

UNECE PROPOSAL FOR COMMON REGULATORY OBJECTIVES (CROs) APPLICATION TO EARTH-MOVING MACHINERY SAFETY

I. INTRODUCTION

1. The earth-moving machinery industry has been a global industry for many years and ISO standards have been developed to address most of the regulatory issues. Thus, a UNECE Recommendation “L” on “International Model for Technical Harmonization” aimed at harmonizing technical regulations based upon international standards can easily be used for earth-moving machines.

2. ISO/TC 127 was formed in 1968, with the objective of developing a complete set of standards to address the safety and commercial needs for earth-moving machinery. Over 100 standards for earth-moving machinery have since been published and new standards are continually being developed to address new technology and new types of earth-moving machinery.

3. Many national and regional regulations already use the technical requirements contained in the ISO/TC 127 standards to address the safety risks for such machinery. One example is in the EU, where the EN 474 standard was developed for manufacturers to use and to show that Earth-Moving Machinery complies with the EU Machine Safety Directive (98/37/EC). EN 474 addresses all significant risks for earth-moving machinery and the technical requirements to minimize the risks are coming from over 50 of the ISO/TC 127 standards.

4. During the Construction Equipment Joint Technical Liaison (JTLM) meeting in 2003 between the industry associations from Europe (CECE), the United States (AEM) and Japan (CEMA), it was unanimously decided to draw up a common regulatory objective (CRO), as proposed by the mechanism of the UNECE International Model for Earth-Moving Machinery within the UNECE Working Party. It was also decided to establish a Working Group to develop the proposal for the CRO on Earth-Moving Machinery, based on the ISO/TC 127 standards and an ISO version of EN 474. The following were nominated as members of the JTLM working group:

- Jan Mimer, Volvo (CECE and EU)
- Dan Roley, Caterpillar (AEM and USA)
- Kenzo Tanaka Komatsu (CEMA and Japan)

5. A CRO for earth-moving machines was proposed, incorporating the principal elements defined in the UNECE International Model for Technical Harmonization (in particular in its annex B, as reproduced in document ECE/STAND/17Rev.4) and the new ISO/TC 127 general safety standard (ISO 20474), based on EN 474. The proposed CRO covers safety for earth-moving machines, but does not cover environmental noise, engine emissions and road requirements, which are covered under general regulations that apply to many types of mobile machines.

II. SCOPE STATEMENT

6. This CRO applies to the design and construction of earth-moving machinery (machines as described in ISO 6165) and establishes essential health and safety requirements concerning the prevention of hazards to which workers can be exposed at work. It specifies the general safety requirements for earth-moving machinery. It also deals with all significant hazards pertinent to earth-moving machinery, when used as intended and under the conditions foreseen by the manufacturer. It further specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards and hazardous situations for earth-moving machinery.

III. MACHINE REQUIREMENTS

7. Machinery must be constructed so that it can be used, adjusted and maintained without putting persons at risk when these operations are carried out under the conditions foreseen by the manufacturer. Measures must be taken to minimize any risk of accident throughout the foreseeable lifetime of the machinery, including the phases of assembly and dismantling.

8. The specific requirements to address the risks in all of the general safety aspects for earth-moving machinery are covered in the ISO/TC 127 standard ISO 20474: Access systems, Operator space, Operator protection systems, Braking, Visibility, Steering, Controls, Seats and seat belts, Vibration, Sound, Safety signs, Electrical, Warning alarms, Operator environment, Lighting, Guarding, Operator Instructions, and Visual displays.

IV. REFERENCE TO ISO STANDARDS FOR COMPLIANCE

9. Machines that comply with the ISO 20474 standard for earth-moving machines are presumed to comply with all of the safety requirements for earth-moving machines.

V. COMPLIANCE CLAUSE

10. Compliance with this CRO shall be by Suppliers Declaration of Conformity (SDoC), as it is currently being done in the USA, the EU and Japan. If specific safety risks exist due to safety or environmental reasons not specifically covered, such as cold conditions or air quality for underground applications, other compliance methods may be needed, as determined by national regulators.

VI. MARKET SURVEILLANCE AND PROTECTION CLAUSE

11. Countries having agreed to the CRO are responsible for market surveillance within their territory. If a country finds that any machines claiming conformity with a CRO does not actually conform to the requirements, it may withdraw such a machine from its market.
