FINAL CONCLUSIONS AND RECOMMENDATIONS

(19 April 2001 – approved by rapporteurs and workshop chairs)

OECD Workshop on Audits and Inspections
related to Chemical Accident Prevention, Preparedness and Response
(Madrid, 6 – 9 March 2001)

This text sets out the draft conclusions and recommendations of the OECD Workshop on Audits and Inspections, hosted by the government of Spain and co-sponsored by the European Commission (EC). Approximately 110 experts attended the Workshop, representing 18 Member countries, 2 non-Member countries, the EC, industrial organisations, academia and other stakeholders.

Objectives: The Workshop had several objectives, including:

- learning from experience about audits/inspections programmes (including follow-up and enforcement) and improve information sharing among companies, countries and other stakeholders;

- providing input for the on-going revision of the *OECD Guiding Principles on Chemical Accident Prevention, Preparedness and Response.* This is particularly important in view of the use of the *Guiding Principles* worldwide; and

- helping identify areas where further international co-operative effort would be worthwhile.

It was noted that the Workshop also provided support for improving the level of trust between public authorities and industry (as well as other stakeholders), which could in turn lead to improvements in the level of safety of hazardous installations.

Definitions of key terms: It was recognised that the terms "audits", "inspections" and "reviews" are used differently in different countries and organisations. Therefore, it was agreed that the following definitions would be used for the purposes of the Workshop only, and no attempt would be made to reach harmonized definitions.

- Audit
  An examination performed either by or on behalf of an industrial operator (*self or internal audit*) or by an independent third party (*external audit*). The definition includes the resultant report(s) but not subsequent follow-up activities.

  An audit helps determine whether a company is acting according to requirements and internal policies. The purpose of a third party audit could either be for internal use by the operator or for use by an interested outside organisation (e.g., accreditation or insurance company).

- Inspection
  A control performed by public authorities (or by (an)other party/ies on behalf of the authorities). The definition includes the resultant report(s) but not subsequent follow-up activities.

- Review
  An examination to determine whether 1) a company's safety (and/or environmental) management system is consistent with its objectives and policies and 2) its objectives and policies are appropriate.

I. Introduction

1. The Workshop focused on the specific issues related to audits and inspections in the context of chemical accident prevention, preparedness and response[1]. However, it was recognised that audits and inspections are mechanisms for helping to monitor and assess the technical and management systems in place in a hazardous installation. In this regard, the Workshop emphasised that all such installations should have in place safety management systems including a number of specified elements. As further elaborated below, audits are just one element of a complete safety management system.

2. Furthermore, the Workshop recognised the common goal of audit and inspection programmes to support the continuous improvement of safety at installations handling hazardous substances.[2] This does not diminish the fact that the primary responsibility for the safety of installations rests with the operators. While realizing that every installation handling hazardous substances contain some degree of risk, they should be operated at a level of risk that is considered tolerable by the community while striving for a target of zero accidents.

3. The Workshop addressed the hierarchy of "monitoring" activities by industry, public authorities and others, for example ranging from:

   - continuous assessment of normal environmental, health, and safety management in a facility, to
   - self-assessment by the facility, to
   - a corporate audit of the facility, to
   - third party audits, to
   - inspections by public authorities.

[1] The scope of the Workshop, and the activities of the OECD Chemical Accidents Programme, involve all installations at which hazardous substances are produced, processed, handled, stored, used or disposed of in such a form and quantity that there is a risk of an accident which could cause serious harm to health or the environment. Thus, it addresses installations where chemical are produced or processed (with chemicals defined broadly to include, e.g., petroleum-based products) and other industrial or commercial operations at which hazardous substances are handled, used or stored.

[2] This does not diminish the fact that the primary responsibility for the safety of a hazardous installation rests with the operator of the installation.

These activities provide a "check" to see if the elements of the safety management system are in place and being appropriately applied to achieve the specified goals and objectives. In this hierarchy, each layer would, in effect, check any of the ones below.

4. Audit and inspection programmes can differ in terms of their objectives and approaches but some common elements, critical to success, can be defined. Specifically, such programmes should be defined in terms of a "feedback" loop (i.e., plan, do, check, act), designed to achieve continous improvement, which consists of a number of elements, e.g.:

- clearly defined goals;
- an identifed scope, recognising that if it is too broad then it may be difficult to achieve the desired objective;
- a schedule (including, e.g., a plan of action with time frames);
- appropriate expert(s) who are trained and qualified for the specific tasks and goals;
- a review of appropriate documentation as well as interviews with key personnel (including process operators);
- an identification of deficiencies and proper practices;
- a formal report of findings;
- management review to clearly define responsibilities for follow-up actions and a means for ensuring that the actions are carried out; and
- a demonstration that the follow-up actions have been carried out.

II. Audits

5. The term "audit" is used to describe different types of self-assessment activities carried out within a company. The Workshop did not attempt to define all types of audits, nor to identify the specific elements of an audit. However, it was agreed that companies should establish audit programmes, consisting of several levels of audits, in order to check various technical and management systems within a facility. For example, an audit at the plant level can provide detailed understanding of the daily activities of process operators and provide insights by those familiar with the systems; whereas an audit conducted by corporate headquarters or a third party can identify potential problems that might be overlooked by those directly involved in the operations, identify potential problems in company's organisational structure or in its audit system, and help generate new ideas for improvements.

6. An audit can serve a number of purposes. For example, it can provide: a management or strategic tool to define priorities for the allocation of resources; a mechanism for sharing of information and experience on best practices; a support to line management in the implementation of their responsibilities; input into a dialogue with public authorities and the public; and a mechanism to determine if company or legal requirements are being met.

7. The members of an audit team should be chosen based on the needs and objectives of the audit and should, as appropriate, include representatives of various functions such as operations, maintenance, engineering, safety, health and environment.

- The auditors should have practical experience and be well-trained to identify potential hazards in the facility. Training programmes should be designed to help auditors identify both deficiencies and good practices in the facility, understand how losses can result from deficiencies and record results. It was suggested that training could benefit by providing specific examples of good and bad practices, and field inspections techniques.

- The importance of including workers and their representatives in the development of audit programmes, and in audit activities, was stressed.

- It was also suggested that the public could be involved in audit activities. This could help to improve the level of trust between those responsible for operating a hazardous installation and the local community.

8. The audit should be designed to identify the actual status of the technical and management systems, through appropriate verification.

   - In addition to identifying any deficiencies or potential problems in the installation, the audit should also recognise successful actions, learning experiences, and improvements made with respect to safety.

9. Members of the audit team should be involved in the development of audit programmes, in order that they have a sense of "ownership" of the results of the audit.

10. Workshop participants emphasised the importance of interviewing key employees during audits, including operators. Such interviews help to check that the employees understand the operating procedures and are carrying out their tasks according to these procedures and provide insights as to whether the employees recognise the hazards involved and their role in controlling them. In addition, the interviews help to determine whether there is an appropriate flow of information in the company (i.e., there are two-way channels for information exchange) and to learn from employee experience.

11. Several tools were identified to support various aspects of audit activities including, for example:

    - risk-based tools and models which can help prioritise resources for audits; and
    - automatic monitoring, reminder, verification, and sign off procedures to support audit follow-up actions.

12. Companies should consider creating a system for improving the exchange of information and experience among installations within the company, as well as between companies, in order to improve the skill of auditors. This could include, as appropriate, exchange of audit teams (or joint visits) or sharing of audit reports.

III. Inspections

13. The Workshop recognised that inspections are a critical element in ensuring the overall safety of hazardous installations, by both checking to see whether relevant regulations, standards and practices are being met and whether safety management systems are in place and function appropriately. They also provide a means for learning how to improve safety management systems. Another important benefit from inspections is that they provide a basis for public confidence about the safety of hazardous installations.

    - Inspections are a key element, but only one part, of the control system of public authorities. Others elements include, for example, permitting, documentation, and reviews.

14. The Workshop noted that inspections may not be able to examine all safety-related aspects of a hazardous installation in great detail. Therefore, the primary function of an inspection should be to assess the management systems and, specifically, to consider whether they adequately address all necessary elements (in other words, to determine whether the company is fulfilling its responsibilities with respect to safety).

    - Inspections will undertake "deep drilling" (i.e., more detailed reviews) as part of an overall inspection plan (e.g., where authorities establish specific priority areas from a strategy plan) as well as in response to poor performance or other identified concerns (e.g., where the inspection reveals potential problems or there are concerns based on the authorities' review of the safety report).

15. In this regard, it was recognised that the role of inspectors has been changing over time. The traditional role of the inspector, to ensure compliance with all requirements, has broadened so that inspectors also play an important role in helping companies to identify potential problems (even if not subject to legal requirements) and to provide information about ways to improve safety performance.

    - It was noted that the overall quality and value of inspections have improved. This appears to be due, in large part, to better training and recruitment of qualified personnel.

    - Furthermore, inspection authorities are also involved in other, related activities designed to further the general objective of supporting improvements in safety, such as developing guidance for the establishment and implementation of audit programmes, providing consultation services, and facilitating voluntary self-audit programmes.

16. It was noted that competent authorities should establish programmes for inspections on an annual, or multi-year basis, establishing goals and priorities (e.g., to focus during one year on a particular subject such as multi-operator sites) and setting out timetables.

    - In setting goals and priorities, the authorities should take into account past performance of hazardous installations with respect to safety, as well as the nature and extent of hazards involved in the installations.

    - Normally, the inspection programmes would include provision for scheduled inspections, as well as for "spot checks" as suitable (e.g., where there is an area of

concern). Participants stated that both types of inspections have an important function.

- An important benefit of setting out plans well in advance is that it provides the opportunity for authorities to train and equip their inspectors to effectively carry out the plans.

(see also section VI below on "Co-operation Among Inspection Authorities")

17. The Workshop recognised that inspections can serve different objectives such as check of compliance with requirements, enforcement of laws and regulations, and on-site validation of safety reports.

18. It was recommended that public authorities develop standardized protocols and forms, to promote a structured approach to inspections and to inspection reports. This will allow improved understanding of trends over time and facilitate exchange of information and experience.

- Protocols should address the steps included in the inspection (from preparation, to the on-site visit, through reporting and follow-up).

19. It was noted that the inspections should be carried out by an inspector or inspectors supported by experts, as needed, to address the specific hazards of the installation.

20. The participants stressed the importance of follow-up to inspections to ensure that shortcomings identified are addressed in an appropriate and timely fashion, and that there is verification of actions taken. In this regard, it was suggested that there are a number of different tools available to public authorities for follow-up action items, depending on the severity of the concerns including, for example: notifications of changes to be made; identification of agreed actions and timetables; citations and fines; and, in the most severe cases, shutdown of facilities.

- A concern was expressed that follow-up to inspections is often delayed (including reviews by public authorities to ensure actions identified in the audit report have, in fact, been carried out). Further efforts may be needed to ensure that the operating company and authorities take the appropriate actions to close the loop in a timely manner.

21. The Workshop addressed the use of third parties (independent of government and the operating company) delegated to undertake technical or systems inspections on behalf of public authorities. A specific issue that was raised was the need to ensure the quality of such third parties (for example, through certification or accreditation schemes).

- It was emphasised that the public authorities retain their legal responsibilities for the inspections; they cannot delegate their responsibilities to the third party inspectors.

- It was noted that care should be taken to avoid the potential for conflicts, in particular where such third parties engage in both consulting as well as inspection services.

- The Workshop recognised that different countries (and companies) have different ways of organising their inspection activities and their relationships to audits. In addition to more traditional third party inspections, one example involved "user inspectorates", consisting of employees of a company, who are guaranteed as being independent to undertake inspections within that company.

IV. Reviews

22. In addition to regularly checking the implementation of established safety management systems and technical standards, through audits and inspections, the Workshop agreed that there is a need to:

- regularly review the adequacy of those management systems and standards, and revise them as appropriate, to help ensure that they continue to make sense and are consistent with best practice. Therefore, the objective of the audits/inspections should be the continuous improvement towards meeting established measures/standards, whereas the review should lead to the continuous improvement of the measures/standards; and

- periodically review the audit and inspection processes to help ensure that they continue to be appropriate and fully implemented. This may include benchmarking.

V. Relationship between Audits and Inspections (and between Industry and Public Authorities)

23. It was agreed that government inspectors and the regulated industry should co-operate, and should undertake to work closely in the planning and conduct of audits and inspections.

- In this regard, it was noted that a good system of regulations provides a necessary foundation for co-operation, and levels of trust, between industry and public authorities. The regulations provide the leverage needed to ensure that the public authorities can protect the interests of the public and employees.

24. The Workshop recognised the value of co-operation and co-ordination between authorities and industry. While they recognised that co-operation could cause some difficulties, there was agreement that the following benefits outweighed those difficulties:

- improving the efficiency of inspections and thereby make best use of limited resources (including manpower);

- providing a basis for the authorities to decrease the frequency, or change the nature of, inspections based on information provided to authorities;

- improving the ability of the parties to learn from each other, with the result that they are better able to carry out their roles and responsibilities (e.g., the audit process can be improved based on the advice of the inspecting authority); and

- increasing the level of trust and involvement among stakeholders (including employees and the public).

25. Co-operation between authorities and industry can take different forms, including improved co-ordination of activities and communication about areas of mutual interest and openness in discussing the results of audits, future inspection plans, and time schedules. In addition, co-operation can also help authorities build on the results of company or third party audits.

- The Workshop agreed that co-operation should not be extended to such a degree that audits and inspections are combined or integrated, as this could lead to a possible reduction in objectivity.

26. In undertaking to co-operate with companies, public authorities should ensure that this co-operation does not influence their ability to enforce the laws, nor should they be seen as having diminished their independence through such co-operation.

27. The Workshop recognised the benefits that could be achieved by a company as a result of their willingness to co-operate with public authorities in the area of audits and inspections. In order for co-operation to be successful, the operator must be competent and willing to address safety issues in a serious way.

- It was noted that if companies wish to reap the benefits of such co-operation, they should be willing to share the outcomes of audits with the authorities. In this regard, the question was raised about whether companies should be willing to reveal the problems identified in audits. It was suggested that such information could be an indication that the audits are serious efforts that are functioning properly.

- Voluntary initiatives can play an important role, especially where the inspecting authority is in a formative stage.

28. It was noted that the chemical industry has moved towards the integration of the management of safety, health and environmental issues in order to address these in a more efficient and effective way. Therefore, it was suggested that public authorities should consider making parallel efforts, and improve co-ordination in various aspects of health, safety and environment, where doing so would result in clear benefits.[3]

(see also section VI below on "Co-operation Among Inspection Authorities")

[3] The OECD Secretariat announced that another workshop is scheduled to address questions related to the Integrated Management of Safety, Health, Environment and Quality. It will take place 26 - 29 June 2001 in Seoul, Korea.

VI. Co-operation Among Inspection Authorities (within a country)

29. Chemical accident prevention, preparedness and response by definition involves a number of different authorities (e.g., those responsible for health, safety, environment, civil protection, etc.) at national, regional and local levels.

- Therefore, the Workshop noted the importance of co-operation among relevant authorities in order to maximize efficiency and minimize duplication of effort (especially given limited resources) and to most effectively contribute to the management of risk.

- Co-operation provides a number of related benefits, including an opportunity to: learn from each other; share resources, expertise and tools; benefit from different perspectives; minimise the likelihood of different authorities reaching conflicting advice or conclusions; facilitate improvements of regulations/standards; aid in conflict resolution (e.g., between safety and environment); and improve understanding and trust between authorities. Thus, co-operation should lead to greater consistency in approaches and results, between inspection teams within a country.

- As a result, in some cases there is political impetus, as well as self-interest, in pursuing further co-operation.

- The industry also benefits from such co-operation. For example, co-operation could result in more targeted inspections, avoidance of duplication, and consistency in approach by the various concerned authorities. This should lead to fewer interruptions in business activities and allow employees to more effectively participate in inspections.

30. There was consensus that effective co-ordination of inspections among the various concerned authorities requires hard work, in order to establish mutual understanding of the different cultures, laws, and structures of each of the authorities.

- It was recognised that the authorities should seek to co-ordinate during the various phases of the inspection process, as appropriate (e.g., preparation, on-site inspection, report and follow-up).

31. As part of the steps necessary for effective co-ordination, authorities should establish:

- a clear division of tasks, with identification of roles and responsibilities for various aspects of the inspections;
- mutual understanding among the authorities of all relevant aspects of the authorities' culture including their legal instruments, policies, and procedures;
- co-ordinated training activities;
- clear lines of communication; and
- an identified mechanism for dealing with conflicts.

32. It was agreed that a co-ordinated inspection does not imply that the inspection is fully integrated. Rather, the objective should be to avoid duplication of effort and to share the burden of those aspects of inspections where there is a shared interest.

- It was recognised that certain aspects of inspections are more suited for co-operative efforts than others. This is largely dependent on the nature of the laws involved, and the culture of the different inspection authorities. For example, it was suggested that, as a general rule, it is much more difficult to co-ordinate non-scheduled inspections than scheduled inspections.

- While it may be difficult, efforts should be made to co-operate when enforcement is contemplated to ensure accurate and proportionate enforcement actions.

33. An issue was raised about the allocation of responsibility for inspections within a country and, in particular, for those cases in which local authorities are responsible for inspections based on national legislation. In some cases, the inspection authority at local level is charged with undertaking the inspections, without having the appropriate structures in place and/or the necessary resources. Furthermore, there may be insufficient co-ordination between the various competent authorities.

VII. Special Needs of SMEs and Hazardous Installations not part of the Chemical Industry

34. The Workshop recognised that the larger companies within the chemical industry are likely to have well-developed safety management systems in place, which will allow them to benefit from co-operative arrangements with public authorities. It was suggested that smaller enterprises, or companies that are not part of the chemical industry, are less likely to have such safety management systems in place and generally have limited staff and resources specifically dedicated to safety issues (and, therefore, cannot be responsive to multiple inspections). In fact, they may not even be aware of the actions needed to meet requirements and to operate in accordance with approved safety objectives. As a result, many countries have made significant effort to provide targeted support for SMEs and companies outside the chemical industry. For example:

- industry associations, and suppliers of chemicals, are making an effort to assist SMEs and other companies in accordance with product stewardship principles, on request;

- industry associations have developed guidance on safety management systems for SMEs; and

- one public authority has established a consultation service targeting SMEs, separate from their enforcement activities, with the provision that companies using this service must abate the problems identified by experts provided.

VIII. Improving Trust

35. The Workshop discussed the value of improving the transparency in the conduct of inspections and audits, including making available the relevant policies, programmes, and outcomes, to help establish and maintain the trust among stakeholders (public authorities, industry, employees, the public and others).

    - The Workshop noted that evidence indicates that improved public awareness of risks leads indirectly to improved safety.

    - It was recognised that there is a need to assist the public to further understand the nature of "risk" and the risks posed by hazardous installations.

36. There was a consensus that both industry and public authorities should make a concerted effort to make available to the public relevant information in a form that can be readily understood and to provide opportunities for dialogues between stakeholders (industry, public authorities, employees and the public).

    - Participants described various activities to improve transparency. For example, many authorities are using the Internet to make their activities available to the public. In this regard, the authorities may post copies of their inspection programmes as well as inspection reports (with appropriate safeguards for confidential business information).

    - In addition, many companies are increasing the amount of environmental, health and safety information made available to the public, consistent with Responsible Care principles, for example through publication in annual environmental and safety reports and on their websites.

IX. International Co-operation

37. Participants recognised the value of sharing of information, within countries and internationally, concerning the methodologies and tools related to inspections and audits as well as the outcome of specific inspections and audits. It was suggested that efforts be made to promote such activities on an ongoing basis, and develop mechanisms that could be used.

38. It was suggested that further efforts be made to share experience with countries on a global basis (beyond the OECD Member countries). In particular, it was noted that some countries with economies in transition and developing countries are in the process of establishing inspection systems, as well as related institutional structures and procedures, and therefore should benefit greatly from co-operative activities.

X. Areas of Future Work

39. The Workshop recognised that further efforts should be made to support SMEs and companies outside the chemical industry to develop and implement appropriate safety management systems.

- Industry and public authorities should make efforts to help SMEs and companies outside of the chemical industry address risks related to chemical accident prevention, preparedness and response. While public authorities can address those aspects identified during individual inspections, suitable approaches are required for SMEs and non-chemical companies, to help them to recognise their hazards and adopt appropriate safety management systems.

- In addition, there needs to be increased initiative on the part of SMEs to request help or participate in available programmes

40. The Workshop discussed the value of increasing harmonization in relevant laws, as well as developing consistent approaches to inspections, both within countries and between countries. More consistent approaches would provide the benefit of allowing companies and public authorities to learn from each other.

- It was recognised that there cannot be complete uniformity of approaches to laws and to inspections, at least over the short term, due to differences in culture and legal systems, as well as different regional factors such as population density.

41. The Mutual Joint Visit programme on inspections within EU countries was commended and it was suggested that this programme be continued and expanded in the future to include non-EU countries.

- Additional efforts could be made to improve sharing of experience among inspectors through, for example, the establishment of international networks of inspectors for various aspects of chemical safety.

42. Efforts should be made to use more leading performance indicators, as one way to measure safety and determine whether actions being taken are actually leading to reduced risk. Furthermore, such indicators could help to focus audits and inspections on the areas of the highest priority.

- It was recognised that the development and application of such indicators is difficult.

- It was noted that the OECD is in the process of developing guidance on the development and application of safety performance indicators for authorities, industry and the community. This guidance should be published in 2002.

- More work is needed to better understand the relationship between safety management systems and safety performance indicators, and actual improvement in performance.

43. OECD should consider undertaking further efforts (perhaps in the form of an international Workshop with participation from countries with economies in transition and developing countries) designed to share the experience gained in the context of the Chemical Accident Programme and to facilitate implementation of international agreements and programmes.