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**ECONOMIC COMMISSION FOR EUROPE**

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Working Party on Regulatory Cooperation and  
Standardization Policies

Seventeenth session  
Geneva, 3-4 November 2008  
Item 4(b) of the provisional agenda

**PANEL SESSIONS**

**Panel session 2 – Sectoral Initiative on Equipment for Explosive Environments**

Note by the secretariat

Addendum

**Report of the second meeting of the Sectoral Initiative  
on Explosive Environments Equipment, Paris, 29 September 2008**

**I. INTRODUCTION**

1. The second meeting of the Sectoral Initiative on Explosive Environments Equipment was held in Paris on 29 September 2008, back to back to the annual meetings of the International Electrotechnical Commission Scheme for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEX Scheme), at the kind invitation of the IECEX Secretariat and thanks to the hospitality of the national hosts.

2. The Sectoral Initiative aims at promoting convergence among the regulatory frameworks governing the sector of the Equipment for Explosive Environments internationally. The Sectoral Initiative held its first meeting during the seventeenth annual session of the Working Party on Regulatory Cooperation and Standardization Policies (WP. 6) in November 2007, and decided to collect information about the legal framework currently in force in the main markets. A

questionnaire was developed and answers were received by the European Union, North America, the Russian Federation and Australia.

3. The purpose of the second meeting was to review and discuss the answers that had been received, and discuss the way forward. The Task Force will hold another meeting on 3 November 2008, as part of the WP.6 annual session.

## **II. MINUTES OF THE MEETING**

4. The Secretary of the Working Party on Regulatory Cooperation and Standardization Policies (WP. 6), Ms. Lorenza Jachia, welcomed participants to the meeting and explained how the Sectoral Initiative on Equipment for Explosive Environments fits into the development agenda of the United Nations. She emphasized that the presence of barriers to trade is a barrier to development and that standards are an important mechanism in the transfer of know-how and technology.

5. The Convener of the Sectoral Initiative, Mr. Frank Lienesch, explained the need for a high level of safety in this sector and regulators therefore require third party certification, which takes the form of mandatory approval of notified bodies. The disadvantage is that while the chemical and oil industry act globally with a single engineering approach to their plants, governments apply national regulations and therefore the equipment needs to be adapted to local requirements, which is costly and does not result in the plants being any more secure. For this reason, both consumers and industry using equipment for explosive environments expressed an interest in working towards harmonization of the regulatory framework in which this sector operates.

6. The United Nations Economic Commission for Europe offered a platform for this initiative because one of the Recommendations adopted by Working Party 6 - Recommendation L - provided guidelines to countries wishing to align their regulations in a specific sector. The initiative started its work in late 2007 by developing a questionnaire aimed at understanding the regulatory environment that was in force in the major markets. Preliminary answers to the questionnaire had been received from Australia, United States, EU and the Russian Federation.

7. The meeting had been organized to discuss the answers to the questionnaire received to date and to highlight areas of commonality as well as to discuss the direction of the future work of the Sectoral Initiative. Participants agreed to discuss the ten questions in the questionnaire one by one.

### **Question 1: Which national directives/laws control the placing on the market of equipment for explosive atmospheres?**

8. All countries have specific regulations in place in this sector. Australia is the only country that is fully implementing the IECEx Scheme and related standards since 2001.

9. The discussion highlighted that for the different sectors where this equipment is used - like mines, chemical and petrochemical onshore plants, offshore facilities and platforms and ships - different regulations apply and different ministries are responsible. Within one country, regulators for the different sectors do not have a unified approach.

10. Different local governments also have different rules within one same country. Equipment that is used in explosive environments includes both electrical and non-electrical equipment. For non-electrical equipment some countries do not have special regulations applicable to explosive environments, but this - and in particular electronically controlled engines - is emerging as an important issue.

11. Participants observed that:

- (a) Having one legislation for many sectors could raise problems under the applicable International Labour Organization (ILO) conventions and under relevant labour regulations in place at the national level.
- (b) Mining is more rugged and dynamic than other sectors that are more stationary, so reluctant to harmonize the legislation with other sectors. Different safety levels exist in different sectors.
- (c) There could nevertheless be a framework regulation covering general principles and providing a basis for sectoral legislation.

12. Participants agreed that it is important to involve regulators from different countries and sectors from early on in the picture (i.e. from the United States Mine Safety and Health Administration or MSHA). Regarding rules applicable within the European Union market, IECEx has developed a comparison table between the Equipment Intended for use in potentially Explosive Atmospheres (ATEX) and the IECEx. It is available on the IECEx website.

**Question 2: Are there compulsory conformity assessment procedures in place?**

13. All countries have compulsory conformity assessment procedures in place for equipment used in explosive environments. Conformity assessment procedures can include production/process control and may cover only specific types of protection from explosion (for example, flameproof protection). If we were to make a comparison between IECEx and the national specific schemes for conformity assessment, it is likely that the differences across countries would be very small.

14. Conformity assessment procedures are different depending on the safety levels of the equipment (like different zones, electrical and non electrical equipment, or non-sparking and flameproof). They also are different depending on the sectors in which the equipment is used. In some sectors the supplier's declaration of conformity is acceptable based on the risk and safety level (i.e. Zone 2 /Division 2 products). In other sectors a third party assessment is deemed acceptable. Governmental administrations are also involved in conformity assessment for specific sectors, for example the US Coast Guard will be responsible for conformity assessment of offshore installation and vessels.

**Question 3 and 4: What is the role of national or international standards for the conformity assessment procedures (are they used in regulations and how)? What is the process of legal acceptance of the standards (national, regional, international)?**

15. In general, IEC standards have very high acceptance, but several concerns were expressed:

- (a) IEC standards do not cover all different products used in explosive environments and in particular non electrical equipment
- (b) Some countries use older versions of the recent edition of the IEC standards
- (c) Some countries make technical changes because of different safety conditions (low temperatures in some countries and high temperatures in others)

16. In some countries, calling up international standards in regulations is not allowed (this is the case in Australia, for example). This happens for different reasons, one being that as standards change, the regulation becomes outdated very rapidly, which may not be desirable. Possible options were:

- (a) Adopting the IEC standard as a national standard by reference - this will result in a time lag that can be very short (1 year) or very lengthy (up to 15 years)
- (b) Making an indirect link to the standards by referring to the “state of the art” or “international best practice” or “equivalent level of safety”
- (c) Bringing the standards in through the certificate of conformity

17. In Australia, the time lag for adoption is minimal (less than one year), and in general there are neither technical nor formal changes. In the European Union, the principle of “full parallel voting” means that as soon as a standard is adopted by the International Electrotechnical Commission (IEC), both the CEN (European Committee for Standardization) and CENELEC (European Committee for Electrotechnical Standardization) automatically accept it without any technical changes, and any formal changes are simply listed in an Annex. The CEN standard needs to be published in the Official Journal, which takes time. In the United States, a goal of “no technical change” is sought, but never fully attained. All IEC standards are adopted as national standards with a time lag for adoption of about three years because the national electric code is updated every three years on a rolling basis.

18. As for possibilities for developing a common approach, CENELEC has proposed a common approach to mines at the EU level and has failed, but Group II products could be more promising. The goal should be to extrapolate common elements in the legislation which covers the different sectoral needs. There is also a need for “closing the loop” in standards development: look at the challenges at the implementation level, assess the standard and feed the users perspective back into the development and refining of the standards.

**Question 5: Who is authorized to conduct the conformity assessment and are the results of conformity assessment done abroad accepted?**

19. Participants agreed that this is the main issue. The problem for end users came not so much from different standards, but for the different schemes that are used in assessing conformity. However, participants agreed that internationally accepted test procedures and test results are a realistic vision.

20. In the US, Australia, New Zealand and the Russian Federation, foreign bodies can be accredited and conduct conformity assessment. In Australia and New Zealand conformity assessment is fully based on the IECEx scheme, so bodies that are accredited by IECEx as

Certification Bodies (Ex CB) can conduct conformity assessment. Whereas in the EU, notified bodies (Ex Notified Bodies or ExNBs) can only be test houses within the territory of one of the member States.

21. In the EU, cooperation among test houses is organized through an exchange process with annual meetings, and additionally the IECEX Scheme has a ExNB group. These groups can prepare consideration papers that are interpretations of the standards.

22. In the US, for offshore facilities and vessels, the US Coast Guard is responsible for accreditation. Other accreditation bodies need to apply to them.

**Question 6: Who is authorized to conduct the accreditation of the conformity assessment bodies, and based on which requirements? Is accreditation of foreign conformity assessment bodies possible?**

23. In the US and Japan, accreditation is linked to the ministry, but the accreditation process can involve independent experts. In the EU, notified bodies can be accredited by private institutions or by the government of one of the member States, but the government needs to list them in an official EC list.

24. In Australia and New Zealand, accreditation is based on the IECEX scheme and follows ISO guide 65 and/or IEC 17025.

**Question 7: Which additional directives/laws have a product to comply with for use in explosive environments? Is this common for all products or for specific products?**

25. A plant design can be approved if it complies with general plant safety requirements that go all the way from design through to the disposal. Therefore, the process needs to be worked through step by step. If the equipment is used in environments with an explosive atmosphere, the equipment needs to satisfy additional requirements.

26. In the US, stricter regulations apply to specific locations (like vessels, offshore, the mining sector). Depending on the sector in which the equipment is installed, you need to have a certificate from MSHA, or the US Coast Guard.

**Question 8: Are there additional or special directives/laws for putting products into operation (in addition to placing a product on the market)?**

27. Often there is no difference between the placing on the market and the operation. In fact, the central issue is the operation. The EU has two directives: one for placing on the market and the other for health and safety of the workers. Some countries also require that the product is listed by the ministry before it can be used.

**Question 9: What are the procedures for market surveillance and who is responsible?**

28. Market surveillance is organized in very diverse ways across countries and sectors. In general, a producer who becomes aware of a malfunctioning or a pirated product has an obligation to inform the consumers and users as well as the authorities.

29. In the EU, sectoral market surveillance authorities have very extensive investigation powers. The seriousness of the problem will determine the scope of follow-up activities. In other countries, for example in Australia and the United States, market surveillance is not covered by one specialized institution. Controls are conducted either on an ad hoc basis through quality checks at multiple points or through periodic checks on the facilities throughout their life cycle.

30. In the US, there is also a field complaint office that can open up investigations. On vessels and offshore facilities, it is the US Coast Guard that investigates the accidents and follows up with corrective actions.

31. IECEx would like to become involved in the UNECE "Advisory Group on Market Surveillance" ("MARS" Group), which aims at assisting Governments in developing effective systems for controlling the conformity to applicable standards and regulations of products in the marketplace.

**Question 10: What are the regulations for inspection, maintenance and repair of the equipment?**

32. Inspection, maintenance and repair are important issues because these activities necessarily concern the overall safety level in industry. The correct installation, maintenance and repair of the equipment are essential and can raise issues of liability in case of accidents. IECEx has introduced a new scheme for the qualification and licensing of repair workshops.

33. In the US, repair and overhaul is not explicitly regulated and remains under responsibility of the operator, who is obliged to maintain the facility in good condition. In New South Wales (Australia), workshops need to be licensed and the government intends to take the IECEx scheme on board. Nothing equivalent exists for repair within the EU (ATEX directives), although some of the member States have regulations at the national level (i.e. France).

**III. CONCLUSION**

34. Participants expressed appreciation for the project and welcomed the initiative of progressing towards a converging regulatory framework in the sector of equipment for explosive environments.

35. In moving forward, the meeting participants suggested the following:

- (a) At the upcoming session of the UNECE Working Party 6, the Sectoral Initiative will make a proposal to the UNECE MARS Group for assistance and better understanding of how market surveillance in this sector is organized in the different countries
- (b) Countries were invited to nominate national contact persons to become involved
- (c) The sector needs to ensure the representation of regulators as well as of end users (Oil and Gas industry, mines, among others)
- (d) IECEx will explore with its member countries expressing an interest in doing so the possibility of forming a standing body at the national level (a "national interface group"). This group would hold annual meetings with the different

stakeholders (including the relevant Ministries, governmental administration bodies, regulators, workers' associations) and representatives of IECEEx, in order to promote changes in the national regulatory framework

36. In closing the meeting, the participants were invited to attend in the third meeting of the sectoral initiative to take place in Geneva on the afternoon of 3 November 2008.

37. The UNECE secretariat will relay the list of attendees of the Geneva meeting for participants to see who took part from their respective countries and ensure an adequate follow-up. Thanks were extended to all the countries that had answered the questionnaire. Participants were invited to develop additional questions for it and those countries not having answered it were invited to do so.

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