Workplace Ionizing Radiation Safety Policy

1. PURPOSE

The purpose of this Policy is to ensure that activities involving equipment or devices that emit X-rays and other forms of ionizing radiation are conducted so as to minimize radiation hazards in accordance with applicable provincial or territorial Occupational Health and Safety legislation, the Radiation Emitting Devices Act (Canada), applicable Canadian Nuclear Safety Commission (CNSC) requirements where applicable, Health Canada safety standards, and other applicable regulatory requirements.

This Policy applies to all X-ray machines and X-ray sources in ABC Company workplaces and is guided by the ALARA principle (As Low As Reasonably Achievable), meaning that radiation exposure shall be maintained as far below regulatory dose limits as reasonably practicable.

2. DEFINITIONS

For purposes of this Policy:

“ALARA” means As Low As Reasonably Achievable, taking into account social, technical, economic and operational factors.

“X-rays” are a type of ionizing radiation (maximum energy greater than 5 KeV) generally produced from electrically powered machines rather than emitted from radioactive

materials.

“X-ray machine” means an electrically powered device, the principal purpose of which is the production of X-rays.

“X-ray source” means any device, or that portion of any device, that emits X-rays, whether or not the device is an X-ray machine.

“X-ray worker” means a worker who, as a necessary part of employment duties, may be exposed to ionizing radiation at levels that require monitoring.

“Restricted Area” means an area where radiation exposure may exceed 25 microSv/h or where access must be controlled to prevent unnecessary exposure.

3. ROLES & RESPONSIBILITIES

Corporate Directors, Officers & Managers are responsible for overall implementation and ensuring adequate resources are provided.

3.1 OHS Coordinator responsibilities include:

- Conducting hazard assessments of X-ray source work areas;
- Ensuring compliance with applicable radiation exposure limits;
- Selecting and implementing engineering and administrative controls;
- Verifying personal dosimeter reports and investigating abnormal readings;
- Maintaining required records in accordance with applicable retention laws (minimum 5 years or longer if required by jurisdiction);
- Reporting any exposure exceeding regulatory limits to appropriate authorities.

3.2 Supervisors are responsible for ensuring that:

- Only authorized and trained personnel access restricted areas;
- Required PPE and dosimetry are worn;
- Warning signs are properly posted;
- All radiation incidents are reported immediately.

3.3 Permit Holder (PH) responsibilities include:

- Registration and deregistration of X-ray sources;
- Ensuring implementation of safe work procedures;
- Ensuring shielding and engineering controls remain effective;
- Ensuring secure storage of X-ray equipment.

3.4 X-Ray Workers are responsible for:

- Participating in required training;
- Following safe work procedures;
- Reporting unsafe conditions or suspected exposures immediately.

4. RADIATION DOSE LIMITS

Exposure to ionizing radiation shall not exceed applicable regulatory limits, including occupational exposure limits, public exposure limits and declared pregnancy limits. ABC Company will ensure radiation exposure is maintained well below these limits in accordance with ALARA principles.

5. REGISTRATION & HAZARD ASSESSMENT

All X-ray sources must be registered prior to use. Hazard assessments shall be conducted for fixed and mobile installations to evaluate shielding adequacy, exposure levels and access control requirements.

6. HAZARD CONTROLS

6.1 Engineering controls shall include shielding, interlocks, collimators, shutters and physical barriers.

Administrative controls shall include:

- Written safe work procedures;
- Area signage;
- Radiation surveys before new or modified installations become operational;
- Access controls for restricted areas.

7. PPE & DOSIMETRY

ABC Company will provide required PPE including lead aprons, gloves, goggles and lab coats where applicable.

All X-ray workers working with or near open beam systems must wear personal dosimeters. Dose reports will be reviewed regularly. Records will be retained in accordance with applicable legislation.

8. PREGNANCY PROTECTION

Declared pregnant workers will have work duties reassessed to ensure compliance with applicable fetal exposure limits. Additional monitoring may be provided where required.

9. SIGNAGE & WARNING SYSTEMS

All X-ray rooms must display appropriate radiation warning signage. Warning lights and indicators must function correctly and be visible.

10. INSPECTIONS

Periodic inspections will be conducted at least annually. Radiation surveys will be performed for new or modified installations.

11. TRAINING

All X-ray workers must complete radiation safety training before working with equipment and refresher training at least every 3 years or sooner if required.

12. INCIDENT REPORTING

All radiation-related incidents must be reported within 24 hours. Exposures exceeding regulatory limits must be reported to appropriate authorities as required by law.