). The syllabi are included with this document in Annex 2.

B1. Completion of the collection and analysis of responses to the survey of Seveso inspectors on competency and training requirements

This survey was conducted and distributed to Seveso inspectors participating in Mutual Joint Visits for Seveso Inspections (MJVs) between 2005 and 2008. The survey resulted in a total of 57 participants representing competent authorities in 22 Member States, 2 EEA/EFTA countries and 2 Candidate Countries.

Table 1: Position and Responsibilities of Surveyed Inspectors

RESPONDENT PROFILE	# RESP	% RESP
SEVESO INSPECTOR	44	79%
NOT AN INSPECTOR	11	20%
INSPECTION DEPARTMENT MANAGER	13	23%
... HAS OTHER RESPONSIBILITIES BESIDES INSPECTIONS, INCLUDING	11	20%
-POLICY	4	36%
-SAFETY REPORT	2	18%
-LEGAL, PROCEDURAL	4	36%
-CIVIL PROTECTION	1	9%
-OTHER	1	9%
ALSO INSPECTS OTHER LEGISLATION	28	50%
- ENVIRONMENT	17	30%
- OCCUPATIONAL SAFETY	9	16%
- RADIATION	2	4%
- CIVIL PROTECTION/FIRE SAFETY	2	4%
- HIGH RISK NON-SEVESO	3	5%
- TRANSPORTATION (UN ADR)	1	2%
THE ORGANIZATION ...		
... IS LEAD SEVESO AGENCY	33	59%
... SHARES BUT DOES NOT LEAD INSPECTIONS	15	27%

Table 2: Profile of Survey Respondents by Country

EU-15	33
NEW MS	16
EFTA/EEA	3
CC	3
OTHER	1
UNKNOWN*	1
TOTAL	57

- Twelve (12) EU-15 countries represented with BE, UK, DE, SV, NL most represented (3-5 respondents each)
- Ten New MS represented – with Hungary most represented (3 responses)
- Two EEA/EFTA countries represented– Norway and Switzerland
- Two Candidate Countries represented – Turkey and Croatia
- One industry respondent

Table 1 (p. 17) shows the distribution of inspectors by function. Respondents were given a number of options to describe their profile, including:

- whether or not they were a Seveso inspector, and/or if they had an inspections management role,
- whether or not the inspector has other responsibilities besides Seveso inspections
- whether they inspected other legislation besides Seveso, and
- whether or not the organization was the lead authority for Seveso inspections in their country.

▪
The responses were grouped for analysis in Table 1 according to these attributes. Table 2 summarises the survey respondents per country.

B2. Organization of a short workshop on Seveso inspector competency and training requirements in the TWG annual meeting

In June 2009 each country present in the TWG meeting (see Table 3, p. 19) made a short presentation on competency and training requirements in their country or in their organization. This session consisted of presentations from 18 different Seveso countries, some representing all the inspectorates of their country and others representing only their own inspectorate. The perspective of industry was also presented. Presentations are available in the password-protected section of the [Seveso Inspections website](#)².

² Presentations are available on the Seveso Inspections website: <http://139.191.1.51/typo3/index.php?id=435>. Competent authority staff can access the password-protected site once they register with the site. Members of the CCA and TWG 2 may use the User Name and password of those groups to view the materials.

Table 3: Profiles of TWG Workshop Presenters

Representative of ...	Competency and Training Approaches Described for ...
Belgium	All Seveso inspectorates in Belgium in general, more detailed information on content training program for labour safety inspectorate
Croatia	Ministry of Environment Inspectorate
Czech Republic	All Seveso inspectorates in Czech Republic
Denmark	All Seveso Inspectorates in Denmark
EPSC	Requirements and challenges in industry
Finland	Tukes, the Safety Technology Authority
France	DRIRE (Regional Office for Industry, Research and Environment)
Germany	Seveso Inspectorate of Hesse, Germany
Hungary	National Directorate for General Disaster Management
Italy	Environmental agencies (National and regional)
Netherlands	Labour Inspectorate
Norway	Directorate for Civil Protection and Emergency Planning
Poland	State Fire Service
Portugal	Environment Inspectorate
Romania	Inspectorate for Emergency Situations
Sweden	Swedish Civil Contingencies Agency
Turkey	Ministry of Environment and Forestry
United Kingdom	Health and Safety Executive

C General principles and considerations that influence competency and training choices in Seveso countries

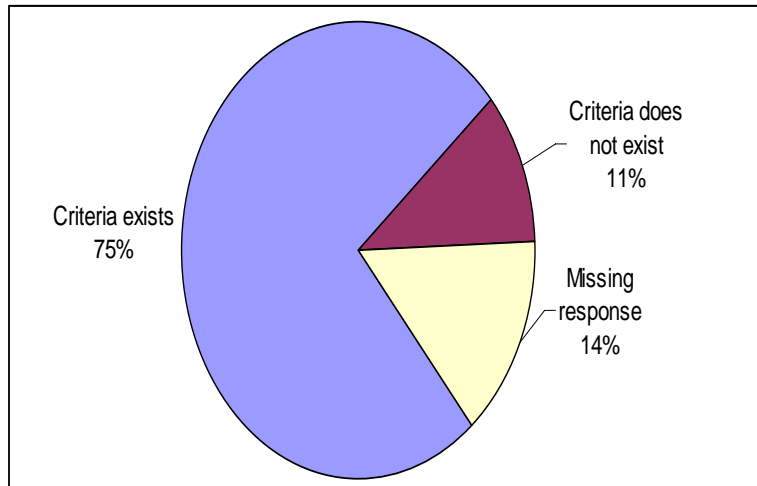
Competency requirements and training programmes for Seveso inspectors can vary widely between countries, and also inspectorates, depending on the following factors:

- **Role of the inspectorate.** Two aspects are particularly influential: 1) whether the inspectorate is considered the lead organization for fulfilling Seveso inspection obligations or whether it is a secondary partner; and 2) whether or not inspectors assigned to Seveso inspections typically have other types of inspection responsibilities (e.g., environment, occupational safety, fire safety).
- **Scope of inspections as defined by the country/inspectorate.** This element is partly defined by the role of the inspectorate as noted above. However, it is independently also shaped by historical, social and legal frameworks. These frameworks impose a certain philosophical approach to and often some practical limitations on enforcement.
- **Authority to verify Seveso compliance effectiveness (quality assurance).** Countries/inspectorates may differ substantially in terms of how far the scope of inspections can go, e.g., whether it is a simple compliance check or an actual verification that safety measures are of an adequate quality, i.e., effectiveness.. This element is not a primary influence but a result of the combination of the above two factors. However, it is so important in influencing competency and training requirements that it is highlighted separately as a key factor.
- **Resources for Seveso inspections,** in particular, financial and staff resources, but also competency and experience available in the country's work force.

D Competency Requirements for Seveso Inspectors – Common Principles and Examples of Good Practice

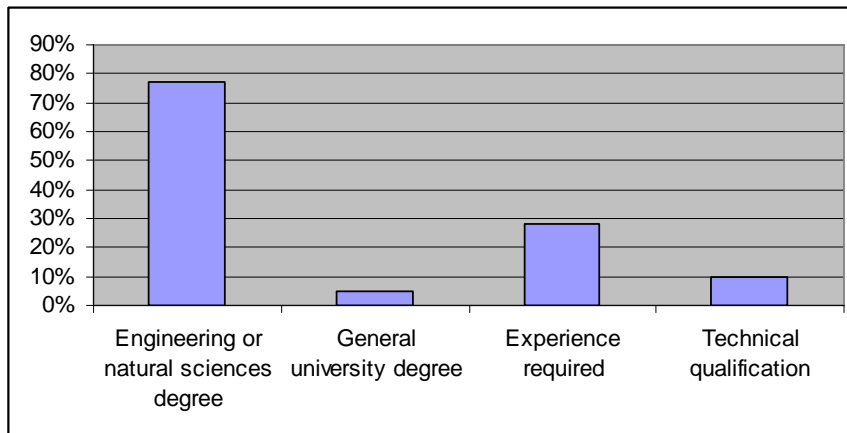
- **Most Seveso inspection authorities have formal competency requirements.** It is hard to determine the exact break-down between all the different Seveso inspection programmes in Seveso countries. However, based on the workshop and survey results (see Figure 4), it can be concluded that a majority of inspection programmes have formal competency requirements. (This tendency was reflected by 39, or 74% of all responses to the survey).

Figure 4: Presence of Formal Hiring Criteria in Survey Respondent Organisations (N = 53)



- **Level of education.** Competency requirements reported in the survey and in the mini-workshop emphasized the importance of a university degree. In the survey, this emphasis was reported by 32, or 82%, of the respondents with formal competency requirements.
- **Type of degree.** According to the workshop and the survey, the preferred university degree was a natural science or engineering degree (in a few cases, a Master's degree). For a small number of programmes a technical university degree was not specifically indicated. In addition some emergency response authorities hire only graduates of emergency responder degree programmes (which include two years or more of full-time coursework in the subject).
- **Past experience.** Past experience was not always required. When desired or required, prior employment in industry and as an inspector seemed to be considered most relevant. A few survey respondents also mentioned experience with management systems and a number of other competencies specifically associated with major hazard control (see Figure 5, p. 20).

Figure 5: Competency Requirements of Organisations of Surveyed Inspectors (N = 39)



The degree to which past experience is required or preferred in hiring new Seveso inspectors appeared to be a decision based on a number of subjective factors:

- the level of formal training on inspections protocol and strategy available within the organization
 - the level of formal training on major hazard control within the organization
 - the experience level of the existing inspections staff; and
 - the importance of Seveso relative to other inspections work of the organization.
- **Required or Preferred Skills.** In addition to education and experience requirements or preferences, many inspectorates emphasized communication (especially report writing and persuasion/negotiation), administrative and computer skills. For essential and preferred competencies identified in the survey, see ANNEX 2.
 - **Competency test.** In addition, some inspection programmes require prospective inspectors to pass a competency test prior to hiring into the organization or prior to hiring as a Seveso inspector (if an internal candidate).

Resources. This factor covers finance as well as staff time available for training and other resource-related influences, such as ease of access to training, e.g., existing training facilities.

Training content and structure. In discussing training, it is particularly important to distinguish between:

- basic-generic training (basic training for all inspectors in the organization)
- basic-Seveso training (basic training whose content is specifically designed to aid Seveso inspections) training, and
- periodic (or ongoing) Seveso specific training.

E. Different types of ongoing training/professional development activities

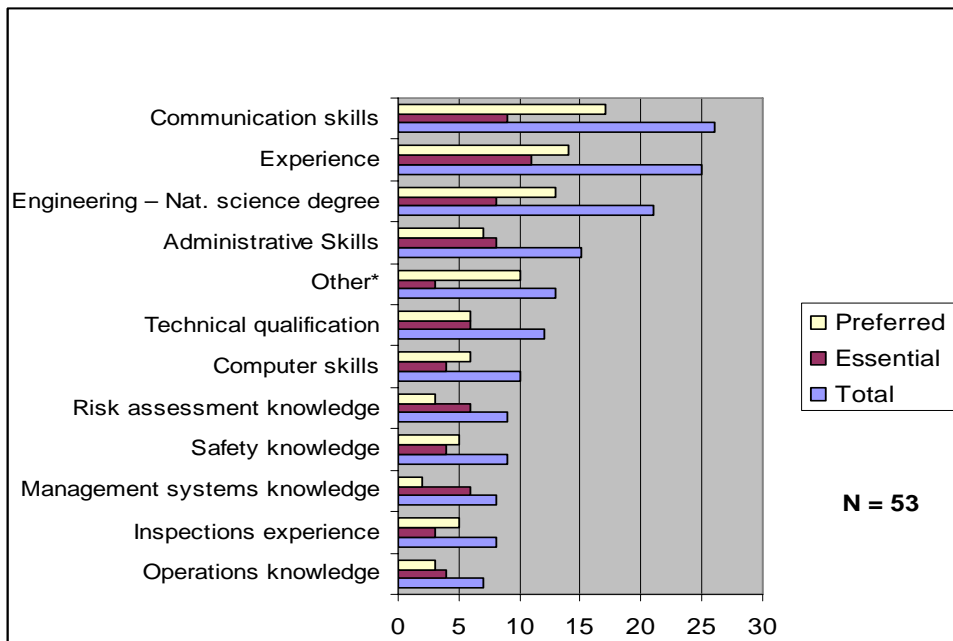
These types of training are described in detail in the section below as follows :

E1– Basic Seveso inspector training, which consists normally of both basic-generic and basic-Seveso training

E2 – Periodic training and professional development for Seveso inspectors, that is, structure and content

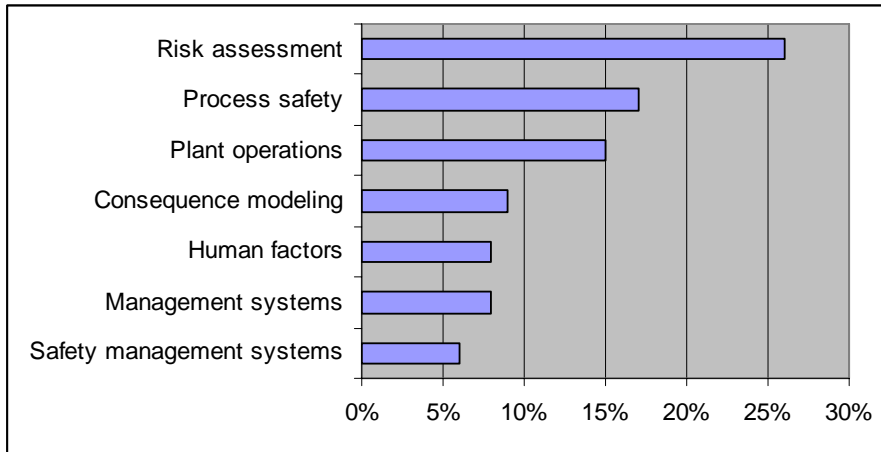
E3 –Different types of ongoing training/professional development activities for Seveso inspectors. This section describes the variety of ways in which the periodic training described in E2 is actually implemented by various countries or individual authorities.

Figure 6: Essential and Preferred Competencies for Inspecting Seveso Installations



- **A few respondents (<10%) also listed such qualities as knowledge of legislative requirements & procedures, report writing skills, knowledge of chemistry, auditing knowledge, language skills**
- **“Other” qualities were primarily personal attributes, such as self-confidence, leadership skills, courage, team player, humility, objectivity, sense of mission, acceptance of unfinished nature of the job.**
- **** Occasionally additional technical knowledge/experience were cited, , e.g., investigative skills, environmental protection, civil protection**

Figure 7: Technical Training Priorities of Surveyed Inspectors (N = 53)



C1.

E1. Basic Seveso inspector training

- **Formal basic training.** From the workshop and survey results it appears that basic training exists in the majority of inspection programmes (confirmed by 80% of respondents to the survey).

Standardized course list or material. At least seven inspectorates (18%) represented in the survey were reported to have a standard set of training courses, although some other inspectors reported a more or less standardized “self-study” programme. However, the workshop presentations suggested that the percentage was probably higher than represented in the survey. Such decisions are not always driven by resource limitations but also by the organization’s role in Seveso and its philosophy and priorities. For example, some authorities tend to hire more experienced professionals and tailor coursework to the individual.

Figure 8: Non-Technical Training Priorities of Surveyed Inspectors (N = 53)

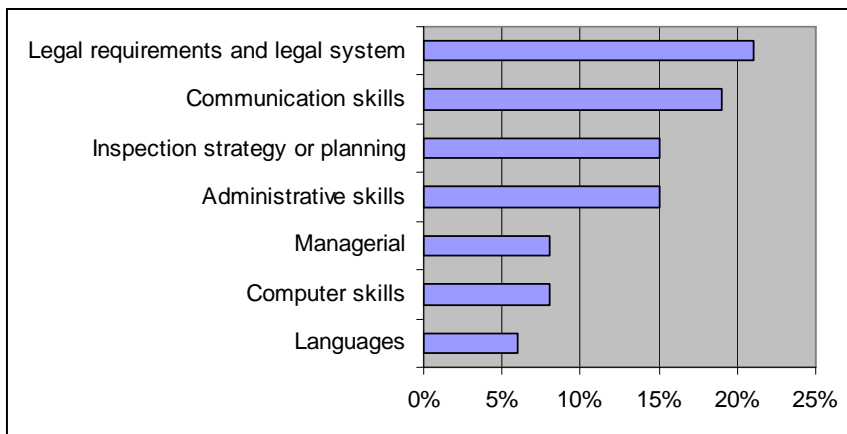
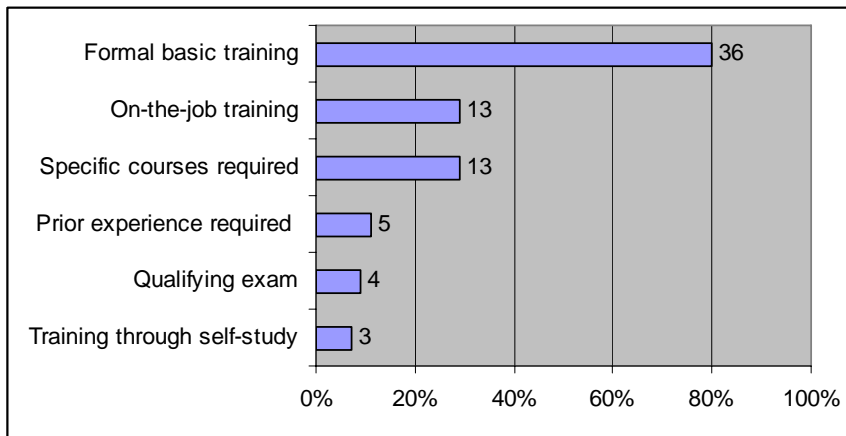


Figure 9: Basic Seveso Inspector Training of Surveyed Inspectors (N = 45)

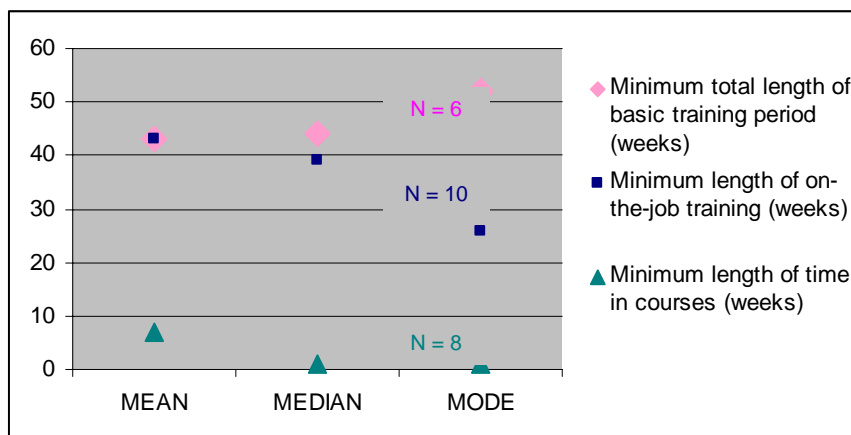


- It should be noted also that some authorities also tied training course work to promotion to a more senior grade level.
- **Topics covered.** At minimum, formal courses usually consist of regulatory obligations, the legal system and inspections strategy. Many Seveso inspectorates have other inspection responsibilities and so often basic training is not oriented only towards Seveso. However, many basic training programmes also include material on plant operations and process safety (40% and 33% respectively in the survey).

ANNEX 2 contains examples of training syllabi used by different Seveso inspectorates.

- **Duration of basic training coursework.** As shown in Figure 10 (p. 24) The duration of basic coursework (i.e., all basic courses offered in total) varied considerably. A length of 3-6 months was cited by a number of countries. However, the period of formal training courses was much shorter in some countries (sometimes only a week). probably because of such factors as 1) a preference for self-training rather than formal courses and/or 2) the tendency to hire more experienced professionals, formally trained specialists (e.g., emergency responders) or to hire internally from other inspection programmes.
- **“On-the-job” training.** Training on the job was clearly considered by all inspection programmes an essential element of training. From the workshop it is evident that virtually all programmes provide on-the job training. For this type of training the new inspector accompanies more experienced inspectors to inspections for a period of time ranging from a few months to a year in some cases.

Figure 10: Duration of Basic Training Elements According to Surveyed Inspectors



- Duration of on-the-job training period.** The main difference between approaches tends to be the duration of this period. A duration of three to 6 months seemed to be the standard minimum but several authorities reported longer on-the-job training periods (nine months to a year). In some authorities inspection responsibilities also increased gradually over a period of years, starting with more simple regulatory requirements and moving to more complex inspections over time.

E2. Periodic training and professional development. Most inspection programmes offer some kind of periodic training (see Figure 11, p. 26) but resources availability and formality of such training varies considerably.

- Definition of periodic training.** The definition of periodic training should be considered very broadly. A portion of authorities have formal structured courses available for professional development of inspectors (from the survey and workshop this portion is estimated to be between 10-20%). In some inspectorates these include courses specific to Seveso inspections and in other inspectorates, formally offered courses are limited to generic inspection, enforcement and administration topics. Where formal courses are not available on Seveso-specific topics, inspectorates may create additional opportunities for this training outside the formal training system, such as ad-hoc courses, technical workshops and inspector exchanges. In many inspectorates, these events are the only opportunity for periodic training.
- Duration and frequency of periodic training.** If periodic training is defined as above, it can be estimated that most inspectorates regularly offer

Figure 11: Status of Periodic Training According to Surveyed Inspectors (N = 42)

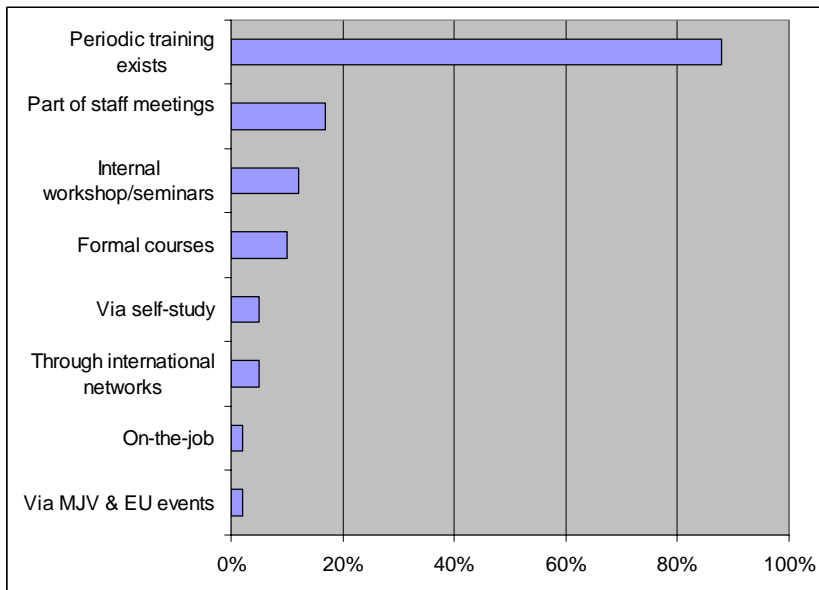
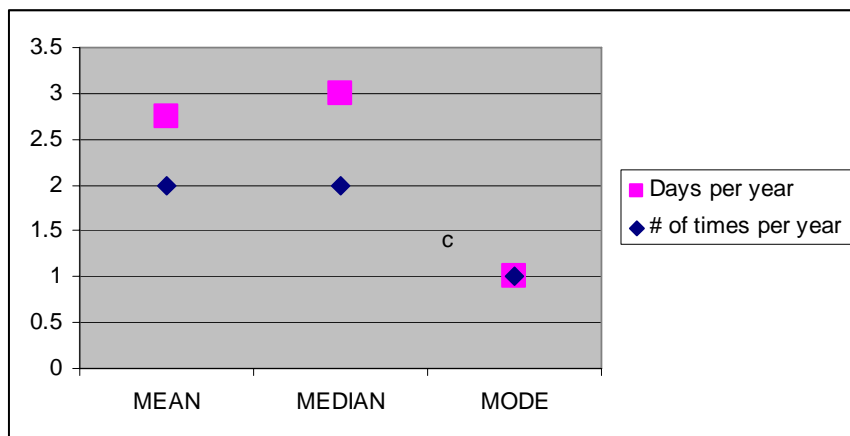


Figure 12: Frequency and Duration of Periodic Training



opportunities for periodic training (37, or 88%, of 42 respondents). The frequency of periodic training ranges (on average) from 1-2 times a year (excluding certification or degree course work), with each event lasting anywhere from one day to up to a week and occasionally 2 weeks (see Figure 12).

- **Focus of professional development.** Professional development generally aims at one or more of the following objectives:
 - Improving technical expertise associated with major hazard control. These skills are generally of a scientific or engineering nature or (e.g., identifying and controlling potential reactive hazards) or tool-based (e.g., using analytical software such as PHAST).

- Maintaining current knowledge on regulatory obligations and legal procedures for enforcement. Inspectors need to keep abreast of changes in the regulatory and legal reference frameworks.
- Improving administrative skills including inspections management and strategy. These areas of study include strategic, organizational, managerial and communication aspects of Seveso inspections.
- **Training topics.** Discussions about ongoing training among Seveso inspectors focus mainly on training topics specifically related to risk assessment and risk management on Seveso sites. Administrative topics (e.g., communication skills and report writing) are also often emphasized.

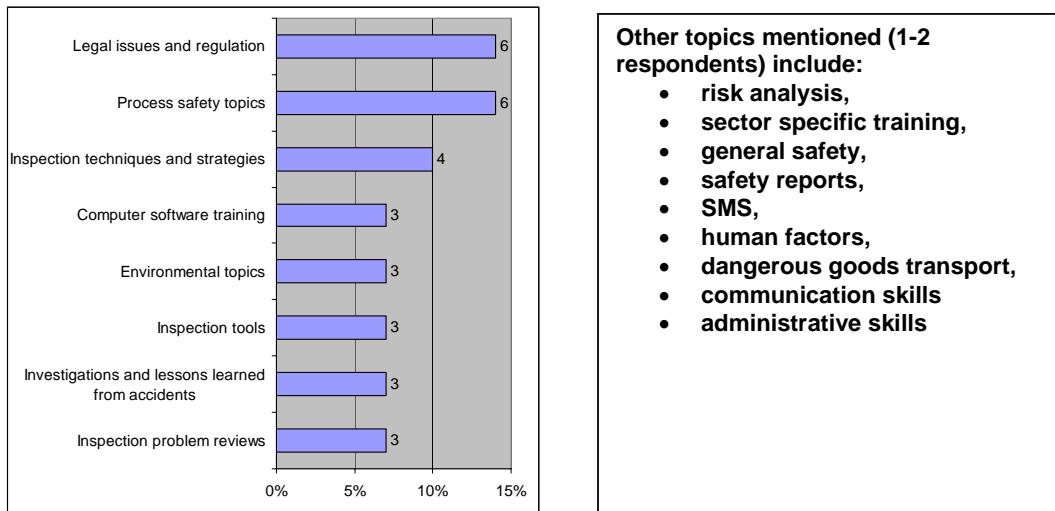
E3. Different types of ongoing training/professional development activities

E.3.1 Formal training opportunities for professional development

Typical training content as described by the surveyed inspectors is shown in Figure 13. Opportunities are usually structured in a number of typical ways, in particular:

- **Formally established training programme managed internally.** Some inspectorates, especially larger inspectorates, have formal training academies or regularly organized training courses internally for professional development.
- **Formal arrangements with external providers.** Some inspectorates tend most often to organize training courses using external providers and sometimes make standing arrangements with one provider (university) for specialized courses. Inspectorates that do not have formal professional development organized internally use a number of options, including self-study and ad hoc training with internal specialists.
- **Continuing education support.** Some inspectorates provide incentives, such as financial assistance, salary increases or paid study time, for earning a particular degree or safety certification. Some inspectorates require inspectors earn certain credentials prior to a certain level of promotion.

Figure 13: Typical Periodic Training Content Identified by Surveyed Inspectors (N = 42)

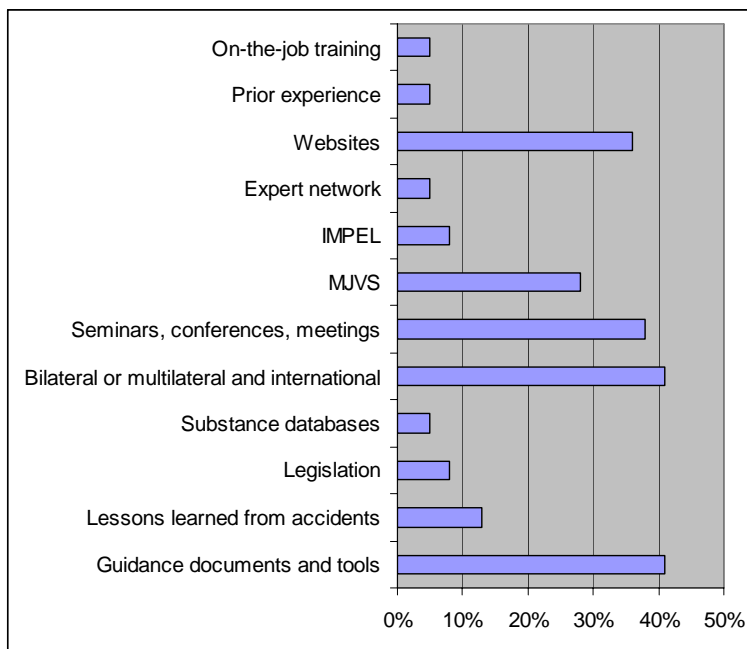


E.3.2 Professional development and training support outside of formal training programmes

Several other activities besides courses have proven to be effective as ongoing training and professional development (and authorities with formal programmes also tend to have these activities):

- **Internal meetings between inspectors - all inspectors, inspectors of specific industrial sectors, etc.** Many inspection programmes encourage frequent exchange between inspectors for consultation on specific technical issues or inspection problems and to share lessons learned from inspections and accident investigations. Such exchanges may take place during routine staff meetings or in regular (e.g., quarterly, semi-annual) meetings specifically aimed at exchanging information on inspection and risk management practices.
- **Periodic workshop (e.g., annual, biannual) for Seveso inspectors.** Sometimes inspection programs will organize one- or two-day events on a less frequent basis (annual, biannual) for professional development of their inspectors. The programme content and structure varies with the perceived needs of the inspectors. It can consist of technical training on a particular topic, exchange of lessons learned and best practices, or a mix of the two.

Figure 14: Other Valuable Resources and Opportunities for Training (N = 39)



- **Joint training with other national and regional inspectorates.** Some countries formally organized joint training with other Seveso inspectorates. Periodic meetings or workshops maybe organized to promote consistent professional development and foster information exchange among all Seveso inspectorates in the country.

The degree of joint activities can depend on how involved different inspectorates are in Seveso. (In some countries one inspectorate dominates and the others have few responsibilities). However, it should be noted that sometimes joint exchanges/training are not arranged for practical reasons and these occur more frequently in countries that have made co-operation among inspectorates a priority.
- **Ad-hoc training and consultation from internal specialists.** Some inspectorates have encouraged Seveso inspectors to specialize in key technical competencies (e.g., human factors, SMS, risk-based inspections). These specialists are encouraged to follow professional development according to their specialty. In addition these internal specialists may also serve as training resources for other staff.
- **Ad-hoc training courses or consultation organized with external provider.** When a training need arises that cannot be satisfied by internal resources, an external provider may be hired for this purpose.
- **International exchanges.** Inspectorates in most countries also value international exchanges through the European Commission’s Mutual Joint Visit Programme for Seveso Inspections (MJVs) and IMPEL conferences and workshops.

F. General summary and conclusions

Table 4 on p. 31 provides a very general summary of the range of approaches to Seveso inspector training across Europe.

In addition some general conclusions can be drawn from the detailed descriptions of competency and training practices in Seveso inspection programmes, one can note the following:

- **Individual inspectors should be well-equipped with the proper competencies so that their inspections have a real possibility of improving risk management on their Seveso sites.** Control of major hazards requires fundamentally a multi-disciplinary expertise, and competencies in each of the disciplines is generally acquired through experience and training. The central challenge of the inspection authority is to match inspector experience and competency with the inspection plan of the inspector.
- **There is no standard universally applicable syllabus for training Seveso inspectors.** There is no specific course structure that can be recommended to guide competent authorities in building their Seveso inspection training programmes. The objectives and content of training programmes are linked directly with the perceived role and obligations of the inspection authority in inspection and enforcement of the Seveso directive in their country. Moreover, competency needs can be addressed in numerous ways using a combination of competency requirements, basic plus periodic training.
- **Competency requirements vary considerably depending on the needs and objectives of the organization's Seveso inspection programmes.** The emphasis on specific professional credentials (beyond a university degree), experience and specific skill sets was not uniform across authorities. These aspects were influenced by a variety of factors unique to the organization, including its staffing and training strategy, the experience and competency of existing inspections staff, and the availability of appropriately experienced and skilled individuals in the work force.

Table 4: Summary of the Various Approaches to Seveso Inspector Training in Europe

Type of Training	Structure	Content	Duration
Basic training	On the-job training is an essential component in most countries. In addition, many countries have established specific courses. In some authorities, a test or series of tests must be passed.	At a minimum, courses usual cover the legal system, regulatory obligations, enforcement and inspections strategy. Additional content varies considerably from country to country.	Considerable variation starting with a minimum of a week up to 6 months in some countries. On-the-job training ranges from a few months to a year.
Periodic training	Very broadly defined. Can include formal training programmes and courses as well as ad hoc professional development opportunities organized locally as well as internationally. Formal courses on specific topics as well as exchange of good practice and lessons learned are included in this definition. Several countries regularly organize joint training for all its Seveso inspection authorities.	Focus varies with time and inspection objectives, but generally tends to be either improving technical or administrative skills, or updating regulatory knowledge. Some authorities link inspector grades with the amount and type of training completed. Needs and strategy related to maintaining competency in specialized areas of industrial safety also influence training objectives.	Usually ranges from 1-2 days to a couple of weeks per year. In some countries training is fixed for a specific number of days each year, but in many countries it depends on the need and availability of training opportunities.

- **Basic training, and especially on the job training, are considered essential.** Seveso inspection programmes generally consider that Seveso inspectors must have some form of basic training as a foundation for their work. Training on the job is considered a critical element of training by all inspection programmes. In contrast, the emphasis on coursework and the content of courses offered as basic training varied considerably across countries and inspectorates.
- **Periodic training is also highly valued but definition and content of such training varies even more than basic training across authorities.** Local influences play an even more critical role in determining the nature and content of periodic training. Resources in particular may influence the frequency and systematic structuring of periodic training opportunities. In addition, the objective of inspections and other roles played by inspectors (e.g., review of safety reports) and inspection/accident experiences will strongly determine content. Periodic training priorities may be influenced by a perceived need to maintain or improve co-ordination and consistency with other authorities internally and externally.

- **Seveso inspectors generally view professional development as a combination of specialized training, good practice and lessons learned exchange, and improvement of general professional skills.** The desire to improve “technical skills” was expressed by a majority of participants (when combining both generic and specific responses). Where such skills were specifically identified risk assessment, process safety and plant operations topped the list. Legal, communication and administrative skills were also highly valued by a wide number of participants as well as training on overall inspection strategy.
- **National and international seminars and conferences to exchange good practice and lessons learned were considered valuable learning resources.** In addition to participation in international events such as the EU Mutual Joint Visit workshops and IMPEL conferences, several countries host national events and have established national networks of inspectors. Survey responses were particularly strong in emphasizing the value of any opportunity to exchange information with other Seveso inspectors.

An opinion of the appropriate Polish authorities regarding the study developed by the Technical Working Group for Seveso II Inspections on the competences and trainings for the inspectors in charge of the Seveso II implementation process inspections and on the recommendations and summaries of the current practices in the Member States and in other states implementing the Seveso II Directive.

Following the survey of the study of the Technical Working Group for Seveso II Inspections regarding the competences and trainings for the inspectors in charge of Directive implementation inspections within the EU, we give our consent to the presented conclusions and further recommendations within the framework of the Seveso inspectors trainings.

The presented document constitutes an extensive source of information concerning the training systems and the requirements imposed upon the states, where the Seveso II Directive has been implemented. This information may be used for improving the inspector training process.

We confirm the necessity to conduct further works and to establish the types of enterprises the coordination and integration of which is beneficial to the effectiveness of inspections. The need for constant improvement and development of the skills of the employees appointed to fulfill the obligations resulting from the Directive should be emphasized.

The authorities responsible for the implementation of the Seveso II Directive in Poland present the following position in the respective sections:

Section A – The general principles and factors that impact the selections regarding competences and trainings within the states executing the Seveso II Directive

- a significant factor that impacts the competence-related requirements and trainings programmes for the inspectors in charge of inspecting the execution of the Seveso II Directive comprises the inspection framework as set forth by the State/Inspectorate;
- financial and personnel options are a very important factor.

Section B – The competence-related requirements for the inspectors in charge of the Seveso II Directive implementation process inspections – The common principles and examples of good practice

▪ Competent employees with vast knowledge, skills and professional experience are required for the fulfillment of the inspection-related obligations resulting from the Seveso II Directive. These competences and skills should be improved on a systematic basis and the knowledge should be broadened to sustain high substantive level and to keep up with technological development of the industry.

As correctly noticed in the study, it would be desirable to employ the inspectors recruiting from the industrial sectors with expert knowledge and experience. In addition, the inspectors in charge of Directive implementation processes inspections should have a higher education degree (technical majors preferable) and appropriate skills within the communications and self-assertion framework.

Moreover, due to the requirements for specific skills, knowledge and experience, it is advisable to initially test the competences of the applicants for such job positions. A minimum framework of skills, education level and professional experience should be standardized in each Member State regardless of the role of the appropriate institution within the Directive implementation framework.

Section C – The training programmes for the inspectors in charge of inspecting the execution of the Seveso II Directive – The general principles and examples of good practices

In addition to professional knowledge, trainings and acquired experience are the key elements in improving the inspection-related work. The trainings should be of sectoral type and oriented at the specific needs of the inspectors, where the technical aspects addressed by the training professionals coming from various industries should prevail.

It would be desirable to provide specialized trainings with risk assessments and safety management systems, process safety trainings, information and experience exchange through periodic consultations and working meetings. It is also purposeful and fully justified to carry out formal legal trainings.

The provision of support through instruction trainings and guidelines aimed at improving interpersonal skills also seems to be a significant element in skill improvement process.

In conjunction with the aforementioned, the trainings for the inspectors in charge of Directive requirements compliance inspections should:

- be divided into initial, periodic and professional (improving) trainings as per defined industries (e.g. chemical synthesis, fuel storage and reloading, etc.), but the initial training should be long-term and supervised by an experienced inspector;
- be completed, according to a training schedule, by different companies and institutions, including science and research facilities with appropriate experience, for example within industrial technology implementation or safety precautions, safety management, risk analysis areas, etc.;
- be supported through the exchange of experiences between the inspectors in the same states and between the Member States, e.g. in the form of workshops, seminars or conferences;

NOT FOR DISTRIBUTION – Version 4

- conclude with a certificate confirming the acquisition of specific knowledge or skills;
- include Directive regulations and appropriate national regulations and examples of good practices.

In addition, it is also advisable to:

- organize common trainings for the inspectors carrying out Seveso II Directive inspections, employed across various inspection institutions, to establish and maintain common principles and to distribute competences;
- supplement the training system with a system designed for supporting various forms of self-education;
- organize thematic trainings for the inspectors carrying out inspections at Seveso facilities within specific industries and with classification into installation types, methods of environmental impact and categories of stored hazardous substances, and also within the framework of spatial planning for the facilities posing a risk of serious failure.

Section D – Summary and conclusions

Based on the presented conclusion, we agree that it would be unfeasible and completely unjustifiable to develop a standard, multipurpose training programme for the Seveso inspectors. This results from the fact that both the principles and the content of the trainings depend on the structure of the appropriate Seveso inspection services and the framework of the obligations imposed upon such services and also the industries that prevail within the inspection service areas.

It seems justifiable to standardize the framework, the forms and the minimum frequency for each State Member.

ANNEX 2: Examples of Training Syllabi of Different Seveso Inspectorates

The following documents were kindly provided to us by various Seveso inspectorates participating in the competency and training workshop. More information on training syllabi in Seveso inspectorates across Europe can be found in the workshop presentations, available on the Seveso inspections website at:

<http://139.191.1.51/typo3/index.php?id=435>

**A. Basic training programme – FPS Employment, Labour and Social dialogue
Belgium - Summary**

1. Organisation and functioning of the department

2. Introduction to labour safety and process safety

- Legal context labour safety
- Legal context Seveso
- Legal context classification and labelling of dangerous substances

3. Introduction to the expertise domains

3.1. Typical process installations

- Warehouse storage
- Flammable liquids
- Liquefied flammable gases
- Reactors

3.2. Layers of protection (highlights = major parts)

- Fire safety of buildings and process installations
- Corrosion phenomena
- Pressure relief systems
- Pressure equipment
- Explosion protection
- Glassware
- Human factors
- Safety instrumented systems
- Pipelines
- Emergency planning
- Storage tanks
- Pumps and compressors
- Risk analysis for process installations

3.3. Dangerous work

- Isolated work
- Confined spaces
- Organisation of shutdowns
- Contractor work
- High pressure work
- Working on height
- Work permit system

3.4. Safety management systems

- Risk based inspection
- Safety management systems (general)

3.5. Labour safety domains

- ...

4. Practice

- 4.1. Accident investigation
- 4.2. Evaluation of safety report
- 4.3. Performing systematic seveso inspections

B. An Example of In-House Training Provided by HSE’s Hazardous Installations Directorate (HID) for Inspectors of Seveso Sites in the UK³

Level 1 Courses		
HID A	Introduction to HID and Hazardous Installations	A basic introductory course for all inspectors new to HID
Level 2 Courses		
HID U	Principles of Regulation in HID	Introduction to the principles of regulation at major hazard sites for new inspectors and some administrators
HID B	Principles of Process Safety	Provides regulatory inspectors with an understanding of the hazards posed by flammable/explosive liquids, gases, vapours and dusts and the measures necessary to control or mitigate the risks
HID C	Principles of Human Factors	Provides regulatory inspectors with the knowledge and tools to help them address a range of significant and commonly encountered human factors issues
HID D	Principles of Major Hazard Risk Assessment	Provides regulatory inspectors and non-Predictive specialist inspectors with an understanding of the techniques commonly used by HID and industry to identify hazards and assess risks
HID E	Introduction to Basic Chemistry, Unit Processes and Plant	Provides regulatory inspectors (and some specialists) with a basic knowledge of chemistry, chemical processes and process plant
Level 3 Courses		
HID F	Control and Instrumentation on Process Plant	Provides regulatory inspectors (and some non-C&I specialist inspectors) with an understanding of process control systems and safety instrumented systems in chemical, petrochemical and

³ Please note that this example is representative only and that such technical training is only part of the training of an HSE Seveso inspector.

		oil and gas production process plant
HID G	Assessing Health and Safety Management	Training for regulatory and specialist inspectors in techniques for the inspection of health and safety management
HID H	Project Skills for Assessment Managers	Provides regulatory inspectors with effective project management skills, for use in their role as safety report assessment managers
HID I	COMAH Emergency Response	Provides inspectors with the skills and knowledge needed to assess the effectiveness of emergency plans and emergency response arrangements at upper tier COMAH establishments
HID L	Analytical Investigation Methods (AIMS)	Since replaced by an HSE-wide AIMS course
HID N	Personal Protective Equipment	Provides inspectors with practical knowledge of PPE, to enable them to assess the adequacy of arrangements for its selection, use, storage and maintenance
HID O	Confined Spaces/Permit-to-Work	Provides inspectors with training in the maintenance of health and safety in confined spaces and in permit-to-work systems in the chemical and oil & gas extraction industries
HID Q	Process Safety Standards	A follow-up course to HID B (Principles of Process Safety), to equip regulatory inspectors and non-process safety specialists with knowledge of enforceable standards for process safety hazards
HID T	COMAH Safety Report Assessment	An introduction to assessment processes and procedures for all inspectors involved in the assessment of COMAH safety reports
HID Z	Refinery Inspection	Equips inspectors to target, plan, manage and undertake effective interventions at petroleum oil refineries

Training Curriculum for Seveso Inspectors in France

