



**2024 Second Quarter Compliance Monitoring
&
Operational Performance Report**

Reporting Period April 1 – June 30, 2024

**Cameco Fuel Manufacturing Inc.
Fuel Facility Operating Licence
FFL-3641.00/2043**

200 Dorset Street East
Port Hope, Ontario
L1A 3V4

Submitted to:
The Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
280 Slater Street
Ottawa, Ontario
K1P 5S9

Executive Summary

Cameco Corporation (Cameco) is committed to the safe, clean, and reliable operations of its facilities and continually strives to improve safety performance and processes to ensure the safety of both its employees, local residents, and the environment. CFM maintains the required programs, plans and procedures as required by the applicable regulations including but not limited to the areas of health and safety, radiation protection, environment, emergency response, fire protection, waste management, and training.

As a result of the programs, plans and procedures, CFM's operations have maintained radiation exposures to workers and the public well below the regulatory dose limits. Environmental emissions are also being controlled to levels that are a fraction of the regulatory limits. During the second quarter, there were no exceedances of the action levels in the radiation protection or environmental protection program.

In the second quarter there was no planned shutdown of the facility.

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1.0 Second Quarter Overview

1.1 Facility Operation

Cameco continues to strive for operational excellence at all of its facilities through consistent application of management systems to ensure that they operate in a safe, clean, and reliable manner. Corporate policies and programs, including that for Safety, Health, Environment and Quality (SHEQ) provide guidance and direction for all site-based programs and procedures that define the CFM Management System.

In the first quarter of 2023, CFM was granted a twenty-year licence by the Commission (FFL-3641.00/2043) effective March 1, 2023 until February 28, 2043 and the Licence Conditions Handbook (LCH) is dated August 31, 2023.

There were no significant changes to Structure, Systems and Components (SSC) or processes in the second quarter.

The LCH for the facility references core CFM documents that form the licensing basis in each safety and control area. There was one document that was submitted to the CNSC in the second quarter of 2024.

- Safety and Health Manual (CFM-SH), version #5 - update the responsibilities throughout the document to capture organizational changes, update the terminology from the E/OH&S to the Safety, Health and Environmental (Safety) department, revise Appendix 1 to include a new Safety Health Procedure (SHP) for Hazardous Substance Management, and update the language under medical surveillance.

In the second quarter there was no planned shutdown of the facility.

There was one reportable event that required notification of the duty officer as detailed in the *Nuclear Safety and Control Act* during the second quarter. On May 13, 2024 a Loss of Primary Containment (LOPC) event occurred after a groundwater pumping well maintenance hole was found discharging groundwater onto CFM's parking lot surface. Approximately 100 L of contaminated groundwater was released and discharged to the municipal storm water system. The pump was shut down and the liquid in the well maintenance hole was pumped into a temporary storage container. A confined space entry was completed with contractors reconnecting the open line fitting. The system was then put back into service approximately 3 hours after the discharge was noticed and the collected water was routed back into the system for treatment.

In the second quarter there was no exceedances of the radiation protection or environmental protection action levels.

1.2 Physical Design / Facility Modification

Modifications to facility buildings, processes, equipment, procedures, programs, or organizational structure with the potential to impact safety are evaluated through the internal change and design control process from planning through to completion. This process is used to help identify impacts and potential impacts to the licensing basis, the environment as well as to the health and safety of employees and local residents.

In the second quarter of 2024, there were no modifications undertaken that required written approval from the Commission or a person authorized by the Commission.

There were also no significant changes to the physical design of equipment, processes, or the facility in the quarter.

There were two changes in which a third party review was submitted to the CNSC in the second quarter for the entryway washroom reconfiguration and the renovation of the second floor to create a quiet room. For each modification the third party review determined CFM was in compliance with the requirements of the applicable codes and standards and that the intended level of fire and life safety in the impacted areas of the building will be maintained. There were four observations in the washroom review that were all satisfactorily dispositioned by CFM.

2.0 Radiation Protection

This safety and control area covers the implementation of a radiation protection program, in accordance with the *Radiation Protection Regulations*. The program must ensure that contamination and radiation doses are monitored and controlled.

CFM has established action levels pertaining to radiation protection, which are listed in CFM’s LCH. A result above an action level is investigated and remedial actions taken if necessary. During the second quarter there was no exceedance in the Radiation Protection program.

Whole Body Dose

Table 1 shows the second quarter whole body dose for three work groups: employees in the operations group, employees in administration/support roles, and outside contractors/visitors. The highest exposures are from the operations work group, consisting of production, inspection, and maintenance personnel. There were no action level exceedances for whole body dose in the radiation protection program during the quarter. In the second quarter, the majority of NEWs received a whole body dose below 1 mSv (96%).

Table 1

Second Quarter 2024 Whole Body Dose Results				
Work Group	Number of Individuals	Average (mSv)	Minimum (mSv)	Maximum (mSv)
Operations	114	0.27	0.00	2.08
Administration / Support	85	0.01	0.00	0.14
Contractors/Visitors	18	0.00	0.00	0.04
Monthly action level is 1.6 mSv (for NEWs such as production employees). Quarterly action level is 1.0 mSv (for NEWs such as support staff and contractors).				

Table 2 shows the quarterly average, minimum and maximum individual external whole body exposure for all NEWs from the second quarter of 2023 to the second quarter of 2024 (five monitoring periods). The average whole body dose in the second quarter for all NEWs was 0.15 mSv. The average whole body dose is higher than previous quarters with the exception of the second quarter of 2023. The maximum dose is higher than previous quarters. It is most accurate to compare the second quarter results in 2024 to the previous second quarter results in 2023 when normalized with production rates. The average dose in 2024 was lower and the maximum dose was higher than the second

quarter of 2023. The individual with the highest exposure in the second quarter was an operator who works in the Pelleting Area.

Table 2

Whole Body Dose Results by Quarter				
Monitoring Period	Number of Employees	Average Dose (mSv)	Minimum Dose (mSv)	Maximum Dose (mSv)
Q2 2023	195	0.17	0.00	1.37
Q3 2023	202	0.13	0.00	1.24
Q4 2023	208	0.11	0.00	1.07
Q1 2024	209	0.13	0.00	1.43
Q2 2024	217	0.15	0.00	2.08

Skin Dose

Table 3 shows the second quarter skin dose results for three work groups, employees in operations (monitored monthly), employees in administration and/or support roles and outside contractors/visitors (both monitored on a quarterly basis). The highest exposures are from the operations work group, consisting of production and maintenance personnel. The maximum skin dose for all NEWs was 11.05 mSv in the second quarter and the average skin dose for all NEWs was 0.95 mSv. The action levels for skin dose were not exceeded in the quarter. The majority of NEWs received a skin dose in the second quarter below 10 mSv (99%).

Table 3

Second Quarter 2024 Skin Dose Results				
Work Group	Number of Individuals	Average (mSv)	Minimum (mSv)	Maximum (mSv)
Operations	114	1.80	0.00	11.05
Administration / Support	85	0.01	0.00	0.61
Contractors/Visitors	18	0.00	0.00	0.05
Monthly action level is 20.0 mSv (for NEWs such as production employees). Quarterly action level is 5.0 mSv (for NEWs such as support staff and contractors).				

Table 4 shows the employee quarterly average and maximum individual skin exposure from the second quarter of 2023 to the second quarter of 2024. The average dose was lower in the second quarter than previous quarters (except the 2023 third and fourth quarter averages). The maximum dose in the second quarter was lower than previous quarters. It is most accurate to compare the second quarter results in 2024 to the previous

second quarter results in 2023 due to production rates. When these two quarters are compared the average dose, and the maximum dose was lower than the second quarter of 2023. The individual who received the maximum skin dose was a Pelleting area employee but was not the same individual with the maximum whole-body dose.

Table 4

Skin Dose Results by Quarter				
Monitoring Period	Number of Employees	Average Dose (mSv)	Minimum Dose (mSv)	Maximum Dose (mSv)
Q2 2023	195	1.14	0.00	12.37
Q3 2023	202	0.89	0.00	11.44
Q4 2023	208	0.77	0.00	11.87
Q1 2024	209	1.01	0.00	18.66
Q2 2024	217	0.95	0.00	11.05

Eye Dose

Table 5 shows the second quarter eye dose results for three work groups, employees in operations (monitored monthly), employees in administration and/or support roles and outside contractors/visitors (both monitored on a quarterly basis). The highest exposures are from the operations work group, consisting of production and maintenance personnel. The maximum eye dose for all NEWs was 5.82 mSv in the second quarter and the average eye dose for all NEWs was 0.50 mSv. The interim action levels for eye dose were not exceeded in the quarter. The majority of NEWs received an eye dose below 2 mSv (89%).

Table 5

Second Quarter 2024 Eye Dose Results				
Work Group	Number of Individuals	Average (mSv)	Minimum (mSv)	Maximum (mSv)
Operations	114	0.95	0.00	5.82
Administration / Support	85	0.01	0.00	0.40
Contractors/Visitors	18	0.00	0.00	0.04
*Monthly interim action level is 6.0 mSv				
*Quarterly interim action level is 12.0 mSv.				

*Interim action levels approved by CNSC July 11, 2022

Table 6 shows the employee quarterly average and maximum individual eye exposure from the second quarter of 2023 to the second quarter of 2024. The average dose in the second quarter of 2024 was lower than the second quarter of 2023 and the first quarter of

2024. The maximum eye dose in the second quarter was higher than previous quarters, except the first quarter of 2024. When production quantity is considered for the quarters, the average and maximum eye dose in 2024 was lower than 2023. The individual who received the maximum eye dose was a Pelleting area employee and was the same individual with the maximum whole body dose.

Table 6

Eye Dose Results by Quarter				
Monitoring Period	Number of Employees	Average Dose (mSv)	Minimum Dose (mSv)	Maximum Dose (mSv)
Q2 2023	195	0.59	0.00	5.55
Q3 2023	202	0.47	0.00	5.36
Q4 2023	208	0.40	0.00	5.38
Q1 2024	209	0.51	0.00	8.33
Q2 2024	217	0.50	0.00	5.82

Extremity Dose

The action level for extremity dose at CFM is 55 mSv per quarter. The quarterly action level applies to production NEWs who regularly handle product as part of their daily task. In 2021, CFM completed an assessment for extremity dose to align with the Radiation Protection Regulations (RPR) issued in 2020. Specifically, section 8 of the RPR adds the requirement to use a licensed dosimetry service for equivalent doses to the skin, hands, and feet if the annual dose would be over 50 mSv. It was determined that the extremity dose for NEWs at CFM do not exceed 50 mSv/yr; and therefore, NEWs are not required to wear dosimeters from a licensed dosimetry service provider. Extremity dose can be estimated using historic data.

If there is a change in processing techniques or work configurations that would impact extremity dose, then an assessment is required to determine if the 50 mSv/yr criteria would be exceeded. Changes to equipment or processes are captured through CFM's Management of Change (MoC) process. In the second quarter of 2024, there were no changes implemented that would have required an assessment of the impact to extremity dose; therefore, the second quarter extremity dose is equivalent to previous quarters.

Table 7 shows the average, minimum, and maximum extremity dose for NEWs over the period from the second quarter of 2023 to the second quarter of 2024. If the second quarter dose from 2021 was used as the basis for the second quarter of 2024 the average dose is estimated at 1.90 mSv and the maximum dose is estimated to be 10.50 mSv.

Table 7

Extremity Dose Results by Quarter				
Monitoring Period	Number of Employees	Average Dose (mSv)	Minimum Dose (mSv)	Maximum Dose (mSv)
Q2 2023	-	1.90*	0.00	10.50*
Q3 2023	-	1.25 ⁺	0.00	7.87 ⁺
Q4 2023	-	1.90*	0.00	10.50*
Q1 2024	-	1.90*	0.00	10.50*
Q2 2024	-	1.90*	0.00	10.50*

*estimation based on Q2 2021 data

+ estimation based on Q3 2021 data

Urine Analysis

The action level for a single routine urine sample is 10 µg/L of uranium concentration. During the quarter there was no exceedance of the urine analysis action level. Routine urine samples results analyzed during the second quarter are provided in Table 8 below.

Table 8

Second Quarter Routine Urine Analysis Results				
Work Group	Number of Samples	Average (µg/L)	Minimum* (µg/L)	Maximum (µg/L)
Operations	425	0.23	<0.20	1.40
Routine urine sample action level is 10 µg/L				

*detection limit of equipment is 0.2 µg/L therefore reported as <0.20 µg/L

Internal Dose

Routine urine analysis samples are collected on a biweekly basis for trending purposes; if an acute uptake is noted it is verified using lung counting and dose assigned if required.

In the second quarter of 2023, there were no routine urine sample results that were above the internal administrative level of 4.0 µgU/L. During the second quarter the spring campaign was conducted in May and June. In total 59 employees attended a lung count. The next campaign is scheduled for November and December of 2024.

Contamination Control

CFM has other programs to ensure radiation exposure levels remain low. An extensive contamination control program at CFM is zone control. The facility is divided into four zones for contamination control purposes. Zone 1 areas are designated as clean areas with no contamination permitted. Food and drink can be consumed in these areas and include the lunchroom and office areas. Zone 2 areas contain no open sources of radioactivity but have the potential for contamination. These areas include the assembly area, change rooms and the machine shop. Zone 3 areas are the access points to Zone 4. Zone 4 areas contain open sources of radioactivity and include the Pelleting Area. Consumption of food and drink are restricted in Zones 2, 3, and 4.

The administrative limits are provided in Table 9 as well as the routine contamination monitoring results for the second quarter. Of the 784 samples taken none exceeded the internal administrative control limits (ACL).

Table 9

Second Quarter Alpha Contamination Monitoring Results			
Area	# of Samples Taken	Administrative Limits (Bq/cm²)	# of Samples Above Limits
Zone 1	175	0.4	0
Zone 2	224	4.0	0
Zone 3	49	4.0	0
Zone 4	336	40	0

In-Plant Air

Routine air sampling is conducted at workstations throughout the plant continuously during operations to monitor airborne uranium dioxide in the work environment. The results for the second quarter of 2024 taken in each area, including the CAM heads in the PP2 area, dry Waste Treatment area and the Furnace Hall are shown in Table 10 below. There were no results above the 80-hour ACL or the the 2000 hour ACL in the second quarter.

Table 10

Second Quarter 2024 Uranium In-plant Air Sampling Results					
Plant Area	# of Samples	Average ($\mu\text{g U}/\text{m}^3$)	Maximum ($\mu\text{g U}/\text{m}^3$)	# Samples > ACL^{2000 hr}	# Samples > ACL^{80 hr}
Ceramics Lab	63	1	2	0	0
Compaction Room	126	2	8	0	0
Load Room	251	2	10	0	0
Pangborn Room	126	3	15	0	0
Pelleting Area	378	2	6	0	0
UO ₂ Grinders	252	2	11	0	0
Waste Treatment	63	3	10	0	0
PP2 Area	728	2	16	0	0
Dry Waste Treatment	455	1	8	0	0
Furnace Hall	546	1	4	0	0
TOTAL	2988	2	16	0	0
2000-hour Administrative Control Limit = 52 $\mu\text{g}/\text{m}^3$					
80-hour Administrative Control Limit = 595 $\mu\text{g}/\text{m}^3$					

Gamma Surveys

An ongoing ALARA initiative involves posting OSLD's around the facility to determine areas of elevated gamma radiation. The result for each location in the second quarter is summarized in Table 10. The results illustrate that the Fuel Storage Area had the highest gamma fields (6.6 $\mu\text{Sv}/\text{hr}$), which is expected due to the amount of product stored in the area. The area is posted instructing workers to limit the time spent in this area. The next highest reading (4.3 $\mu\text{Sv}/\text{hr}$) was in the PP2 Receiving area. This is also expected due to the amount of raw material stored in this area. Employees limit their time in this area as well.

Table 11

Second Quarter 2024 Gamma Survey Results						
Location #	Area	Result (μSv/hr)		Location #	Area	Result (μSv/hr)
13	Kitting	0.3		37	PP2 Powder Rec. N.	1.0
14	S Stacking	1.3		38	Powder Receipt	0.1
15	Stacking	0.2		39	U ₃ O ₈ Add-back	0.9
16	Pelleting Entry	0.6		40	S End Cap	0.2
17	Pelleting Lab	0.0		41	End Cap	0.3
18	S Grinding	1.1		42	N End Cap	0.1
19	Grinding	1.0		43	E Offices	0.0
20	N Grinding	0.5		44	S End Plate	0.0
21	S Wall	0.0		45	End Plate	0.0
22	S Furnace	0.4		46	N End Plate	0.1
23	Furnace	0.7		47	W Offices	0.0
24	N Furnace	0.0		48	S Inspection	0.1
25	SE Wall	0.3		49	Inspection	0.2
26	E Wall Furnace	0.4		50	N Inspection	1.7
27	NE Wall	0.3		51	W Inspection	0.1
28	N Corridor	0.2		52	Strapping Bay	0.3
29	Ceramics Lab	0.1		53	Packing	0.4
30	R7#1 East Wall	2.0		54	Fuel Storage Area	6.6
31	PP2 West Wall	0.1		55	Graphite East	0.2
32	S Pressing	0.6		56	BMS Loading	0.9
33	N Pressing	0.0		57	PP2 Receiving	4.3
34	Pangborn	0.7		58	PP2 Press R53-1	1.3
35	S. Waste Treat	1.9		59	PP2 East Wall	0.5
36	N. Waste Treat	0.6				

3.0 Conventional Health and Safety

This safety and control area covers the implementation of a program to manage non-radiological workplace safety hazards and to protect personnel and equipment. Table 12 shows the safety statistics for the Port Hope facility.

Table 12

2024 Safety Statistics					
Year / Parameter	Q1	Q2	Q3	Q4	YTD
First Aid Injuries	3	2			5
Medical Diagnostic Injuries	0	2			2
Medical Treatment Injuries	0	0			0
Lost Time Injuries	0	0			0
Lost Time Injury Frequency	0.0	0.0			0.0
Lost Time Injury Severity	0.0	0.0			0.0

There were no lost time incidents that occurred in the second quarter. The Total Recordable Injury Rate (TRIR) for April through June 2024 as well as the year to date is 0.0 for the Port Hope facility.

Health and Safety Activities

- Communications:** The second quarter safety meetings were held each month with a different topic including Workplace Violence, Heat Stress, and CoHE Protection. Each month an update is also included for the previous month on 4 topics: Safe, healthy, and rewarding workplace, clean environment, supportive communities, and outstanding financial performance. Safety statistics as well as the status on quality and production targets are also included in the update on these topics.
- Education and Training:** During the second quarter after completing the Bundle Manufacturing System and PP2 work instructions older work instructions were obsoleted. The analysis and design for SAT documents were completed for Waste Treatment and work started to create new work instructions. A SAT package for Radiation Technicians began with the analysis phase. A SAT package for Incident Commander training was completed and a pilot workshop was delivered. Feedback from the pilot was incorporated into the training. A SAT package for both Fall Protection and Non Standard Lift for Fuel Services (combined CFM and PHCF) were developed. By the end of the second quarter, the overall compliance score for training was 97.3%, ahead of the 95% corporate target. Safety critical “No Go” training was 97.7% complete by the end of the second quarter.

- **Safety Awareness Activities:** In the second quarter the JHSC continued to promote a STAR mindset via TV postings and wordsearch/crossword activity. During the heat stress days, the JHSC provided freezies to ensure employees were hydrated and cool. The JHSC also celebrated safety with a BBQ to acknowledge employees' contributions in keeping a safe workplace and shared gifts focusing on health & safety during summer activities.
- **JH&SC:** In the second quarter,
 - the JHSC identified a list of training requirements for committee members and began working with the training department to add this to members training library.
 - OPG was approached for benchmarking best practices and a tour was arranged. Committee members were able to attend an OPG JHSC meeting and discuss common safety issues between the two companies.
 - The committee participated in ergonomic assessments with the goal of reducing repetitive strain/sprain injuries. Committee members will then follow up with employees if any recommendations are implemented.
 - Focus remains on STAR promotion.
- **Safety & Industrial Hygiene:** In the second quarter sound level and lighting assessments were conducted to identify any areas that could potentially lead to hearing damage and to ensure that lighting levels align with CLC requirements. Ergonomic assessments also continued with recommendations provided by a third party ergonomists being dispositioned to ensure corrective actions are taken.

4.0 Environmental Protection

This safety and control area covers the programs that monitor and control all releases of nuclear and hazardous substances into the environment, as well as their effects on the environment, as the result of licensed activities.

Public Dose

Public dose is calculated by summing the total amount of uranium dioxide released to air in process stacks, building ventilation as well as liquid emissions, and is added to the gamma dose to the critical receptor (represented by location #12). This is demonstrated in the following formula:

$$\text{Public Dose} = \text{Dose Air (stacks)} + \text{Dose Air (building ventilation)} + \text{Dose Water} + \text{Dose Gamma}$$

The estimated public dose, along with each component, for the second quarter of 2023 to the second quarter of 2024 is provided in Table 13. In the second quarter of 2024 the public dose reported was adjusted to take into account the annual release limit versus a quarterly fraction of the release limit for air and liquid emissions. This represents a more accurate calculation of public dose. The data provided in Table 13 has been adjusted to reflect the change in the calculation for trending purposes.

The total dose to the member of the public from air, liquid emissions and gamma levels for the quarter is calculated to be 0.062 mSv, which is lower than previous quarters except the third quarter of 2023. The third quarter of 2023 result was lower than normal due to the removal of fuel bundles from the Fuel Storage Building.

Table 13

Public Dose by Quarter (mSv/quarter)					
DRL Component	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Air (stacks)	0.000	0.000	0.000	0.000	0.000
Air (building ventilation)	0.007	0.005	0.007	0.006	0.007
Liquid	0.000	0.000	0.000	0.000	0.000
Gamma (Location 12)	0.061	0.030	0.059	0.063	0.055
Total dose to Critical Receptor (location #12)	0.068	0.035	0.066	0.069	0.062

Gamma Monitoring

The perimeter gamma derived release limit for the critical receptor at location #12 is 1.35 $\mu\text{Sv/hr}$ and the action level is 1.0 $\mu\text{Sv/hr}$. The other DRL's listed for gamma monitoring are for location #1 and location #2 at 4.96 $\mu\text{Sv/hr}$ and 0.46 $\mu\text{Sv/hr}$ respectively with the action level of 0.2 $\mu\text{Sv/hr}$ for both locations. There were no exceedances of the DRL's or the action levels during the second quarter.

Table 14 provides the quarterly gamma levels in $\mu\text{Sv/hr}$ for all fence line monitoring locations (i.e., 1-12) for the quarter.

Table 14

Second Quarter 2023 Gamma Monitoring Results ($\mu\text{Sv/hr}$)		
Location	Action Level	Dose Rate
1	0.2	0.01
2	0.2	0.03
3	1.0	0.00
4	1.0	0.00
5	1.0	0.00
6	1.0	0.00
7	1.0	0.00
8	1.0	0.00
9	1.0	0.00
10	1.0	0.00
11	1.0	0.29
12	1.0	0.30

The monitoring results for location 12 (closest location to the critical receptor) from the second quarter in 2023 to the second quarter of 2024 are provided in Table 15. Results have been corrected to consider background gamma levels by subtracting 0.08 $\mu\text{Sv/hr}$. The dose rate for the second quarter of 2024 at location 12 is lower than previous quarters except the third quarter of 2023. The dose rate in that quarter was lower due to the relocation of bundles in the third and fourth quarters to facilitate cleaning of the Fuel Storage Building.

Table 15

Gamma Monitoring Results at Critical Receptor by Quarter (µSv/hr)			
Period	Regulatory Limit (DRL)	Action Level	DRL Contribution
Q2 2023	1.35	1.0	0.33
Q3 2023	1.32	1.0	0.16
Q4 2023	1.32	1.0	0.32
Q1 2024	1.32	1.0	0.34
Q2 2024	1.32	1.0	0.30

Stack Emissions

The total amount of uranium dioxide released to the environment during the quarter in gaseous effluent from stacks was 0.001 kg. The action level for stack emissions is 2.0 µg/m³ uranium concentration for a daily stack reading. There were no exceedances of the action levels with respect to air emissions during the quarter. Table 16 provides the average and maximum uranium concentration for all stacks in µg/m³ from the second quarter of 2023 to the second quarter of 2024.

In the second quarter, a new database for calculating environmental data was commissioned. One of the improvements was the ability to calculate and report the stack data in grams/hour (g/hr). CFM is in the process of setting an action level for the stack emissions in this format. Table 17 has been added to include the average and maximum results in g/hr.

The overall average concentrations, µg/m³ measured in stack emissions in the second quarter were lower than or equal to the concentrations in previous quarters. The results reported in g/hr show that stack emissions with the Mist Collector emitting the most.

Table 16

Daily Stack Emissions by Quarter (µg/m³)							
Source	Action Level	Avg. / Max.	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
PP2 West	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.0	0.0	0.0	0.0
PP2 East	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.0	0.0	0.0	0.0
Waste Treatment Area Absolute	2.0	Avg.	0.1	0.1	0.1	0.1	0.0
		Max.	0.3	0.3	0.3	0.4	0.1
BMS Extraction	2.0	Avg.	0.1	0.0	0.0	0.0	0.0
		Max.	0.2	0.2	0.1	0.1	0.0
Hoffman Vacuum	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.2	0.1	0.0	0.0	0.0
Pangborn North Dust Collector	2.0	Avg.	0.1	0.0	0.0	0.0	0.0
		Max.	0.3	0.2	0.2	0.1	0.2
Pangborn South Dust Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.1	0.1	0.1	0.0	0.0
DeVilbiss Mist Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.1	0.1	0.1	0.1	0.2
Furnace Burn-off	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.1	0.0	0.0	0.0	0.0
Overall	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.3	0.3	0.3	0.4	0.2

Table 17

Daily Stack Emissions by Quarter (g/hr)							
Source	Release Limit	Avg. / Max.	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
PP2 West	1.2	Avg.	-	-	-	-	0.0000
		Max.	-	-	-	-	0.0001
PP2 East	1.2	Avg.	-	-	-	-	0.0000
		Max.	-	-	-	-	0.0001
Waste Treatment Area Absolute	1.2	Avg.	-	-	-	-	0.0000
		Max.	-	-	-	-	0.0004
BMS Extraction	1.2	Avg.	-	-	-	-	0.0000
		Max.	-	-	-	-	0.0001
Hoffman Vacuum	1.2	Avg.	-	-	-	-	0.0000
		Max.	-	-	-	-	0.0000
Pangborn North Dust Collector	1.2	Avg.	-	-	-	-	0.0001
		Max.	-	-	-	-	0.0005
Pangborn South Dust Collector	1.2	Avg.	-	-	-	-	0.0001
		Max.	-	-	-	-	0.0003
DeVilbiss Mist Collector	1.2	Avg.	-	-	-	-	0.0003
		Max.	-	-	-	-	0.0014
Furnace Burn-off	1.2	Avg.	-	-	-	-	0.0000
		Max.	-	-	-	-	0.0002
Overall	1.2	Avg.	-	-	-	-	0.0001
		Max.	-	-	-	-	0.0014

Building Ventilation Emissions

The action level for building ventilation is 1.0 g/hr and is monitored daily for the Pelleting Area and 0.4 g/hr for the PP2 area. There were no exceedances of either action level in the second quarter.

part of the database improvements commissioned in the second quarter there was a change to the data source for the building ventilation emissions from the Pelleting Area. Building ventilation emissions are estimated using indoor air monitoring performed via a continuous air sampling system and/or fixed air sampling system at sampling locations throughout facility. In the second quarter, the emissions for the Pelleting were calculated using the continuous air sampling system (CAM heads) instead of the fixed air sampling system which was used prior to this change. CAM heads continuously monitor air in the area for the presence of airborne radioactive particulate contamination and signal an

alarm when an airborne release occurs at specified levels. Unlike fixed air monitoring, CAM heads run continuously 24 hours a day 7, days a week.

The estimated release of uranium dioxide in exhaust ventilation from both areas during the quarter was 0.27 kg (0.24 kg from the Pelleting Area and 0.03 kg from the PP2 area).

Table 18 provides the average and maximum uranium concentration emitted through the building ventilation system in g/hr from the second quarter of 2023 to the second quarter of 2024.

The table demonstrates that the PP2 area has much lower emissions through building ventilation than the Pelleting Area and the results are consistent between the quarters. In the second quarter of 2024 the building ventilation average for both the PP2 area and the Pelleting area along with the maximum emission rate for the PP2 area was lower than or comparable to previous quarters whereas the Pelleting Area maximum result was higher than the rates in the second and third quarter.

Table 18

Building Ventilation Rates by Quarter (g/hr)							
Parameter	Action Level	Measure	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2* 2024
Uranium Emissions from Pelleting Area	1.0	Average	0.16	0.16	0.19	0.15	0.11
		Maximum	0.30	0.25	0.39	0.45	0.33
		Minimum	0.10	0.08	0.09	0.09	0.04
Uranium Emissions from PP2 Area	0.4	Average	0.02	0.02	0.01	0.01	0.01
		Maximum	0.07	0.07	0.06	0.05	0.05
		Minimum	0.01	0.00	0.00	0.00	0.00

* Results reported using CAM heads

Liquid Emissions

The action level for liquid effluent released to the sewer is 0.07 mg/L. In the second quarter there was no exceedance of the action level.

Table 19 provides the average and maximum uranium concentration for a single composite sample from the second quarter of 2023 to the second quarter of 2024. Also provided in the table is the minimum and maximum pH measured in the samples. The average concentration of uranium in the second quarter coupled with the higher volume of water resulted in a higher estimated discharge.

Table 19

Sanitary Sewer Emissions by Quarter							
Parameter	Action Level (mg/L)	Measure	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Uranium (mg/L)	0.1	Average	0.02	0.01	0.01	0.02	0.01
		Maximum	0.03	0.02	0.02	0.03	0.02
pH (pH units)	6.5	Minimum	7.3	7.3	7.1	7.1	7.5
	9.0	Maximum	7.9	7.9	8.1	7.6	8.0
Volume of water	-	(m ³)	6704	5547	3058	5377	5142
Estimated Discharge	-	(kg)	0.12	0.06	0.04	0.09	0.07

Ambient Air Monitoring

High volume air samples are collected in the four corners of the CFM property. Table 20 shows the quarterly average and maximum results for all four locations from the second quarter of 2023 to the second quarter of 2024.

Table 20

Overall Uranium-in-Air Concentration at Hi-Vol Stations by Quarter (µg/m ³)					
Parameter	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Average	0.0004	0.0004	0.0004	0.0002	0.0003
Maximum	0.0010	0.0021	0.0012	0.0004	0.0005

Table 21 provides the quarterly average and maximum uranium-in-air concentrations for all locations from the second quarter of 2023 to the second quarter of 2024.

Table 21

Uranium-in-Air Concentration at Hi-Vol Stations by Quarter ($\mu\text{g}/\text{m}^3$)					
Quarter	Result	East	North	Northwest	Southwest
Q2 2023	Average	0.0003	0.0004	0.0004	0.0004
	Maximum	0.0006	0.0010	0.0007	0.0008
Q3 2023	Average	0.0003	0.0006	0.0003	0.0004
	Maximum	0.0008	0.0021	0.0008	0.0013
Q4 2023	Average	0.0003	0.0004	0.0004	0.0004
	Maximum	0.0007	0.0012	0.0012	0.0010
Q1 2024	Average	0.0001	0.0002	0.0002	0.0002
	Maximum	0.0002	0.0003	0.0003	0.0004
Q2 2024	Average	0.0002	0.0003	0.0003	0.0003
	Maximum	0.0005	0.0005	0.0004	0.0005

Legacy Waste Management

CFM continues the project to review drummed material that did not meet the disposal site's criteria; this requires systematically opening each drum to visually identify the contents, sort, and segregate like materials. From this activity, recoverable uranium material is consolidated to be verified and the uranium recovered with other scrap material. Marginally contaminated material is repackaged, rescanned, and prepped for disposal in the United States. One shipment was made in the second quarter in which 9284 kg of material was removed from site.

5.0 Public Information Program

During the second quarter of 2023, CFM continued to meet the requirements of CNSC RD/GD 3.2.1, *Public Information and Disclosure programs*.

Public Engagement

Students from Loyalist College's Radiation Safety Program were provided with a tour of CFM Port Hope. Cameco sponsored and attended the Northumberland Diverse Peoples Coalition, Spring into Spring fundraiser on April 14. On May 3, Cameco announced a significant gift to the newly established Youth Wellness Hub Ontario in Port Hope. The announcement included an in-person event and local news release. Cameco's Step Up for Mental Health run took place on May 11th. Over 700 people registered for the event, raising approximately \$78,000 for mental health. Cameco delivered door knockers to residents near the CFM facility on May 13 to notify them of potential noise resulting from Milestone doing a drilling portion of the wall construction along the west fence line. The annual Cameco Charity Golf Tournament took place on June 14. The sold-out event raised over \$21,000 for mental health.

The annual Cameco Community BBQ took place on June 27 in Memorial Park, Port Hope. The BBQ is an opportunity for community members to interact with Cameco leadership and subject matter experts to learn more about Cameco's operations. Cameco provided visual displays with information on operations and activities such as CFM, benefits of nuclear, regulatory compliance, environmental monitoring and Vision in Motion. Approximately 400 people attended the BBQ. Cameco notified the community of the BBQ through a postcard mailer to over 2,700 address and social media.

The spring issue of Energize was mailed to all addresses in Port Hope in mid-June. The issue featured stories on the Port Hope Chamber tours, Vision in Motion, the upcoming public opinion polling and recent community investments.

Cameco provided free advertising to local charitable organizations with its sponsorship of MyFM's Community Partner Program. Through the quarter, Northumberland Humane Society, Capitol Theatre and Diversity Festival benefitted from this sponsorship by receiving advertising.

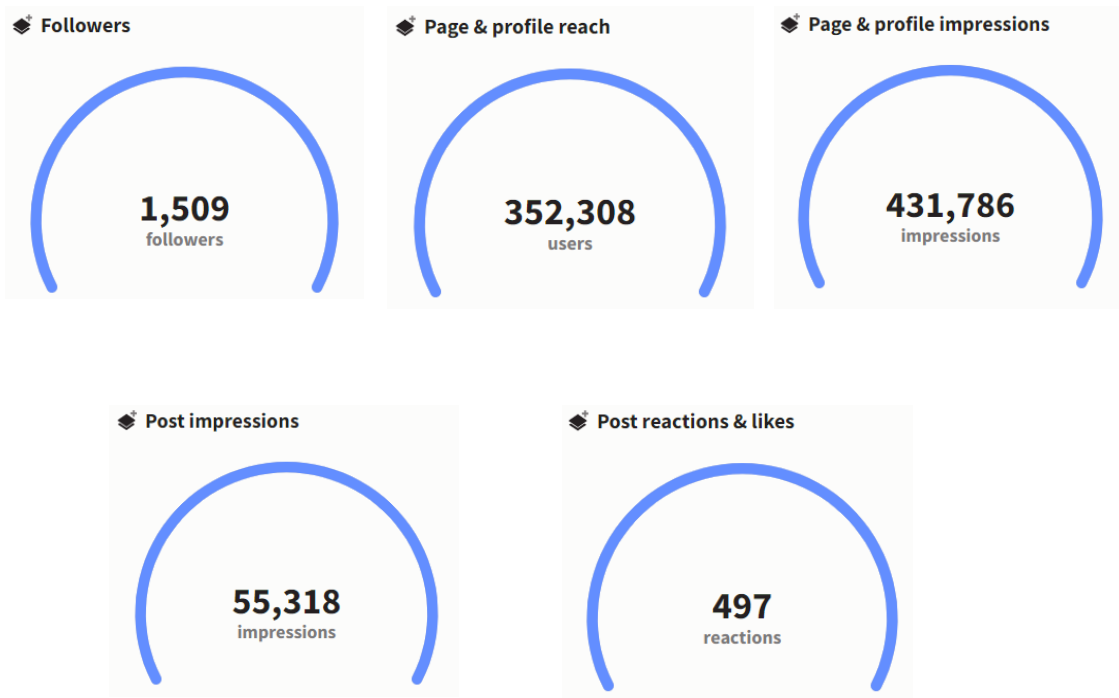
Public Disclosure

CFM made one public disclosures during the first quarter: [Environment & Safety - Conversion: Port Hope - Fuel Services - Businesses - Cameco](#)

Posting Date	May 14, 2024
Incident Date	May 13, 2024
Incident	Reportable Spill
Details	<p>On May 13, 2024, at 7:30 a.m., an overflow was observed from a groundwater treatment system maintenance hole cover in the CFM Port Hope parking lot. The groundwater flowed to the municipal storm sewer system, which discharges to Gages Creek. It is estimated that 100L of untreated groundwater was discharged.</p> <p>There was no health or safety risk posed to the public, workers, or the environment by the discharge of untreated groundwater</p>
Corrective Action	<p>The pump was shut down, stopping the flow of groundwater. The cause of the leak was found and repaired; the system was then returned to normal operation by 10:30 a.m. Two water samples were collected for evaluation of volatile organic compound (VOC) concentrations – one at the maintenance hole and one from ponded water at the municipal catch basin inlet. Results are pending.</p> <p>The Canadian Nuclear Safety Commission, the Spills Action Centre and the Municipality of Port Hope have been notified.</p>
Cameco Environmental Effect Rating	1

Social Media

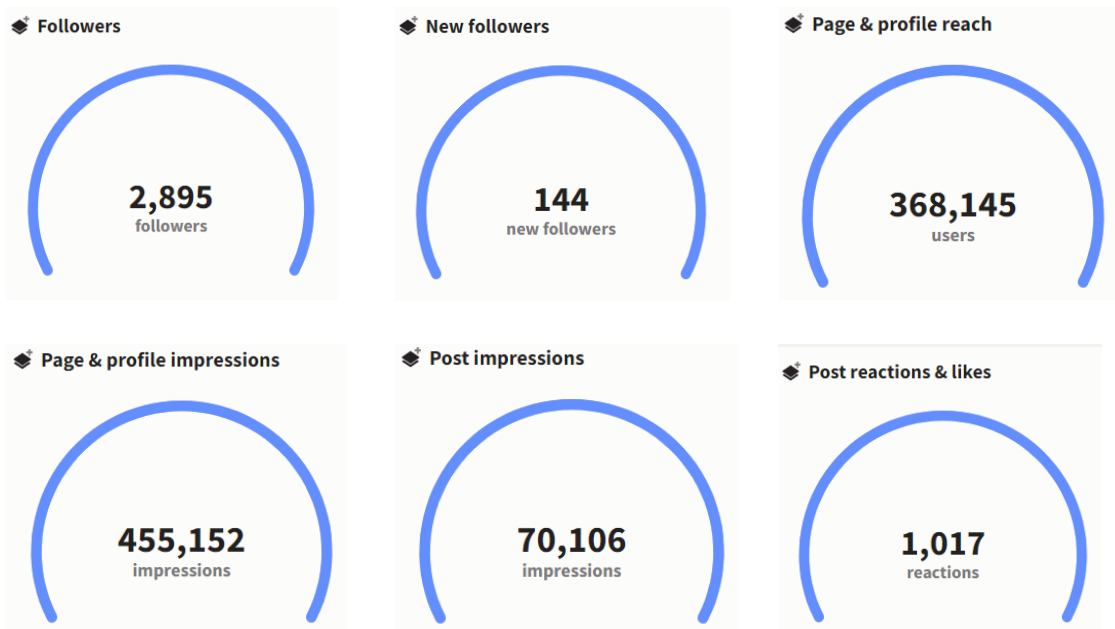
Facebook: April 1, 2024 to June 30, 2024



Other platforms (Instagram, X & YouTube): April 1, 2024 to June 30, 2024



All Platforms: April 1, 2024 to June 30, 2024



Top Performing Posts

Top posts



Cameco Ontario
May 04, 00:18

Tim Gitzel, president and CEO of Cameco Corporation was in Port Hope this evening to present a \$500,000 cheque to the new Youth Wellness Hub Ontario (YWHO) in Port Hope. We are thrilled to support this important

74 likes and reactions



Cameco Ontario
Jun 11, 16:03

Last Thursday, over 50 Blind River Cameco employees volunteered for the 19th annual Cameco Cares Day. The employees did an amazing job on their projects in Blind River, Mississauga First Nations, Township of the North

27 likes and reactions



Cameco Ontario
May 30, 19:01

Cameco's Step Up for Mental Health 5k raised over \$78,000 for local mental health services! Thank you to all the participants, volunteers, donors, and community members who supported this year's Step Up for Mental

24 likes and reactions

Top posts



cameco_ontario
Jun 11, 16:05

Last Thursday, over 50 Blind River Cameco employees volunteered for the 19th annual Cameco Cares Day. The employees did an amazing job on their projects in Blind River, Mississauga First Nations, Township of the North

34 likes



cameco_ontario
May 31, 20:11

May is Mental Health Awareness Month across Canada. As we wrap up the month, we're sharing some photos from our Step Up for Mental Health 5k run/walk that was held a couple weeks ago in Downtown Cobourg. Thank

29 likes



cameco_ontario
May 07, 15:02

Last week, volunteers were at @TimHortons locations across our community to support Five Counties Children's Centre, the recipients of this year's Smile Cookie campaign in Cobourg and Colborne. Thank you

23 likes

Top tweets



@CamecoOntario
Apr 22, 14:03

We're sharing stories from our employees who have contributed to Cameco's success over the past 35 years. For Brian Reilly, Senior VP & COO, Cameco's safety culture means no job is so important that we can't take

11.11% engagement rate



@CamecoOntario
May 21, 18:55

Energize your career with Cameco! The Port Hope Conversion Facility currently has an opening for a 2nd Class Operating Engineer. Apply online today!
<https://ow.ly/TmuJ50RREXP>

9.76% engagement rate



@CamecoOntario
May 11, 11:35

Today is the day! Our Step Up for Mental Health 5k run/walk returns this morning in Victoria Park, Cobourg. And look who's back! Come down to help us cheer on participants as they cross the finish line. #StepUpONT

8.64% engagement rate

Cameco Ontario's 184 posts (combined across Facebook, Instagram, X) consisted of:

- Facebook: 68
- Instagram: 60
- X: 56

These posts included information such as:

- Career opportunities
- CEO, Tim Gitzel's involvement in industry conversations such as at the World Nuclear Spotlight
- My Cameco stories profiling Cameco employees
- Indigenous engagement activities
- Cameco's Step Up for Mental Health events including our 5km run/walk and golf tournament

Website

Information about the Step Up for Mental Health 5K was updated:

- [Step Up for Mental Health 5K Run/Walk returns to Ontario | Cameco Fuel Services](#)

Spring issue of Energize

- [Energize - Spring 2024 | Cameco Fuel Services](#)

The Q1 2024 Compliance Report:

- [Media Library - Media - Cameco Fuel Services](#)

2023 Sustainability Report:

- [Cameco Releases 2023 Sustainability Report | Cameco](#)

One public disclosure:

- [Environment & Safety - Conversion: Port Hope - Fuel Services - Businesses - Cameco](#)

News release announcing gift to Youth Wellness Hub in Port Hope:

- [Cameco Supports Northumberland County's New Youth Wellness Hub with \\$500,000 Gift | Cameco Fuel Services](#)

Media Analysis

Cameco received media coverage for its \$500,000 gift to Port Hope's new Youth Wellness Hub:

- **Ontario government supports new youth wellness hub in Port Hope** – May 2, 2024 – Global News
 - [Ontario government supports new youth wellness hub in Port Hope | Global News](#)
- **Cameco supports new Youth Wellness Hub with half-a-million dollar donation** – May 7, 2024 – GoNorthumberland.ca
 - [Cameco supports new Youth Wellness Hub with half-a-million dollar donation | 93.3 MyFM \(gonorthumberland.ca\)](#)

Cameco also received media coverage for its Step Up for Mental Health 5km run/walk:

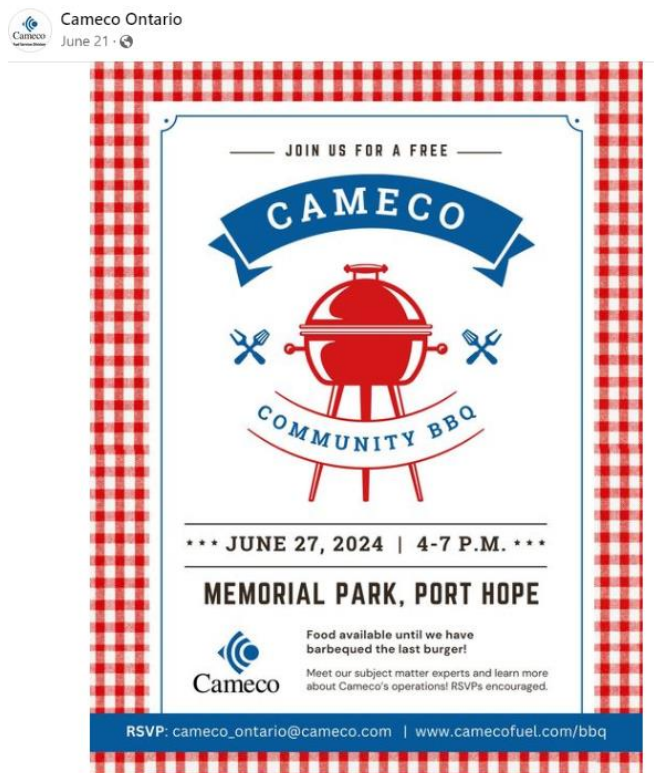
- **COMMUNITY SPOTLIGHT: Hey Northumberland, are you ready to Step Up for Mental Health?** – May 9, 2024 – [GoNorthumberland.ca](https://gonorthumberland.ca)
 - [COMMUNITY SPOTLIGHT: Hey Northumberland, are you ready to Step Up for Mental Health? | 93.3 MyFM \(gonorthumberland.ca\)](https://gonorthumberland.ca)

Communication Products

Spring issue of Energize

- [Energize - Spring 2024 | Cameco Fuel Services](#)

Community BBQ invitation



News release announcing gift to Youth Wellness Hub in Port Hope

- [Cameco Supports Northumberland County's New Youth Wellness Hub with \\$500,000 Gift | Cameco Fuel Services](#)

6.0 Indigenous Engagement

Regular engagement continued with Curve Lake First Nation (CLFN) and the Mississaugas of Scugog Island First Nation (MSIFN).

From June 19-21, Cameco hosted representatives from Curve Lake First Nation (CLFN) in Saskatchewan. The visit combined an educational tour of Cameco's Cigar Lake mine with a cultural immersion experience in the northern community of Pinehouse. The visit aimed to enhance CLFN's understanding of the nuclear fuel cycle and its safety measures, while also fostering community connections through participation in local traditions and community events.

On April 1, an email was sent to Curve Lake, Alderville, Hiawatha, Mississaugas of Scugog Island, Mohawks of the Bay of Quinte and Chippewas of Rama First Nations with details of Cameco's Step-Up for Mental Health 5k walk/run with information regarding the event and registration details. An invitation to Port Hope's annual community barbeque was sent to Curve Lake, Alderville, Mississaugas of Scugog Island and Hiawatha First Nations on June 24.

On April 24, Hiawatha requested to receive public disclosures going forward. Public disclosures are discussed at the next available meeting, where applicable. Public disclosures were shared with Curve Lake, Mississaugas of Scugog Island, and Hiawatha First Nations.

The 2023 Annual Compliance Reports for PHCF and CFM were sent via email to Curve Lake, Alderville, Hiawatha, Mississaugas of Scugog Island, Mohawks of the Bay of Quinte and Chippewas of Rama First Nations on April 23 and the 2024 Q1 Compliance Reports for PHCF and CFM were sent to Curve Lake, Alderville, Hiawatha, Mississaugas of Scugog Island, Mohawks of the Bay of Quinte and Chippewas of Rama First Nations on June 3.

7.0 OTHER MATTERS OF REGULATORY INTEREST

There were no processing activities of enriched material conducted on site in the second quarter of 2024 and CFM met all site-specific reporting requirements.

8.0 CONCLUDING REMARKS

Cameco is committed to the safe, clean, and reliable operations of its facilities and continually strives to improve safety performance and processes to ensure the safety of both its employees and the local residents.

During the second quarter of 2024, CFM did not exceed any CNSC regulatory limits. CFM maintained environmental emissions and public radiation exposures to levels that are a fraction of the regulatory limits.

Cameco's relationship with residents remains strong and we are committed to maintaining the strong support and trust we have developed over the past several years.