Radiation Safety

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LEVEL 1 – Radiation Emitting Device Awareness

Recording Instruction: Auto-Recorded in VES for single users. Group Training Form to ldtraindoc@vale.com for group learning events. **VES ID: 908061.1**

Context

Some Vale Ontario Operations facilities contain radiation emitting devices. These include **nuclear gauges** for process density or level measurement and **X-Ray equipment** for material analysis.

Purpose

To make employees aware of existing sources of workplace generated radiation at Vale and to recognize when the tasks they are to perform would require additional specific training designed to protect themselves and others.

Roles and Responsibilities

Employee

- Always follow safe work practices that reduce or prevent radiation exposure;
- Always ask qualified personnel if unsure on how to proceed when working with and/or near radiation emitting devices.

Supervisor

- Always ensure workers are aware of the hazards presented when working with and/or near radiation emitting devices;
- Always ensure workers have completed proper training prior to working with and/or near radiation emitting devices.

NUCLEAR GAUGES

Use & Management

- Vale Ontario Operations has a license from the Canadian Nuclear Safety Commission to use nuclear gauges.
- A Radiation Safety Officer (RSO) is appointed to manage the CNSC conditions of license and to administer the company Radiation Safety Manual associated with this license.
- The gauges in service at Vale are designed to have a low radiation field such that the radiation exposure of personnel working in the area is at or below the acceptable regulated limits.
- The radiation field around each nuclear gauge is measured during installation and annually thereafter to verify it is at or below acceptable regulated limits.

- It is still recommended to follow basic radiation safety practices by limiting the time spent near a radiation source.

Required Additional Training

- **LEVEL 2 – Radiation Safety for Nuclear Gauges and X-Ray Equipment (VES ID: 908061)**: is required for assisting to move a nuclear gauge provided that the source has already been locked, tagged and tested under the radiation work permit process. This training should also be taken by those working within close proximity (within 1 meter) of a nuclear gauge.
- **LEVEL 3 – Radiation Safety Training for Nuclear Gauge Authorized Workers (VES ID: 908061.2)**: is required to perform work with nuclear gauges, which includes shielding radiation using the source shutter and performing radiation surveys.

Emergency Contact

- All emergencies are to be reported to No. First Aid by dialing **6622**. In an emergency the Radiation Safety Officer can be reached through "Engineering On-Call" (No.1 First Aid will have this number).
- In the rare case that a gauge is damaged, has fallen from its installation or is involved in a fire; stay clear of the gauge and contact No.1 First Aid.

X-RAY EQUIPMENT

Use & Management

- X-Ray equipment at Vale is regulated by the Ontario Health and Safety Act and Regulation 861 of the Act for X-Ray Safety and must also conform to the requirements in the Radiation Emitting Devices (RED) Act of Canada and its regulations.
- The Radiation Protection Service of the Ontario Ministry of Labour enforces the X-Ray regulations.
- Health Canada Analytic X-Ray Equipment Safety Code 32 provides additional guidance on safety practices.
- X-Ray equipment is designed to have low radiation fields in the surrounding area during operation and has engineered safety protection devices to prevent radiation exposure when opening access panels.

Required Additional Training

- **LEVEL 2 – Radiation Safety for Nuclear Gauges and X-Ray Equipment (VES ID: 908061):** is required to work with X-Ray equipment.
- Depending on the make and model of the X-Ray equipment, additional **"equipment specific safety and technical training"** will be required to operate and maintain the X-Ray equipment. This training is defined by and arranged through the owner of the X-Ray equipment at the plants where this equipment exists.