WWW.SRBT.COM

SRB Technologies (Canada) Inc.

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Company Background

- SRB Technologies (Canada) Inc. (SRBT) has been in operation since 1990 and is located at 320 Boundary Road in Pembroke.
- Our company is locally owned and currently employs 39 hard working local residents.
- In June 2022 the Canadian Nuclear Safety Commission (CNSC) renewed SRBT's Class 1B Nuclear Substance Processing Facility Operating Licence for a period of 12 years.
- We are totally committed to protecting the local environment, our employees, the public and to meeting the safety requirements of the CNSC. We will continue to be transparent, visible and open with our community and regularly provide information to the public.

Description of Manufacturing Processes

- All products manufactured and designed by SRBT use Betalights™ which are sealed glass capsules internally coated with a phosphorescent powder and filled with a radioactive gas called tritium to produce continuous light.
- Our products are manufactured to strict procedures audited on a regular basis by a number of independent third parties.
- Our company is ISO 9001 registered, ensuring all processes are performed in an organized, controlled and repeatable manner.
- Any radioactive waste generated from the facility is disposed to a CNSC licensed waste facility or by other means with the approval of the CNSC.
- During the manufacturing process small quantities of tritium are released into the environment through our two exhaust stacks.
- Tritium is our single largest cost and precautions are taken during manufacturing to ensure emissions to the environment are minimized.
- Tritium released per week has dropped significantly from 23,546 GBq/week in 2005 to 882 GBq/week in 2024, a decrease of just over 96%.

Outline of Company Products

- Our products are maintenance free and work without batteries and electricity and are widely used in areas where power is not readily available. Our signs are used to illuminate the way in various commercial buildings, mines and sewer systems. SRBT also manufactures many illuminated products for the Canadian, American and British military. Our products are also installed in a number of aircraft to illuminate escape doors and routes.
- The energy emitted from tritium does not penetrate the Betalights™, so there is no external radiation hazard from our products.
- The Betalights™ within each device and the devices themselves are thoroughly tested to minimize the possibility of breakage.
- In the unlikely event that an exit sign containing 20 curies of tritium is broken, the dose to an individual is expected to be less than the annual public dose limit set by the CNSC of 1.0 millisieverts (mSv) and would depend on the amount of tritium left in the device and the size and ventilation of the room where the device is broken.

Specialty Exit Signs

Aircraft Signs


Landmine Route Markers


Flight Refueling Markers

Tritium

- Tritium is a colorless and odorless radioactive isotope of hydrogen.[1]
- Tritium is a relatively weak source of beta radiation and is produced naturally and also produced as a by-product of electrical generating stations. Tritium is also used in studies investigating the safety of potential new drugs.[1]
- Tritium enters the body when people swallow tritiated water, and may also enter the body when people inhale tritium as a gas in the air, and absorb it through their skin.[1]
- Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted through the urine within a month or so after ingestion.[1]

Effects on the Environment and the Public

- Based on monitoring results, at **MAXIMUM**, the dose to a child or adult due to SRBT would be 0.0026 mSv/year, much less than 1% of the public dose limit of 1.0 mSv/year. This assumes this child or adult resides very close to SRBT, breathing air due to the emissions from SRBT, drinking well water or formula mixed with well water and assuming 100% of their produce and dairy consumption is from local sources.
- Below 50 to 100 mSv, which includes occupational and environmental exposures, risks of health effects are either too small to be observed or nonexistent.[2]
- The International Commission of Radiological Protection (ICRP) have attempted to determine the probability of fatal and non-fatal cancers, and hereditary effects from any dose of radiation. The probability in total is 0.000073 per mSv.[3] Therefore one out of approximately 5 million people could possibly develop these effects if every individual received a dose of 0.0026 mSv.
- The Financial Guarantee is fully funded by SRBT should the facility ever need to be decommissioned in the future. As of the end of 2024, $785,412.80 or 108% of the required financial guarantee of $727,327.00 is in place in a secure escrow account.

Groundwater

- SRBT's groundwater study includes monitoring data from 57 wells drilled to various depths and 31 wells are located within 150 meters of our facility.
- The contamination of groundwater is at a level that does not pose a risk to any member of the public.
- The decrease in emissions together with natural decay will reduce tritium concentrations in groundwater over time.
- In 2024, tritium concentrations in wells used for some drinking water ranged from 4 Bq/L to 763 Bq/L, which is less than 11% of the Ontario Drinking Water Guideline of 7,000 Bq/L.

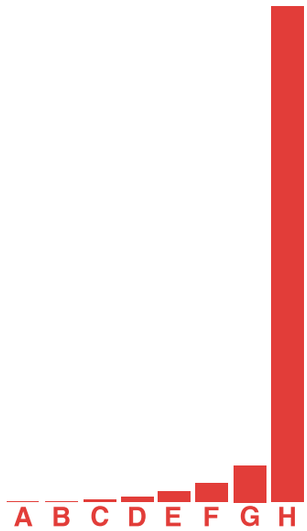
Monitoring

WHAT IS MONITORED CURRENTLY	FREQUENCY
Facility stack emissions	Continuous
40 air monitoring stations	Every Month
8 precipitation monitors	Every Month
Muskrat River	Every Month
29 monitoring wells	Every 3 Months
7 residential and business wells	Every 6 Months
Local milk	Every 6 Months
Sludge samples	Every 6 Months
Locally grown produce	Once a year
6 facility downspouts	Random

NOTE: All results are communicated to the CNSC and available in our Annual Compliance Reports which are posted on our website.

Public Dose in Perspective

mSv		
100.00	H	994 out of 1000 individuals exposed to 100 mSv would not develop cancer.[4] Risk of disease or death is increased by 10% among those who receive 100 mSv.[5] (H on Graph)
7.00	G	Brain Scan.[6] (G on Graph)
1.80	F	On average, public radiation exposure in Canada due to all natural sources.[7] (F on Graph)
1.00	E	CNSC annual public dose limit. (E on Graph)
0.52	D	The highest dose to an SRBT employee (in 2024). (D on Graph)
0.50	C	Abdomen x-ray.[6] (C on Graph)
0.067	B	The average dose to SRBT employees (in 2024). (B on Graph)
0.0026	A	Maximum annual dose to the public due to SRBT (in 2024). (A on Graph)



Reference Documentation

1. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, TRITIUM, http://www.epa.gov
2. HEALTH PHYSICS SOCIETY, Radiation Risk In Perspective, Richard J. Burke Jr., Executive Secretary Health Physics Society, http://www.hps.org
3. ICRP PUBLICATION 60, 1990 Recommendations of the International Commission of Radiological Protection, PERGAMON PRESS
4. HEALTH PHYSICS SOCIETY, Answer to Question #4703 Submitted to "Ask the Experts", http://www.hps.org
5. Risk of cancer following low doses of ionising radiation - British Medical Journal, June 29, 2005, http://www.bmj.com.
6. INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation, People and the Environment, http://www.iaea.org
7. http://nuclearsafety.gc.ca/eng/resources/radiation/introduction-to-radiation/radiation-doses.cfm

Support for Our Community

SRBT and its staff continue to support the local community by providing support to various organizations and causes:

- **Pembroke Horticultural Society**
- **St. Joseph's Food Bank**
- **Festival Hall**
- **Local Baseball Team**
- **Local Ball Hockey League**
- **Local Hockey Team**
- **Local Softball Team**
- **Christmas Angels Program**
- **Alice & Fraser Horse Association**
- **Local Youth Basketball Team**
- **Gold Sponsor for Local Memorial Softball Tournament**
- **Pembroke Fire Department Chili Fest**
- **Renfrew County Regional Science and Technology Fair**
- **Robbie Dean Family Counselling**
- **Two Local Fishing Derbies**

For further information on tritium and radiation hazards, please visit the third party sites listed below:

- **Canadian Nuclear Safety Commission:** *https://www.cnsc-ccsn.gc.ca*
- **United States Environmental Protection Agency:** *https://www.epa.gov*
- **International Atomic Energy Agency:** *https://www.iaea.org*
- **International Commission on Radiological Protection:** *http://www.icrp.org*
- **Health Physics Society:** *http://hps.org*
- **International Agency for Research on Cancer:** *https://www.iarc.fr*

For more information or if you are interested in a plant tour, please contact:

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For further information please visit: http://www.srbt.com
Or follow our Facebook, Instagram, X, LinkedIn, Reddit & TikTok accounts.

Radiation measurements

are often represented in various units and can cause confusion:

PRESCRIBED LIMIT TO PUBLIC = 1 mSv

1 mSv = 0.001 Sievert
1 mSv = 1,000 microSievert (μSv)
1 mSv = 1,000,000 nanoSievert (nSv)
1 mSv = 1,000,000,000 picoSievert (pSv)

ONTARIO DRINKING WATER GUIDELINE = 7,000 Bq/Litre

7,000 Bq/L = 7 Bq / millilitre
7,000 Bq/L = 7,000,000 milliBecquerels (mBq)/Litre
7,000 Bq/L = 7, 000,000,000 microbecquerels (μBq)/Litre
7,000 Bq/L = 0.000000189 Ci / Litre

RADIOACTIVITY IN KNOWN MATERIALS [5]

1 kg of coffee = 1,000 Bq
1 household smoke detector = 30,000 Bq
1 kg of coal ash = 2,000 Bq
1 kg of granite = 1,000 Bq

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