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ENVIRONMENT DIRECTORATE
JOINT MEETING OF THE CHEMICALS COMMITTEE AND
THE WORKING PARTY ON CHEMICALS, PESTICIDES AND BIOTECHNOLOGY

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Working Group on Chemical Accidents

RECORD OF AN EXPERT MEETING ON ADDENDUM TO OECD GUIDING PRINCIPLES FOR CHEMICAL ACCIDENT PREVENTION PREPAREDNESS AND RESPONSE (13-14 April 2010, OECD Conference Centre, Paris)

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This document contains the record of an Expert Meeting held on 13-14 April 2010 at OECD in Paris, on the development of an Addendum to the OECD *Guiding Principles for Chemical Accident Prevention, Preparedness and Response*, based on the conclusions and recommendations from six workshops that have been sponsored by the Working Group on Chemical Accidents (WGCA) since the publication of the second edition of the *Guiding Principles* in 2003.

The Agenda for the meeting is presented in Annex 1. The list of participants is in Annex 2.

SUMMARY RECORD OF THE EXPERT MEETING (13-14 APRIL 2010) ON THE DEVELOPMENT OF AN ADDENDUM TO THE OECD *GUIDING PRINCIPLES*

Introduction

1. The objective of the Expert Meeting was to develop a proposal for an Addendum to the OECD *Guiding Principles for Chemical Accident Prevention, Preparedness and Response*, based on the conclusions and recommendations from six workshops held under the auspices of the Working Group on Chemical Accidents (WGCA) since the publication of the second edition of these *Guiding Principles* in 2003. Once developed, approved by the WGCA and declassified by the Joint Meeting (the parent body to WGCA), this Addendum will be published as a stand-alone document.

2. The Expert Meeting reviewed the tables of conclusions and recommendations (C&R Tables) from six workshops. These tables were prepared to help the WGCA decide which workshops' conclusions/ recommendations should be used to augment or amend the OECD *Guiding Principles*. The tables also include some general questions/issues that the WGCA might wish to consider before reviewing the individual conclusions and recommendations.

3. Six C&R Tables corresponding to the following workshops – presented by chronological order – have been prepared by the Secretariat and a consultant (*Francine Schulberg*, US):

- Communication related to chemical releases caused by deliberate acts (Rome, Italy, June 2003) [ENV/JM/ACC(2009)4]
- Sharing experience in the training of engineers in risk assessment (Montreal, Canada, October 2003) [ENV/JM/ACC(2010)1]
- Lessons learned from chemical accidents and incidents (Karlskoga, Sweden, September 2004) [ENV/JM/ACC(2009)5]
- Risk assessment practices for hazardous substances involved in accidental releases (Varese, Italy, October 2006) [ENV/JM/ACC(2010)2]
- Human factors in chemical accidents and incidents (Potsdam, Germany, May 2007) [ENV/JM/ACC(2010)3]
- Safety in marshalling yards (Paris, France, October 2007) [ENV/JM/ACC(2009)6]

4. Each C&R Table contains nine columns as follows:

- [a] is for numbering the entries;
- [b] provides the text of each relevant conclusion and recommendation;

- [c] identifies whether the text **is addressed by existing *Guiding Principles*** and, if so, by which paragraph;
- [d] indicates whether the text **modifies existing *Guiding Principles***, *i.e.*, brings a minor change or addition to an existing paragraph;
- [e] indicates whether the text **replaces existing *Guiding Principles***, *i.e.*, is a major change or a complete rewriting of an existing paragraph;
- [f] indicates whether the text could be considered as a **basis for a new paragraph in *Guiding Principles***, *i.e.*, has not yet been addressed in the existing *Guiding Principles*;
- [g] indicates whether the text does not modify or replace an existing paragraph, or lead to new paragraph in the *Guiding Principles*, *i.e.,* is not relevant for integration into the *Guiding Principles*;
- [h] sets out **a proposal for new or revised text** for the *Guiding Principles*, with possible new wording;
- [i] is to provide **Notes for the consideration of the Group**. For example, this column might be used to raise a question about the placement of proposed text or to ask the Group whether a recommendation has an impact on its Programme of Work.

Purpose of the Meeting

5. The Expert Meeting reviewed the C&R Tables prepared for the six workshops listed in paragraph 3, according to the Agenda presented in Annex 1. For each workshop, it:

- reviewed all the conclusions/recommendations listed in columns [a] numbering of the entries, and [b] **text** of each relevant conclusion and recommendation;
- gave its opinion on the content of columns [c] whether the text is addressed by existing *Guiding Principles*, [d] whether it modifies existing *Guiding Principles*, [e] whether it replaces existing *Guiding Principles*, and [f] whether it could be considered as a basis for a new paragraph in the *Guiding Principles*;
- gave its opinion on the content of column [g] that indicates whether the text is not relevant for integration into the *Guiding Principles*;
- discussed the proposals for new or revised text for the *Guiding Principles*, as set out in column [h]; and
- discussed the notes for the consideration of the WGCA, as set out in column [i].

Note: the content of column [h] was particularly important for discussion as well as the one of column [i] that also addressed recommendations for further work in the OECD Chemical Accidents Programme.

6. The Expert Meeting also discussed the comments received from:

- Canada on C&R Tables ENV/JM/ACC(2009)4 (Rome 2003), ENV/JM/ACC(2009)5 (Karlskoga 2004) and ENV/JM/ACC(2009)6 (Paris 2007);

- Germany on C&R Tables ENV/JM/ACC(2009)5 (Karlskoga 2004), ENV/JM/ACC(2009)6 (Paris 2007) and ENV/JM/ACC(2010)3 (Potsdam 2007); and

- United Kingdom on the six C&R Tables: ENV/JM/ACC(2009)4, (2009)5, (2009)6, (2010)1, (2010)2, and (2010)3.

Addendum to Guiding Principles

7. While reviewing the conclusions and recommendations from the six workshops, with the view of their integration into the *Guiding Principles*, the Expert Meeting was keen to get balance between what it is new and needed, and what already exists in the *Guiding Principles*.

8. The Expert Meeting agreed on a proposal for the integration into the *Guiding Principles* of the conclusions from the six workshops considered. The new text agreed upon to be part of the Addendum is highlighted in yellow in this record.

Addition to Chemical Accidents Work Programme

9. The Meeting made the distinction between a conclusion or recommendation that can be added to the *Guiding Principles* and a recommendation for further work that will be considered by the WGCA for possible inclusion into its Programme of Work.

Outcome of the Meeting

Lessons learned from chemical accidents and incidents (Karlskoga, Sweden, September 2004) [ENV/JM/ACC(2009)5]

10. The Meeting reviewed the twenty-one conclusions/recommendations numbered 1 to 21 in column [a] and described in column [b], and agreed on the following:

1. A new subsection on lessons learned will be created and placed immediately after the current Chapter 15.

2. A subpoint to 14.a.1 (Part D: Follow-up to Incidents – Chapter 14: Incident Documentation and Reporting – General Principles) concerning leadership will be added: "leadership, from the highest levels in enterprises and public authorities, is essential to ensure that lessons are learned from incidents and that appropriate actions are taken as a result". Moreover, a point to Industry's role with respect to prevention to capture the concept of 'eternal vigilance' will be added in Chapter 2 (Industry)."

3. **Nothing to do** (NTD) with respect to integration into the *Guiding Principles*.

4. NTD
5. NTD

6. NTD. The Canadian comment indicated that in Canada, High Value Learning events are tracked as part of the annual PRIM (Process-Related Incidents Measure) analysis performed by the chemical sector; over the years it has proven to be a useful measure. The Meeting suggested asking *John Shrives* (Environment Canada) to talk about his comment at the next WGCA Meeting in October 2010.

7. Add a third bullet to 14.a.1 (Incident Documentation and Reporting – General Principles) or amend 15.a.14 (Incidents Investigation – General Principles – Sharing the results of investigations) to include: "As far as practicable terminology across sectors should be harmonised at an international level to allow improvements in data sharing, accident investigation techniques and communication of lessons learned." Also clarify 'across sectors'.

8. NTD. The recommendation for establishing a network among existing major databases and competence centres for lessons learned from chemical accidents should be considered a possible addition to the Work Programme and therefore discussed by the WGCA.

9. Add the concept of general principles in lessons learned process in 15.a.11 (Part D: Follow-up to Incidents – Chapter 15: Incident Investigations – General Principles – Sharing the results of investigations), using the following text after re-wording to keep the correct balance between gathering new lessons and improving the implementation of measures: "Efforts should be made to improve the dissemination of lessons learned and implementation of appropriate actions in light of these lessons, rather than focusing on gathering new lessons."

10. NTD
11. NTD
12. NTD

13. NTD. The recommendation for converting lessons learned into lessons implemented should be considered a possible addition to the Work Programme and therefore discussed by the WGCA. Kim Jennings and Fran Schulberg will work together to develop a few general principles to elaborate the lessons learned process by the October WGCA Meeting.

14. NTD
15. NTD
16. NTD
17. NTD
18. NTD
19. NTD
20. NTD
21. NTD

Communication related to chemical releases caused by deliberate acts (Rome, Italy, June 2003) [ENV/JM/ACC(2009)4]

11. The Meeting agreed that a subsection on deliberate acts be developed, keeping in mind finding the balance between safety and security. Deliberate acts cover malevolent intentions causing harm – hostile, malicious acts – including sabotage, vandalism and terrorism. The term 'deliberate acts' will be defined at the beginning of this new section.

12. The Meeting reviewed the twenty-four conclusions/recommendations numbered 1 to 24 in column [a] and described in column [b], and agreed on the following:

1. An introductory paragraph to a subsection on deliberate acts could be: "Both public authorities and management of hazardous installations have roles and responsibilities with respect to the security and safety in the prevention of accidents caused by deliberate acts."

2. In relation with the precautionary and preventive measures that countries can take to prevent terrorism, a subpoint to paragraph 5.a.2 of the *Guiding Principles* (Emergency Preparedness and

Planning – General Principles) will be added: "The emergency planning process should take into account the possible effects of deliberate action causing a chemical release. Existing plans should be reviewed to address consequences of possible deliberate action."

3. NTD

4. Include the following recommendation in a subsection related to deliberate acts (immediately after the one above – point 2 – on authorities: "Operators should protect their facilities and transportation modalities with the goal of preventing malevolent activities leading to chemical accidents."

5. NTD

6. Add the following text in a new subsection on deliberate acts: "Countries (along with international organisations as appropriate) should exchange information, and assist each other, to improve their capacities to help prevent, prepare for and respond to releases of hazardous substances caused by deliberate acts." The Meeting suggested combining workshop's recommendations 6, 22 and 24 (see further) in a new text.

7. The Meeting suggested that new text be developed to be included in the main *Guiding Principles* that addresses the question of balancing open information and need to protect against security concerns. This should address the fact that information can be misused and therefore it is important to know who is receiving information.

8. Add the following text in a new subsection on deliberate acts: "Industry, public authorities and non-governmental organisations should co-operate, and establish partnerships, to enhance the security of hazardous installations, and improve their ability to prevent, detect, and mitigate deliberate acts intended to cause chemical releases."

9. NTD

10. Add specifics related to authorities responsible for domestic security, into the section on deliberate acts, and add a link to the *SPI Guidance*.

11. NTD
12. NTD

13. Add the following text to paragraph 5.a.2 (Emergency Preparedness and Planning – General Principles) of the *Guiding Principles*: "The emergency planning process should take into account the possible effects of deliberate action causing a chemical release. Existing plans should be reviewed to be sure they address possible deliberate action."

14. The Meeting agreed that consideration of possible attacks by external or internal offenders is an important specific issue, but it is not a principle.

15. Paragraph 2.d.7 (Part A: Prevention of chemical Accidents – Chapter 2: Industry – Operation) of the *Guiding Principles* will be amended to add subpoints as follows:

    - "non-site personnel should be kept identifiable and should be monitored appropriately;
    - special measures may be needed to protect areas that are particularly hazardous or at risk from interference from unauthorised people;

- employees should be made aware of the security rules and be involved in their development and implementation;
- a co-ordinated security system for all installations within an industrial complex could help address the difficulty of controlling a large area with a number of independent operators."

16. NTD
17. NTD
18. NTD
19. NTD
20. NTD
21. NTD
22. NTD
23. NTD
24. NTD

Safety in marshalling yards (Paris, France, October 2007) [ENV/JM/ACC(2009)6]

13. It was recognised that marshalling yard is a subset of transport interface, and that there is a need for addressing its specific aspects. The Meeting agreed that a new section on marshalling yards should be created in Chapter 17 (Part E: Special Issues – Chapter 17: Fixed Installations and Transport) of the *Guiding Principles*. Mark Hailwood and Fran Schulberg will work together to write text based on the model used for port areas and pipelines, i.e. the general principles already provided in the *Guiding Principles* apply to all transport interfaces, and the specifics for marshalling yards will be detailed in a subsection.

14. The Meeting reviewed the eighteen conclusions/recommendations numbered 1 to 18 in column [a] and described in column [b], and agreed on the following:

1. Add a definition of marshalling yards: "A marshalling yard is a place in transit and a link in the transport chain, railway marshalling yards are a special sort of station. They have a number of sets of sidings for receiving and preparing (Shunting) freight trains and for sorting the rail wagons to destination, with the aim of forming new trains and dispatching these to their destinations."

2. Add to the general principles on transport interfaces in Chapter 17 (Fixed Installations and Transport) the following text: "Chemical accident prevention, preparedness and response at transport interfaces should be addressed in an integrated way, taking into account chemical safety at the interfaces itself and the safety of the modes of transport (including high speed trains) that utilise the interface, as well as the public and facility potentially affected in the event of an accident."

3. Add consideration of high speed train carriages through marshalling yards: this has been taken into account in the above proposed text related to point 2.

4. NTD

5. Contradictions between legislations are a very important point. It was proposed to add a subpoint to 17.a.17 (Fixed Installations and Transport – Transport Interfaces) that says: "Care should be taken to avoid any contradictions in the various laws and policies that may apply to transport interfaces (which might include national and international rules for transport, legislation concerning hazardous installations, and local laws for land-use-planning)."

6. NTD

7. The Meeting suggested adding specific text related to the need for emergency planning to be taken into account during the planning and design of marshalling yards. For that, it would be necessary to hire the services of an expert in the area (may be from the US?).

8. NTD

9. Add a subpoint to paragraph 2.b.7 (Industry – Hazard Identification and Risk Assessment) that says: "The assessments should take into account the possibility of domino effects between hazardous installations in the area, and between transport systems and fixed installations."

10. NTD
11. NTD
12. NTD

13. NTD. The recommendation for developing an international database for incidents in marshalling yards could be considered a possible addition to the Work Programme to be discussed by the WGCA. A retrospective analysis to review past accidents and incidents in marshalling yards (i.e. those occurred before the European Seveso Directive be implemented), and lessons learned might be conducted by a consultant (student's work?). This work should take account of existing national and international databases for the rail industry.

14. NTD
15. NTD

16. Add a new paragraph to supplement 17.a.2 (Part E: Special Issues – Chapter 17: Fixed Installations and Transport – Transport Interfaces) that says: "The roles and responsibilities of all parties involved in and around a transport interface should be clearly defined."

17. NTD
18. NTD

Sharing experience in the training of engineers in risk assessment (Montreal, Canada, October 2003) [ENV/JM/ACC(2010)1]

15. It was recognised that training of engineers is not specific to chemical accident prevention, preparedness and response. For that reason, most of the workshop's conclusions and recommendations are not relevant for integration into the *Guiding Principles*. In addition, the workshop had a high degree of focus on professional training involving graduate, post-graduate, and professional engineers; to raise the level of safety, everybody should be educated and trained appropriately.

16. The Meeting brought up an issue of vocabulary: in some countries – e.g. Germany – improving 'competence' is part of education and training.

17. Most of conclusions and recommendations from the workshop which are relevant for integration into the *Guiding Principles* will be added at appropriate places in sections 2.d.34 to 2.d.41 of Chapter 2 (Part A: Prevention of Chemical Accidents – Chapter 2: Industry – Operation – Education and Training), unless it is specified otherwise.

18. The Meeting reviewed the eighty conclusions/ recommendations numbered 1 to 80 in column [a] and described in column [b], and agreed on the following:

1. NTD. The general obligations of engineers with respect to their professional responsibility are good recommendations for best practices, but are not relevant for inclusion into the *Guiding Principles*.

2. NTD
3. NTD
4. NTD
5. NTD

6. NTD. The development of guidance for engineers on responsibility, competence and code of ethics should be done in other organisations, not at the OECD.

7. NTD
8. NTD

9. Add the following text in a new section on education: "Engineers, safety specialists and others trained in process or chemical safety should be called on to raise the awareness of management and others employees, and educate them with respect to issues concerning safety and risk."

10. NTD

11. NTD. The *Guiding Principles* refer to risk assessment or safety management, not risk management.

12. Add the following text – and possibly combine with point 9 – in a new section on education/ transfert of knowledge: "Engineers and safety specialists have a duty to identify safety issues and to provide leadership with respect to safety issues to others in their communities in general."

13. NTD
14. NTD
15. NTD
16. NTD

17. Effective communication is an important point, not only for engineers. The Meeting agreed that this recommendation could be a new General Principle (possibly reworded): "It is important for engineers to be able to communicate effectively to their colleagues and superiors about safety and risk issues, taking into account the fact that others in the organisation may have different objectives and use different terminology. Such discussions can help reach an appropriate decision about risks and safety."

18. NTD
19. NTD
20. NTD
21. NTD

22. NTD. The Meeting noted that this recommendation concerning the engineers' awareness of the limits of their own knowledge is important for the management of human resources (including training and education). SPIs related to human resources should take account of knowledge needs assessments.

23. NTD

24. Take the following text and put it in a box: "The training of all engineers should, at a minimum, include concepts of risk and risk management, while recognising that specific training programmes should take into account the different educational systems in different countries/localities."

25. NTD
26. NTD
27. NTD
28. NTD
29. NTD
30. NTD
31. NTD
32. NTD
33. NTD

34. NTD. This recommendation is already in the *Guiding Principles*.

35. Add the following text either to paragraph 2.i.4 of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – Chapter 2: Industry – Other Industry Responsibilities – Product stewardship and assistance to other enterprises) or to another place in Chapter 2 that will be more appropriate for such a general statement: "Industry/trade associations and professional/standards organisations should be critical sources of guidance, consultant services, training, and technical tools, providing a mechanism for channelling the collective experience of their members towards the development of resources which can be made available to both members and non-members."

36. NTD
37. NTD
38. NTD
39. NTD
40. NTD
41. NTD

42. Add the following two paragraphs at appropriate places in Chapter 2 of the *Guiding Principles* (Note: this is addressed in the *Guiding Principles* for training of employees generally but not specifically with respect to engineers):

    - "Engineers must maintain their level of competence taking into account new technological, legal and other developments. This could be done through in-house training programmes, continuing education courses, on-line and written materials, training activities, etc."

    - "Companies and other organisations that employ engineers should support engineers maintaining their level of competence with respect to risk assessment and risk management."

43. NTD
44. NTD
45. NTD
46. NTD
47. NTD
48. NTD
49. NTD
50. NTD

51. NTD
52. NTD
53. NTD
54. NTD
55. NTD
56. NTD
57. NTD
58. NTD
59. NTD
60. NTD
61. NTD

62. Amend paragraph 3.c.1 of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – Chapter 3: Public Authorities – Safety performance review and evaluation) as follows –additional text shaded – to explicitly refer to sharing of experience: "They also provide a means for learning how to improve safety management systems, for sharing of experience, and can help promote industry action beyond minimum requirements."

63. Add the following text to paragraph 3.c of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – Chapter 3: Public authorities – Safety performance review and evaluation); "Inspectors should have the authority needed to fulfil their responsibilities, including the authority to enter installations, to obtain information, and to enforce requirements as appropriate."

64. NTD
65. NTD
66. NTD
67. NTD
68. NTD
69. NTD
70. NTD
71. NTD
72. NTD
73. NTD

74. NTD. The recommendation for having an international accreditation system for risk management programmes will be put in the list of topics for consideration by the WGCA.

75. NTD. The OECD is not the organisation to implement the recommendation for establishing an international group to investigate the need for a set of model curricula for risk management programmes.

76. NTD

77. NTD. The recommendation according to which efforts should be made to refine tools such as simulations, case studies and other tools designed to provide practical experience as part of the training programmes, will be amended to be broadened and submitted to the WGCA for consideration.

78. NTD

79. NTD. The statement that it would be helpful to increase understanding about what is meant by safety and tolerable levels of risk, and how this is affected by legal and cultural differences, is a good subject for research.

80. NTD. The OECD is not the right place to implement the recommendation for establishing an electronic discussion group or any other means to share good and bad experiences as well as methods used in training of engineers.

Risk assessment practices for hazardous substances involved in accidental releases (Varese, Italy, October 2006) [ENV/JM/ACC(2010)3]

19. The original idea for this workshop came from Canada that was looking for learning from others to develop their list of 'regulated' hazardous substances including the determination of thresholds of effects under accident prevention policies. The European Commission was interested in the topic as the recent adoption by the EU of the globally harmonised system (GHS) for classification of chemicals had impact on the Seveso II coverage for hazardous substances. The workshop was co-sponsored by Environment Canada's Environment Emergencies Division and the EC Major Accident Hazards Bureau (MAHB).

20. The main output of the workshop reflected its overall objective that was to share information and experiences on approaches used by OECD countries/regions to identify and select hazardous substances with respect to preventing – managing risks of – chemical accidents. The workshop examined commonalities and differences in approaches, criteria and methodologies employed to identify, select and regulate substances under chemical accidents programmes; it enabled participants to obtain a better understanding of each other respective approaches. The workshop also explored opportunities to facilitate greater data/information exchange and agreed on recommendations for further work for consideration and approval by the WGCA.

21. The Expert Meeting was of the opinion that the conclusions and recommendations from the workshop were mainly suggestions for further work which therefore should be considered possible addition to the Work Programme. It agreed on the following:

1. The WGCA should make a decision whether there is a need for further work in this area, e.g. establishing a minimum set of requirements for the scope of chemical accident regulations including shaping criteria of substances, quantities, technologies, exclusions and accidents histories. If the WGCA decides to work in this area, it should take into account current and recent work.

2. There will be no elements from this workshop in the Addendum to *Guiding Principles*.

Human factors in chemical accidents and incidents (Potsdam, Germany, May 2007) [ENV/JM/ACC(2010)3]

22. The Meeting reviewed the sixty seven conclusions/recommendations numbered 1 to 67 in column [a] and described in column [b], and agreed on the following:

1. NTD
2. NTD
3. NTD

4. Add to Annex I (Explanation of Terms Used) the following elements, write a short paragraph to introduce these additional definitions and refer to "James Reason (2001), Managing the Risks of

Organisational Accidents, Ashgate Publishing Limited, Aldershot, UK, ISBN: 1 84014 105 0" for the six behaviours asterisked:

- Human failure and human error: A human error is an action or decision which was not intended, which involved a deviation from an accepted standard and which led to an undesirable outcome. Human failure refers to errors and violations (i.e. non-compliance with rules or procedures)." (HSE, 2005, /94/ p. 83 according to HSG48).
- Slip: The plan is adequate but the actions fail to go as planned.
- Attentional slip of action is related to observable actions and associated with attention or perceptual failures.
- Lapse of memory is more internal event and generally involves failure of memory.
- *Mistake: an unsafe outcome resulting from an unsuitable plan of action carried out in the absence of appropriate procedures (that is, a knowledge-based mistake).
- Rule-based mistake: Misapplication of good mental rules or the application of bad mental rules.
- Knowledge-based mistake occurs when there are no pre-packaged solutions and problem solutions have to be identified on line.
- *Correct violation: correct performance achieved by deviating from inappropriate rules or procedures.
- *Correct compliance: correct (and safe) performance achieved through adhering to appropriate safety rules.
- *Correct improvisation: a course of action taken in the absence of appropriate procedures that leads to a safe outcome.
- *Misvention: Behaviour that involves both a deviation from appropriate safety rules and error(s) leading to unsafe outcome.
- *Mispliance: Behaviour that involves mistaken compliance with inappropriate or inaccurate operating procedures, leading to an unsafe outcome.

4b. Add text/bullet to – or combine with the first bullet of – paragraph 15.a.3 of the *Guiding Principles* (Part D: Follow-up to Incidents – Chapter 15: Incidents Investigations – Key elements of root cause investigations) that says: "In a team, the need for human experience should be considered."

5. NTD with respect to integration into the *Guiding Principles*. Ask the WGCA whether work is needed on developing guidance on safety climate and safety culture, and thus should be added to the Chemical Accidents Programme.

6. Add a bullet – or put in the first bullet of – paragraph 2.d.34 (Part A: Prevention of chemical accidents – chapter 2: Industry – Operation – Education and Training) about the role played by people within the chemical process including design, operation, control (internal and external inspection), and management (including maintenance).

7. NTD

8. Create a new subset entitled 'Alarm Management' in section 2.d of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – Chapter 2: Industry – Operation) and add the following text: "Every hazardous installation should have a clear alarm management strategy."

In the new Alarm Management section, also add the following elements:"(1) An alarm is a signal of a deviation from the normal situation which requires immediate action. (2) Every alarm presented to the operator should be useful and relevant to the operator. (3) Every alarm should have a defined response and adequate time should be allowed for the operator to carry out this response. (4) The alarm management system should include a strategy to prevent alarm flooding and overloading of the operator. (5) The quality of an alarm system should be continuously monitored, tested, analysed and improved."

9. NTD
10. NTD
11. NTD
12. NTD
13. NTD
14. NTD
15. NTD
16. NTD

17. NTD. The recommendation from the workshop concerning further work on the MARS data base (Major Accident Reporting System) to take into account the issue of human factors might be relevant for inclusion in the OECD Chemical Accidents Work Programme. However, the Meeting was of the opinion that recommendations related to the MARS data base should not be taken into consideration until the issue of analysing accidents reports be clarified at the EC level.

18. NTD
19. NTD
20. NTD
21. NTD
22. NTD

23. See 25
24. See 25

25. The workshop's conclusions numbered 23, 24 and 25 about safety climate and the assessment of safety culture need to be developed/elaborated before being added to paragraph 2.a.7 of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – Chapter 2: Industry – Safety culture – Safety policy).

26. NTD

27. Add to paragraph 2.f (create a 2.f.6) of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – Chapter 2: Industry – Technical and organisational modifications) the following text: "If a company undergoes a re-organisation or 'change', the management of safety should be a priority. Change should be managed as regards its embeddings in – and effects on – the organisational culture, which could lead to an enhanced understanding and conceptualisation of safety culture."

28. NTD
29. NTD
30. NTD
31. NTD
32. NTD

33. NTD. The conclusion that there may be shut down criteria in an organisation is true but should not be included into the *Guiding Principles*.

34. NTD
35. NTD
36. NTD

37. Add to paragraph 3.c.1 of the *Guiding Principles* (Part A: Prevention of Chemical Accidents – chapter 3: Public Authorities – Safety Performance Review and Evaluation) text that says (to be reworded): "(1) Inspections are a critical element in ensuring the overall safety of hazardous installations by checking to see whether safety management systems are in place and function appropriately with respect to both technical issues and human factors. (2) Guidance for inspections should address all relevant aspects, e.g. technical, organisational and human factors."

    Ask the WGCA if the development of guidance on methods to assist inspectors should be considered possible further work for the Chemical Accidents Programme. If so, this should be linked to the activity of the EC TWG 2 on inspections. Moreover, it was noted that the UK Health and Safety Executive (HSE) had a webpage approach with inspector toolkit, guidance, methods, etc. [http://www.hse.gov.uk/pubns/indg344.pdf]

38. NTD
39. NTD
40. NTD
41. NTD
42. NTD
43. NTD
44. NTD
45. NTD
46. NTD
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65. NTD
66. NTD
67. NTD

Conclusions and next steps

23. The Secretariat (Marie-Chantal Huet) will draft the record of the Meeting by the end of April 2010 and send it to the Chair (Mark Hailwood) and the Consultant (Fran Schulberg) for checking. The draft report will then be circulated to the meeting participants for review (first half of May 2010). Once approved by the participants, it will be made available to the WGCA (by end of May).

Addendum to Guiding Principles

24. The next step is the drafting of the Addendum to *Guiding Principles* based on the outcome of the April Expert Meeting. The Secretariat will arrange for a contract (by end of May 2010) for the work to be done (June-July 2010) by a Consultant (Fran Schulberg).

25. It is expected that the Addendum will be about twenty pages in length, is intended to be published as a stand-alone document, which refers to the *Guiding Principles* 2nd edition where necessary. A unified/integrated publication is not intended at the current time.

26. The drafting of the Addendum will consist of:

a) Writing a short explanatory introduction (one page approximately) to present the Addendum.

b) Putting together the elements of the addendum coming from five workshops, i.e. drawing up the new texts to be part of the Addendum as agreed upon at the meeting, including all the new texts shaded in this report (a few of them should be re-worded; around three new paragraphs have to be written).

c) Extracting the relevant parts from the *Guiding Principles* in order to put the new texts into context and make the addendum to be understood on its own (as far as is practicable).

27. As far as possible a draft Addendum will be reviewed by the Steering Group members and the chemical Accidents Bureau (July-august) prior to be submitted to the WGCA.

28. A draft Addendum to *Guiding Principles* will be submitted for review to the Chemical Accidents Delegations (Late August) in order that it can be discussed at the 20th WGCA Meeting on 6-8 October 2010.

List of possible further activities for the WGCA

29. The Secretariat (Marie-Chantal Huet) and the Chair (Mark Hailwood) will prepare a list of suggested further activities for the WGCA, as resulting from this meeting. They will also identify the topics for which more information is needed (e.g. safety cultures).

New publications related to Guiding Principles since 2003

30. The Secretariat will send the WGCA a note to ask delegates for providing the references of key publications related to the *Guiding Principles* since 2003 (by end of May).

ANNEX 1

Development of an Addendum to the OECD *Guiding Principles for Chemical Accident Prevention, Preparedness and Response*

Expert Meeting

13 – 14 April 2010, OECD, Paris

Starting at 9:30 A.M on Tuesday 13th April and
Finishing at lunch time on Wednesday 14th April

MEETING AGENDA

Welcome by Chair *Mark Hailwood* (Germany) and Rapporteur *Marie-Chantal Huet* (Secretariat)

Introduction of participants

1. Objective of the meeting

Develop a proposal for an Addendum to the OECD *Guiding Principles for Chemical Accident Prevention, Preparedness and Response*, based on the conclusions and recommendations from six workshops that have been sponsored by the Working Group on Chemical Accidents (WGCA) since the publication of the second edition of the *Guiding Principles* in 2003.

2. Review of tables of Conclusions & Recommendations (C&R) from six past workshops – Review of comments received on these tables

2.1 First series of three workshops (15th September 2009)

- Lessons learned from chemical accidents and incidents (Karlskoga, Sweden, September 2004) [ENV/JM/ACC(2009)5]
- Communication related to chemical releases caused by deliberate acts (Rome, Italy, June 2003) [ENV/JM/ACC(2009)4]
- Safety in marshalling yards (Paris, France, October 2007) [ENV/JM/ACC(2009)6]
- Comments on tables were received from Canada (one e-mail including comments on the three tables), Germany (comments on two tables: Rome workshop and Dutch (Paris) workshop), and the United Kingdom (comments on the three tables).

2.2 Second series of three workshops (15th March 2010)

- Sharing experience in the training of engineers in risk assessment (Montreal, Canada, October 2003) [ENV/JM/ACC(2010)1]
- Risk assessment practices for hazardous substances involved in accidental releases (Varese, Italy, October 2006) [ENV/JM/ACC(2010)2]
- Human factors in chemical accidents and incidents (Potsdam, Germany, May 2007) [ENV/JM/ACC(2010)3]
- Comments received: the three tables were circulated to WGCA for comments on 15th March 2010 with a deadline for response of 8th April 2010. Comments were on the three tables received from the United Kingdom, and from Germany on table (2010)3, Potsdam Human Factors workshop.

3. Conclusion and next steps

4. Other business

ANNEX 2

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