HERCA Statements

Justification of body scanners using X-Ray
Regulation of lamps containing radioactive substances

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HERCA is a voluntary association in which the Radiation Protection Authorities work together in order to identify common issues and propose practical solutions for these issues. HERCA was created in 2007 at the initiative of the French Nuclear Safety Authority (ASN). It now brings together 48 Authorities from 30 European countries.
Two major works have been achieved since 2010 by the HERCA working group on non-medical applications of ionizing radiation (WG2):
- **statement on the justification of full body-scanners using X-Ray for security purposes,**
- **statement on the regulatory status of small amount of radioactive substances added to lamps.**

Statement on the justification on full body-scanners using X-rays for security purposes

A strong need for a common approach for decision making on the use of X-rays body-scanners in Europe

Following some failed terrorist attempts, there has been a significant increasing interest in body screening technologies, particularly for use in airports, as these technologies are now considered to increase security checking.
HERCA agreed on the very strong need of a common approach for decision making on the use of X-rays body-scanners in Europe, and decided to produce a Statement on this issue.

Recommendations addressed by HERCA

- examine alternative imaging techniques that do not involve exposure to ionising, assessing and comparing the benefits and health risks of both techniques,
- prefer techniques with less health effects, when both techniques achieve the predefined security goals with comparable efficiency and efficacy,
- a well considered and open process of justification by competent governmental authorities,
- review of the justification decision on a regular basis,
- education and training of operators,
- assessment and registry of occupational exposure,
- management of incidental scenarios,
- technical equipment specification and quality assurance standards,
- respect of the statutory limitation of doses for workers and the public,
- information to workers and individuals and provision for alternative screening methods, where appropriate.

→ Regardless of the level of dose of ionizing radiation per scan to the concerned individuals, the three principles of justification, optimization and dose limitation must fully apply to the use of all human imaging technologies using ionizing radiation.

Full statement available on : *www.herca.org*

Interim Statement about the regulatory status of small amounts of radioactive substances added to lamps

A growing market

Small amounts of radioactive substances (Thorium 232, Krypton 85 or Tritium) have been added to lamps to improve electrode metallurgical properties, to optimize the light spectrum, or to provide a starter aid function, either:
- in high intensity lamps (xenon car lighting, metal halide high/low wattage lighting, special lighting),
- or in older fluorescent lamps.

The market for these lamps is growing rapidly and is addressed to:
- professional environments (stadia, shop, office lighting, specialised industrial and cinematic applications…),
- public uses as high intensity discharge head lights in cars.

The risks[1] associated with the use of those lamps is small according to an assessment provided by the UK Health Protection Agency (HPA). The draft report by the International Atomic Energy Agency (IAEA) conclude that the impact of using such lamps in normal and accident scenarios is below the exemption levels laid down in the IAEA international basic safety standard and in the European Council Directive 96/29/Euratom[2].

Application examples of small amounts of radioactive substances added lamps

The regulatory issue

HERCA has been approached by the European Lamp Companies Federation (ELC) to share an international regulatory compliance issue. ELC have therefore suggested that activities related to the use of lamps containing these small amounts of radioactive substances, except production processes[3], could be exempted from authorization.

Whilst the quantity of radioactive substances contained in each lamp is too small to require authorization by the regulator, the authorization criteria in European and national legislation can be exceeded when many lamps are used, stored, or disposed of together. The likelihood of such situation is now increasing with the growing demand for such lamps.

Need for a consistent European approach

Some European countries have already taken a regulatory decision on this issue, while others are currently assessing the technical data in order to prepare their regulatory decision.

HERCA approved in June 2011 an interim Statement promoting a consistent European approach to the processes of national assessment and regulatory decisions on the use of lamps containing small amounts of radioactive substances :

Results of national assessments and regulatory decisions will be shared in Europe through HERCA to promote a consistent European approach to this process. HERCA will also share information with European Association of Competent Authorities (EACA) on the transport of radioactive material, since the regulatory compliance issue raised by ELC also covers international transport legislation.
As consumer goods are introduced in open markets in Europe, HERCA recognises more generally the need for harmonization of the radiation safety regulation of goods containing small quantities of radioactive material.

[1] These assessments don't cover the production processes of lamps containing small amount of radioactive substances, which can handle a significant quantity of radioactive substances.
[2] "Exceptionally (…), individual Member States may decide that a practice may be exempted where appropriate without further consideration, in accordance with the basic criteria (…), provided that the following criteria are met in all feasible circumstances:
(a) the effective dose expected to be incurred by any member of the public due to the exempted practice is of the order of 10 ISv or less in a year; and
(b) either the collective effective dose committed during one year of performance of the practice is no more than about 1 man x Sv or an assessment of the optimization of protection shows that exemption is the optimum option. » (Council Directive Euratom 96/29)
[3] This activity is and shall remain under the regulatory control.

The approval of the two Statements represent a new milestone for the work of the association in its aim to develop a common approach to radiation safety and regulation in particular within Europe.

Photo courtesy of European Lamp Manufacturing Companies Federation.

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