Radiation Hazard Management Plan

Angilak Property
ATHA Energy Corp. and its wholly owned subsidiaries
March 2025

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1. Introduction

This Radiation Hazard Management Plan (RHMP) applies specifically to the Angilak Property (the Property or the Project) operated by ATHA Energy Corp. (ATHA) through its wholly owned subsidiaries. The RHMP is in effect as of April 1st, 2025. This Plan shall be in effect from the date of issue of applicable land use licenses until the expiry of such licenses.

All employees and contractors working on the Property are to be aware of and follow this Plan. A copy of this RHMP will be posted in an office on the Project. In addition, this Plan is available digitally on ATHA's internal network. The Project Manager can be contacted for a copy of this RHMP. The purpose of the RHMP is to outline ATHA's radiation hazard management policy and will be implemented to ensure that exploration activities at the Angilak Property are operating in a safe and responsible manner.

The Angilak Property hosts a remote, early-stage uranium exploration project covering both Crown land and Inuit Owned Land in the Kivalliq Region of Nunavut. The Property is located at an approximate latitude 62° 31' North and longitude 98° 49' West or Universal Transverse Mercator (UTM) coordinates 508596mE and 6933106mN, North American Datum (NAD 83, Zone 14). Additionally, the Property is approximately 225 kilometres south-southwest of Qamani'tuaq (Baker Lake) and 350 kilometres west of Kangiqtiniq (Rankin Inlet). Authorizations for the use of land and water for the purpose of exploration have been granted by the Kivalliq Inuit Association (KIA), Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the Nunavut Water Board (NWB). ATHA's proposed exploration programs are of limited scope and will be operated seasonally due to weather limitations. Further information on potential exploration activities undertaken at the Angilak Property can be found in the Non-Technical Summary.

1.1. Radiation Safety Policy

As further articulated in ATHA's Health, Safety & Environment Policy Statement, ATHA endeavours to take every reasonable precaution toward ensuring the safety and health of all employees and contractors from any potential harmful effects of exploration products, stored materials and operations.

ATHA is committed to:

- Ensuring all personnel and contractors adhere to ATHA's radiation management policies, programs and procedures.
- Minimizing the risks to the health and safety of all employees.
- Complying with all applicable legislation and regulations.
- Assessing and mitigating potentially adverse environmental impacts.
- Advancing the Project in an environmentally and socially responsible manner that includes community consultation.
- Cooperating with relevant regulatory bodies and governments on all aspects of environmental protection and policy.
- Reviewing relevant plans, licenses and permits with employees and contractors when onboarded and ensuring copies of the relevant documents are available at the Project site office for reference.

1.2. Training

All employees arriving at the Angilak Property will be provided with an orientation program that includes Radiation Protection Training. This orientation is to be done upon first arrival on the Property and annually thereafter. Safety meetings in which Radiation Protection is reviewed and Radiation Hazards are discussed will be held on a weekly basis. Daily toolbox sessions are used as important daily reminders about Radiation Hazards in the workplace.

2. Regulatory Sources and Guidelines

Information contained in this document is compiled from several sources: the Canadian Nuclear Safety Commission (CNSC), Health Canada Radiation Protection Committee, Canadian Centre for Occupational Health and Safety (CCOHS), Saskatchewan Labour Occupational Health and Safety, and Cameco Corporation (Cameco).

It should be noted that the CNSC no longer regulates uranium exploration properties.

Transport of mineralized core and samples is governed by the *Packaging and Transportation of Nuclear Substance Regulations*, administered by the CNSC.

ATHA is registered and operates a current account with the National Dosimetry Services, Occupational Radiation Hazards Division of Health Canada (NDS).

3. Radiation

Health Canada recognizes that there are two sources of radiation:

- Radiation from Naturally Occurring Radioactive Materials
- Radiation from Artificially Produced Radionuclides and Nuclear Fuels

For the purposes of this document, only the Natural Radiation sources will be discussed. Ionizing radiation is often just referred to as radiation. The primary radioactive elements found in the earth's crust are uranium, thorium and potassium and their radioactive derivatives. There are basically three types of ionizing radiation that emerge from radioactive substances such as uranium ores, namely: alpha, beta and gamma radiation. Alpha particles are relatively heavy, charged particles, i.e., helium nuclei that are readily stopped by material, such as a sheet of paper or layers of dead skin. Beta particles are lighter charged particles, i.e., electrons or positrons, with slightly more penetrating power, typically up to 10 mm of body tissue. Gamma rays are electromagnetic radiation with high penetrating ability, such as being able to pass through steel pipes and body tissues. Detailed descriptions of the three types of ionizing radiation follow:

3.1. Alpha Particles

Alpha particles are energetic, positively charged particles (helium nuclei) that rapidly lose energy when passing through matter. They are commonly emitted in the radioactive decay of the heaviest radioactive elements such as uranium and radium as well as by some manmade elements. Alpha particles lose energy rapidly in matter and do not penetrate very far, however they can cause damage over their short path through tissue. These particles are usually completely absorbed by the outer dead layer of human skin and so, alpha emitting radioisotopes are not a hazard outside the body. However, they can be harmful if they are ingested or inhaled. Alpha particles can be stopped completely by a sheet of paper.

3.2. Beta Particles

Beta particles are fast moving, positively or negatively charged electrons emitted from the nucleus during radioactive decay. Humans are exposed to beta particles from manmade and natural sources such as tritium, carbon-14 and strontium-90. Beta particles are more penetrating than alpha particles but are less damaging over equally travelled distances. Some beta particles are capable of penetrating the skin and causing radiation damage, however, as with alpha emitters, beta emitters are generally more hazardous when they are inhaled or ingested. Beta particles travel appreciable distances in air but can be reduced or stopped by a layer of clothing or by a few millimeters of a substance such as aluminum.

3.3. Gamma Rays

Like visible light and x-rays, gamma rays are weightless packets of energy called photons. Gamma rays often accompany the emission of alpha or beta particles from a nucleus. They have neither a charge nor a mass and are very penetrating. One source of gamma rays in the environment is naturally occurring potassium-40. Manmade sources include plutonium-239 and cesium-137. Gamma rays can easily pass completely through the human body or be absorbed by tissue, thus constituting a radiation hazard for the entire body. Several feet of concrete or a few inches of lead may be required to stop the more energetic gamma rays.

3.4. Internal and External Exposure

External exposure to radiation occurs if a person is subjected to radiation originating outside the body. External exposures primarily arise from gamma radiation emitted from a radioactive material, for example a high-grade core sample. Though alpha and beta particles have limited penetration into body tissues, beta radiation can result in exposures to both skin and eyes. An internal exposure to radiation occurs if a person is subjected to radiation arising from a radioactive material that has entered the body. Intake routes for radioactive materials are by inhalation of dust, gas, ingestion of particles, or through an open wound, for example dust from cuttings or radon progeny in an enclosed space with ore present. The internal exposure arises from alpha and beta particles that penetrate sensitive body tissue before being stopped.

4. Radiation Protection Basics

The greatest potential of external exposure to radiation during uranium exploration is from uranium mineralization. Simple radiation protection is achieved by adhering to the three principles of **Time**, **Distance** and **Shielding**:

> **Time** - radiation exposure is reduced by minimizing your time spent close to radioactive material;
>
> **Distance** - radiation exposure falls off drastically as the distance between you and the radioactive material is increased; and
>
> **Shielding** - radiation is absorbed by materials. External exposure is reduced by introducing thick steel sheeting, or concrete structures, between you and the radioactive material.

Good radiation protection practice during uranium exploration is not to loiter in the vicinity of uranium mineralization and radioactive sources. Uranium mineralization and radioactive sources should be stored 30 metres or more away from active work areas. When there is cause for an employee to approach uranium mineralization while undertaking core drilling, core inspection, core stacking, labeling, packing, or transporting, work should be planned, standing at least 2 metres away from the material. The task should be carried out in close proximity to the material in minimum time. The employee should then withdraw 2 metres away to plan the next task. Always minimize time in close proximity to, and maintain distance from, radioactive material.

5. Radiation in Uranium Exploration

Uranium exploration personnel are potentially exposed to radiation from uranium and its associated radioactive decay products in naturally occurring mineralized outcrop, boulder float, drill core and drill cuttings. These radiation exposures will normally be quite small. Since the potential for significant radiation exposures is low and because they are working with naturally occurring radioactive material, exploration crews are classified as “incidentally exposed workers” and are regulated provincially and territorially. This is in contrast to workers in uranium mines who are usually classified as “nuclear energy workers” (NEW) and whose radiation exposures are regulated under the federal *Nuclear Safety and Control Act.*

The definitive document on radiation protection requirements for incidentally exposed workers is the *Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials (NORM*), published by Health Canada. This document was developed by the Federal Provincial Territorial Radiation Protection Committee and has been endorsed by all provinces and territories as well as the federal government.

The NORM Guidelines define four categories for annual worker radiation exposures in order of increasing radiological concern. The radiation protection requirements for the different annual doses are summarized in the table below:

5.1. Annual Worker Radiation Exposure Categories

Annual Dose (mSv/y)	Radiation Protection Program	
Dose < 0.3	**None - Unrestricted**	No requirements for dose management.
0.3 < Dose < 1.0	**NORM Management**	Radiation surveys of work areas.
1.0 < Dose < 5.0	**Dose Management**	Dose estimates via radiation surveys and worker occupancy times. Worker dose to be reported to National Dose Registry. Expert advice recommended.
Dose > 5.0	**Radiation Management**	Formal radiation protection program and the use of Thermoluminescent Dosimeters (TLDs) for worker dose measurement. Expert advice will be necessary.

5.2. Exposure limits for Nuclear Energy Workers (NEW)

The maximum amount of radiation people is allowed to receive in the workplace is regulated. A Nuclear Energy Worker (NEW) so designated for those working in a Nuclear power plant or uranium mine requires specific controls on the worker for who the Canadian Nuclear Safety Commission (CNSC) sets a limit of 50 mSv in a single year and 100 mSv over 5 years (a 20 mSv per year average). The limit for a pregnant worker, once pregnancy has been declared, is 4 mSv for the remainder of the pregnancy. While exposure levels vary by job, the average yearly radiation exposure of a monitored NEW is about 0.3 mSv.

The radiation exposure limit designated for people working in uranium exploration is the same as that of the general public.

5.3. Exposure limits for workers in uranium exploration

For workers involved in uranium exploration, the exposure limit is 1mSv above normal background radiation. Generally, the CNSC and other provincial regulatory authorities use the same exposure limit for workplace radiation protection as that for a member of the public.

The annual exposure limit from both internal and external radiation for a uranium exploration worker is *1 mSv.*

6. Radiation Safety

ATHA is committed to providing a safe workplace. The goal on the Angilak Property is to advance the historical Lac Cinquante Uranium Deposit, however, as part of that mandate it is important to protect all associated personnel and minimize any impact to the environment. Radiation exposure can be controlled and minimized by reducing the time spent in contact with radioactive material, maintaining safe and approved distances and monitoring.

Exposure to alpha and beta particles can be controlled by wearing proper clothing and ensuring that it is cleaned appropriately. Hand washing is extremely important and eating, drinking and smoking is to be avoided while working around radioactive material. Exposure to gamma rays is controlled by maintaining a safe distance and limiting the time spent in contact with any radioactive source. Monitoring exposure with a TLD dosimeter badge is an effective method of measuring exposure. In addition to the TLD badge, ATHA is also using PM1610Bs, Continuous & Pulse X-Ray and Gamma Radiation Personal Dosimeters from Polimaster Inc. These monitoring devices will be used in the core logging and core splitting shacks. The PM1610Bs provide staff with real-time dose measurements and a warning system should staff members encounter high levels of radiation.

6.1. Potential sources of radiation exposure for exploration crews

Exploration crews working with uranium may receive radiation exposures from:

- Gamma radiation emitted from the uranium mineralization.
- The inhalation of radon (and the resulting radon progeny decay products) emanating from the drill core and drill cuttings.
- The inhalation of radioactive dust.

- The ingestion of radioactive dust.

The primary source of worker radiation exposure will be from external gamma radiation. The external gamma radiation dose received by exploration crews will depend on:

- The grade of the mineralization.
- The amount of time spent by workers close to mineralized drill core and cuttings.
- The amount of mineralized drill core and cuttings in the vicinity.
- The distance between workers and the drill core and cuttings.

Worker radiation exposures from the inhalation or ingestion of radioactive dust (or dirt) should not be a concern since enclosed areas such as core shacks are suitably ventilated and all work areas will be kept clean. Workers should wash their hands after handling radioactive drill core and cuttings and before eating or smoking.

6.2. Radiation protection controls

Uranium exploration and drilling programs involve various grades of uranium ore and various levels of potential radiological hazards. A radiation level has been determined above which Radiation Protection (RP) controls are initiated and all the elements of the Radiation Protection Guidelines described below come into effect. If the ore being handled, is below this action level, normal Health and Safety related practices will be in effect.

The RP level has been determined based on available Federal and Provincial guidelines that address uranium exploration and radiological safety controls in mining areas. This indicates that areas with exposure rates that are less than 1 µSv/h don't require controls.

An exposure rate greater than **1 µSv/h** corresponds to a reading of **1000 cps at one metre** on an exploration scintillometer and initiates RP controls.

6.3. Radiation protection guidelines

Worker Responsibilities

All employees and contractors, collectively referred to as workers, active on the Property must:

- Attend required training, safety meetings and briefing sessions
- Be familiar with and adhere to this Plan
- Perform only those tasks that can be performed safely
- Report any unsafe conditions to their supervisor or Project Manager
- Wear a TLD (dosimeter) badge if assigned, store the badge appropriately when not in use, and immediately report if lost or damaged

Personal Protective Equipment

When working with uranium mineralization, the following personal protective equipment (PPE) is to be worn, as appropriate for the task at hand:

- Coveralls and gloves to protect from and minimize the spread of radioactive dust

- Safety glasses to protect eyes from beta radiation
- Use a ½ face particulate respirator when radioactive dust is expected (e.g., core splitting). Store respirator in a clean plastic bag away from the work area when not in use

General Protection Guidelines

The following measures are mandatory when working directly with or in an environment that may contain radioactive materials:

- Minimize time handling radioactive material and maximize distance from radioactive material
- Use shielding to block radioactive material (e.g. core lids on boxes not actively being logged)
- Do not wear work clothes or footwear that may have been in contact with mineralized material in non-work settings (kitchen tent, sleep tent, common areas, etc.)
- Maintain good hygiene by washing hands regularly (including after handing mineralized material and before eating or smoking), washing hair and clothes regularly
- Do not lick any rock
- Bandage open wounds
- Do not eat, drink or smoke in core shacks, splitting shacks, the dry, on the drill platform or any other location with elevated radiation levels
- Reduce dust by wetting the area with water on a regular basis
- Always work in well-ventilated environment
- Store radioactive material at least 30 metres away from where people regularly work or congregate (e.g., the drill shack and the core logging tent)

Personnel are expected to maintain personal hygiene as preventative measure to avoid the accumulation of radioactive material on their person. There is no expected risk of radiated water from the practice of personal hygiene. In the event PPE becomes exposed and measures 100 CPS or higher, all affected equipment will be sealed in 205 litre steel drums and stored in the radioactive waste storage area until it can be transported for proper disposal.

7. Worker responsibilities

All employees and contractors active on the Angilak Property must:

- Attend all required training, safety meetings and briefing sessions.
- Be familiar with and adhere to the Radiation Protection Guidelines.
- Perform only those tasks that can be performed safely.
- Report any unsafe conditions to the supervisor or Project Manager.
- Wear a TLD badge.

8. ALARA

The objective of the Radiation Safety Program is to minimize personal and environmental radiation exposures to levels that are **As Low As Reasonably Achievable** (ALARA), economic and social factors considered. This is accomplished by the implementation of personal and area monitoring procedures and where applicable, the use of personal protective equipment.

ATHA is committed to the ALARA principle for Radiation Hazard Control.

9. Work site mitigation & personal hygiene

As internal exposure to radiation can occur from the inhalation or ingestion of radioactive materials, work practices should be adopted that restrict the amount of airborne dust and the potential for cross contamination of the hands, nose and mouth. This is best achieved by handling materials in the wet state. When the radioactive material cannot be made damp and airborne dust occurs, wear respiratory protection. However, respiratory protection cannot filter out radon gas and the best method of avoiding a radon intake when handling uranium mineralization is to work in a well-ventilated area. Extractor fans are used in areas where radioactive dust can be generated i.e., core splitting benches.

Radiation protection involves minimizing external and internal exposures to radiation. It is important that the uranium mineralization is kept in its correct storage locations. Any spillage or accumulation of the materials should be cleaned up immediately. Gamma radiation exposure will arise from small piles of materials. Internal exposure will occur from inhalation of airborne dust. Prevention of ingestion of radioactive bearing material can be achieved by washing hands prior to smoking and eating.

10. Drilling and handling radioactive drill core and rock chips

The following procedure for handling and logging of radioactive rocks (drill core, hand samples, chips etc.) have been developed by the Health and Safety Committee of Prospectors and Developers Association of Canada (PDAC). ATHA is adopting this procedure for their uranium exploration camps. In addition to the Radiation Protection Guidelines, the Project Manager will ensure that all personnel are made familiar with the following procedures and ensure the updating and implementation of this procedure.

- All employees who work with radioactive rocks or drill core must wear TLD badges. TLD badges are mandatory at the drill rigs and in the core logging tents.
- Workers must be aware when working with radioactive materials. Safety glasses, work gloves and coveralls must be worn. ½ face respirators are required when working with radioactive dust. When not in use respirators should be stored in a clean plastic bag and removed from the work site. Gloves and coveralls should be laundered and/or replaced regularly. Gloves, coveralls and other exposed outerwear PPE will not be worn inside the kitchen area.
- Wash hands well with soap and water after handling radioactive material.
- Do not eat, drink or smoke when handling or working near radioactive material.

- Ensure that all workstations with exposure to radioactive materials, have proper ventilation to ensure constant air turnover. Ventilation fans are installed in the core tent. Ventilation fans and extractor fans are installed at the core splitting station. A dust collecting extraction unit is attached to the cyclone on the RC rig.
- Store radioactive core at least 30 metres away from the drill shack and the core logging tent.
- Post storage areas and the logging / splitting shacks as radioactive areas.
- Radioactive core must be logged into and out of the core logging tent. Date, time and the gamma level at 1 metre intervals are also recorded. A radiation warning sign must be placed on the core shack door while radioactive core is inside.
- Do not move or store radioactive core unless in core boxes secured with wood or other core boxes.
- Do not loiter in the vicinity of mineralized drill core, mineralized drill cuttings or mineralized drill chips.
- Do not wear work clothes in the kitchen, common areas or sleep tents.
- Drillers/helpers/others when drilling or handling radioactive drill core or drill chips will change out of their contaminated clothes and leave them at the drill site to avoid contaminating the helicopter.
- Follow all regulations and procedures regarding the shipment of radioactive materials.

The above information, entitled "Drilling and Handling Radioactive Core and Rock Chips" will be posted prominently at the camp and in the core shack.

10.1. Drilling

Before building a drill setup on a drill site, orientation tests will be performed to determine Natural Background Radiation levels at the drill site. Upon commencement of the drill hole, drillers need to be instructed on where to expect mineralization, the identifying characteristics of that mineralization and how to minimize contact with the drill core and cuttings when the mineralized intersection is drilled. Mineralized core should be stored 30 metres from the drill shack prior to being transported to the core logging tent in camp. A placard noting radiation should be posted at the drill site core storage area.

A cutting retrieval system is used during drill operations. Benign cuttings will be captured and stored in a natural depression near each active drill site. If naturally occurring radioactive material (NORM) concentrations are greater than 0.05% uranium oxide equivalent (eU_3O_8), drill cuttings will be collected and pumped back down the hole or contained in sealed steel 205 litre drums and cached as short-term storage on an elevated flat dry outcropping, a minimum of 100 m from the high-water mark of any waterbody, the location of which is yet to be determined. The radioactive waste storage location will be submitted to NWB and CIRNAC for approval prior to drums being stored on site. Drums will be kept at this short-term storage location until proper transportation and disposal at an accredited facility can be arranged.

Any drill hole that encounters mineralization with a uranium content greater than 1.0 percent over a length of > 1.0 metre and with a metre-per-cent concentration > 5.0, will be sealed by grouting over the entire length of the mineralization zone and not less than 10 metres above or below each mineralization zone. The top 30 metres of the hole within bedrock will also be sealed by grouting once drilling is completed.

10.2. Core storage

Once the uranium content has been established by assaying, a decision will be made on the long-term storage of the core. If stored on the Property, it will be located in the long-term core storage area for radioactive rocks. This core storage area will be located at a minimum of 31 metres from other working structures. Radiation levels must be reduced to less than 1.0 µSv measured at 1 metre from the surface and in no instance will be allowed to exceed 2.5 µSv.

11. Environmental considerations

ATHA will establish, in cooperation with the KIA and CIRNAC, a suitable long-term core storage area for radioactive rocks, separate from the non-radioactive rocks. This area will have the appropriate containment systems in place, will be located at a minimum of 100 metres from the normal high-water mark of any water body and will have appropriate signs. Additional measures may be required depending on the uranium concentration of the rocks. These will be discussed with the regulatory agencies.

12. Additional information

Workers are encouraged to consult regulatory guidelines for additional radiation safety information. Copies of the Canadian Guideline for the Management of Naturally Occurring Radioactive Materials (NORM) from Health Canada, the Radiation Protection Guidelines for Uranium Exploration from Saskatchewan Labour, Occupational Health and Safety, the CNSC Radiation Protection Regulations and the CNSC Packaging and Transport of Nuclear Substance Regulations are available for review from the Project Manager.

13. Shipping and transport

The shipping of radioactive materials (Class 7) from the Project site is controlled by the CNSC *Packaging and Transport of Nuclear Substances Regulations (PTNSR)* and Transport Canada's *Transportation of Dangerous Goods Act* and *Regulations*.

The Project Manager will supervise shipping radioactive materials and every person preparing shipping documentation will hold a certificate attesting to their knowledge of Transporting of Dangerous Goods Act and Regulations (Class 7).

The *Regulations* stipulate that Low Specific Activity consignments will be shipped as Excepted Packages if the radiation on the external surface does not exceed 5µSv/hr. The container must bear the United Nations (UN) Number as per PTNSR 17(2) and contain a marking of "radioactive" on an internal surface that is visible upon opening the package.

The transportation of uranium mineralization and ores that have an average specific activity in excess of 70 kilobecquerel (kBq)/kg conform to the requirements of the Packaging and Transport of Nuclear Substances Regulations.

Exploration camps have one exemption to the Transport of Dangerous Goods Regulations. Due to remoteness, exploration camps are permitted to transport core samples by air, providing they are less than 100 mm in diameter and are packaged in accordance with the Packaging and Transport of Nuclear Substances Regulations.

ATHA has an International Radiation Alert Ranger imported by Alara Consultants Inc. to determine radiation levels in Sieverts and a RS 230 spectrometer to differentiate radiation by mineral type.

13.1. Requirements for an Excepted Package

If the radiation intensity is < 5 µSv/hr, then the shipment may be considered an "Excepted Package" under CNSC regulations and the TDG regulations do not apply. Therefore, if the dose rate on the exterior of the package is <5 µSv/hr, it can be shipped under routine conditions of transportation – it can be considered a non-dangerous good. The following procedures must be followed when shipping an Excepted Package:

- A label marked "Radioactive Samples" must be placed inside the package in such a manner that the label is visible to the person opening the package.
- Removable radioactive contamination on the outside of the package must not exceed 0.4 Bq/cm^2 averaged over 300 cm^2.
- The UN Number "ex. UN2910" is attached to one vertical side of the container.
- Both the Consignor and Consignee addresses are to be displayed on the exterior of the package.
- The weight must be shown on the exterior of the package if it exceeds 50 kilograms.
- The waybill requires the shipping name (Radioactive material, Excepted Package – Limited Quantity of Material) and the UN number.

3 copies of the documentation are required: one for the shipper, one for the carrier and one for the receiver.

13.2. Requirements for shipping Low Specific Activity (LSA) packages

If the dose rate on the exterior of the package is **>** 5 µSv/hr then the package will be shipped as a Low Specific Activity – (LSA-1) shipment. The following procedures must be followed when shipping any Low Specific Activity Package:

- Both the Consignor and Consignee addresses are to be displayed on the exterior of the package.
- The weight must be shown on the exterior of the package if it exceeds 50 kilograms.
- The Shipping Name (Radioactive Material, Low Specific Activity) and the UN Number "UN2912" is attached to two (2) vertical and opposite sides of the shipping container.
- Three copies of the documentation is required; one for the shipper, the carrier and the receiver.
- An LSA-1 shipment will require a shipper's document identifying the shipment as a Class 7 dangerous good.
- Radioactive Yellow II labels are attached next to the shipping name and UN number labels.
- On the Radioactive Yellow II Labels the following must be written:
  - Radioactive contents section write: "LSA – 1".
  - Transportation Index - Estimate the activity in the package in Bq (this number must be in Bq units).

- The Transportation Index is the gamma radiation intensity in µSv/hr at a distance of 1 metre from the exterior of the package divided by 10. For example: the Transport Index for 4.5 µSv/hr will be 0.5. The package for an LSA-1 shipment must satisfy the IAEA Requirements for Type 1 Industrial Packages (Type IP-1) which are the same as for an Excepted Package plus:
- The smallest external dimension of the package cannot be less than 10 centimetres.
- The container must be durable and legally marked on the outside "Type IP-1".

13.3. Standard units of measure

The standard unit of measure of the activity (number of atoms decaying per second) is the becquerel (Bq). Since 1 Bq is a very small quantity, larger multiples are used as follows:

1kBq	**= kilobecquerel**	**= 1,000 Bq**	**= 1 x 10^3 Bq**
1MBq	**= megabecquerel**	**= 1,000,000 Bq**	**= 1 x 10^6 Bq**
1GBq	**= gigabecquerel**	**= 1,000,000,000 Bq**	**= 1 x 10^9 Bq**
1TBq	**= terabecquerel**	**= 1,000,000,000,000 Bq**	**= 1 x 10^{12} Bq**

Becquerels replace the curie (Ci) as the unit of measure of activity. The radiation dose-equivalent is expressed in units of sieverts (Sv). Smaller fractions are often used as follows:

1 mSv = millisievert = 0.001 Sv = 1 x 10^{-3} Sv

1 µSv = microsievert = 0.000001 Sv = 1 x 10^{-6} Sv

The sievert replaces the older unit for dose-equivalent, the "rem".

14. References & Resources

Associations

Prospectors and Developers Association of Canada

Federal Government

Canadian Guidelines for Management of Naturally Occurring Radioactive Materials (NORM)
Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines
Canadian Nuclear Safety Commission Occupational Exposure to Radiation
National Dosimetry Services (NDS)

Provincial Governments

Saskatchewan Labour - Occupational Health and Safety
Saskatchewan Environment – Mineral Exploration Guidelines for Saskatchewan

Other

Cameco Corporation
Aurora Energy Resources Inc.
Saskatchewan Research Council (SRC)