

Alberta Labour submits the following comments on REGDOC-2.5.5, *Design of Industrial Radiography Installations*:

#### 1. Introduction

- In the Preface it states that: *“A radiography installation is any shielded enclosure, cell or vault where radiography is performed.”*
- In the Introduction states: *“Whether a radiography installation is temporarily or permanently installed, all of the design principles described in the following sections apply.”*
- These statements could be confusing to readers who think of a temporary installation as *“open area radiography”*, having to meet the requirements for a *“temporary job site”* as described in Health Canada’s Safety Code 34: *Radiation Protection and Safety for Industrial X-ray Equipment*, which is harmonized with the CNSC’s General Nuclear Safety and Control Regulations

#### 1.2 Scope

- This section states: *“The provinces and territories regulate the use of x-ray generators for industrial radiography. The design of installations for their use is outside the scope of this document.”*
- As one of the contributors to Safety Code 34, we went to great lengths to ensure that the *“permanent installation”* criteria were harmonized with the CNSC’s Nuclear Substances and Radiation Devices Regulations. Perhaps that could be reflected here.

#### 4.3 Monitoring for human presence prior to exposures

- Section 2: General Design Principles states: *“The design of a radiography installation should give preference to the use of engineered controls where ever possible.”* Section 4.3 identifies the following as administrative controls:

- Remote monitoring of the interior of the radiography installation i.e. video camera
- Alarm or stop buttons on the interior of the radiography installation

I would consider these to be engineered controls.

Alberta Labour recommends harmonization (where applicable) with Safety Code 34. Section 3.3.1 of the Safety Code provides the following engineered controls for a radiography installation:

- a **radiation control station** that
  - (i) is suitably designed and positioned external to the permanent installation,
  - (ii) contains the ionizing radiation source control console,
  - (iii) provides for the operator direct visual or electronic surveillance of the interior of the permanent installation during radiography, and
  - (iv) facilitates real-time imaging display and assessment capabilities;
- **two independent interlocks that are affixed on the main door** which is nearest the control console and which provides whole-body entry to the permanent installation, and they shall be designed in such a manner that, when activated, they shall promptly terminate x-ray production and require a manual reset at the control console to resume x-radiation generation;
- **one interlock**, which trips a safety relay thereby removing power from the x-ray generator, **shall be affixed on all remaining doors** that provide whole-body entry to the installation, including any panel that permits partial-body entry to the permanent installation;
- clearly visible **red radiation-on warning indicators** that are failsafe and that illuminate when x-radiation is generated: one indicator shall be prominently positioned inside the permanent installation on a fixed vertical structure at a height of 2 metres above the installation floor and, at least one indicator on the outside of the permanent installation, near each entry door or panel that provides access to the interior of that installation;
- clearly visible **yellow or amber stand-by warning indicators** that illuminate when ionizing radiation is not generated: one indicator shall be prominently positioned inside the permanent installation on a fixed vertical structure at a height of 2 metres above the installation floor and, at least one indicator on the outside of the permanent installation, near each entry door or panel that provides access to the interior of the permanent installation;
- inside the permanent installation, an **audible warning signal** that
  - (i) is distinct and loud enough to gain the attention of an individual, and
  - (ii) is initiated for at least 5 seconds preceding ionizing radiation generation;
- clearly labelled **red emergency activators** that
  - (i) are installed inside the permanent installation at 1 metre above the floor in such away that they can be activated without passing through the primary beam, and
  - (ii) function in a manner that when any such activator is activated it shall:

- (a) promptly terminate ionizing radiation generation;
- (b) automatically open the main door, referred to in Section 3.3.1.4. of this Safety Code, which is nearest the control console and which provides whole-body entry to the permanent installation; and
- (c) require a manual reset within the permanent installation, before ionizing radiation generation can be resumed at the control console;

Gary Hughes  
Director of Radiation Health  
Occupational Health and Safety  
Policy and Program Development Branch  
Alberta Labour  
8th Floor, 10808 - 99 Avenue  
Edmonton, AB T5K 0G5

Tel: (780) 415-0612  
Fax: (780) 422-0014



This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the system manager. This message contains confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this e-mail.