



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

**Reporting Period July 1 – September 30, 2024**

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

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Submitted to:  
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## **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 third quarter, there were no exceedances of the action levels in the radiation protection or environmental protection program.

In the third quarter there was a planned shutdown of the facility for three weeks in July. The planned shutdown provides an opportunity to complete maintenance activities, complete any scheduled facility and equipment upgrades as well as allows operators an opportunity to use vacation time.

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## 1.0 Third 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 third quarter.

The LCH for the facility references core CFM documents that form the licensing basis in each safety and control area. There were no documents submitted to the CNSC in the third quarter of 2024.

In the third quarter there was a planned shutdown of the facility for three weeks in July. The planned shutdown provides an opportunity to complete maintenance activities, complete any scheduled facility and equipment upgrades as well as allows operators an opportunity to use vacation time.

There was one event, in July, that was reportable to the CNSC Duty Officer as detailed in the *Reg. Doc 3.1.2 Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*. A fire alarm was activated due to an automated signal received from the fire suppression system on one of the two pelleting area dust control units. This signal automatically triggers a fire department response with the municipality of Port Hope Fire and Emergency Services (PHFES) responding. The PHFES responders attended the area and confirmed that there was no heat detected with no visible smoke or release of suppression system; therefore, the alarm was considered a false alarm. The cause of the alarm was a faulty notifier module. The dust control units remained locked out until the module was replaced the following day.

There was also an unusual event in September that required notification of the CNSC Duty Officer as detailed in the *Reg. Doc 3.1.2 Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*. A fire alarm was activated in CFM's Fuel Storage Building causing an audible alarm in the main facility. Site personnel performed a visual check on the exterior of the building and no smoke or flame was detected. PHFES responded to the site and confirmed that there was

no indication of a fire; however, they reported some of the ABC dry chemical fire suppressant had been discharged. This incident is suspected to be the result of faulty equipment within the fire suppression system. An investigation into the cause of the incident is in process after which corrective actions will be identified.

In the third 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 third 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 no changes to the equipment in which third party reviews were required in the third quarter.

## 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 third quarter there was no exceedance in the Radiation Protection program.

### Whole Body Dose

Table 1 shows the third 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 third quarter, all NEWs received a whole body dose below 1 mSv (100%).

**Table 1**

<b>Third Quarter 2024 Whole Body Dose Results</b>				
<b>Work Group</b>	<b>Number of Individuals</b>	<b>Average (mSv)</b>	<b>Minimum (mSv)</b>	<b>Maximum (mSv)</b>
Operations	113	0.19	0.00	0.91
Administration / Support	88	0.01	0.00	0.26
Contractors/Visitors	19	0.02	0.00	0.12
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 third quarter of 2023 to the third quarter of 2024 (five monitoring periods). The average whole body dose in the third quarter for all NEWs was 0.10 mSv. The average and maximum whole body dose is lower than previous quarters. The third quarter dose for Whole Body, Skin and Eye were all lower than previous quarters. The data was confirmed to be correct with each month accounted. It appears the lower dose may be attributed to the three week shutdown in July. The individual with the highest exposure in the third quarter was an operator who works in the Pelleting Area.

**Table 2**

<b>Whole Body Dose Results by Quarter</b>				
<b>Monitoring Period</b>	<b>Number of Employees</b>	<b>Average Dose (mSv)</b>	<b>Minimum Dose (mSv)</b>	<b>Maximum Dose (mSv)</b>
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
Q3 2024	220	0.10	0.00	0.91

Skin Dose

Table 3 shows the third 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 7.63 mSv in the third quarter and the average skin dose for all NEWs was 0.65 mSv. The action levels for skin dose were not exceeded in the quarter. All NEWs received a skin dose in the third quarter below 10 mSv (100%).

**Table 3**

<b>Third Quarter 2024 Skin Dose Results</b>				
<b>Work Group</b>	<b>Number of Individuals</b>	<b>Average (mSv)</b>	<b>Minimum (mSv)</b>	<b>Maximum (mSv)</b>
Operations	113	1.24	0.00	7.63
Administration / Support	88	0.02	0.00	0.51
Contractors/Visitors	19	0.02	0.00	0.12
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 third quarter of 2023 to the third quarter of 2024. The average and maximum dose was lower in the third quarter than previous. 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**

<b>Skin Dose Results by Quarter</b>				
<b>Monitoring Period</b>	<b>Number of Employees</b>	<b>Average Dose (mSv)</b>	<b>Minimum Dose (mSv)</b>	<b>Maximum Dose (mSv)</b>
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
Q3 2024	220	0.62	0.00	7.63

Eye Dose

Table 5 shows the third 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 3.70 mSv in the third quarter and the average eye dose for all NEWs was 0.35 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 (95%).

**Table 5**

<b>Third Quarter 2024 Eye Dose Results</b>				
<b>Work Group</b>	<b>Number of Individuals</b>	<b>Average (mSv)</b>	<b>Minimum (mSv)</b>	<b>Maximum (mSv)</b>
Operations	113	0.66	0.00	3.70
Administration / Support	88	0.02	0.00	0.34
Contractors/Visitors	19	0.02	0.00	0.12
*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 third quarter of 2023 to the third quarter of 2024. The average and maximum dose in the third quarter of 2024 was lower than previous quarters. 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 skin dose.

**Table 6**

<b>Eye Dose Results by Quarter</b>				
<b>Monitoring Period</b>	<b>Number of Employees</b>	<b>Average Dose (mSv)</b>	<b>Minimum Dose (mSv)</b>	<b>Maximum Dose (mSv)</b>
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
Q3 2024	220	0.35	0.00	3.70

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 third quarter of 2024, there were no changes implemented that would have required an assessment of the impact to extremity dose; therefore, the third quarter extremity dose is equivalent to previous quarters.

The fire suppression discharge incident occurred on September 26, 2024 with bundle washing activities beginning in October; therefore, assessments for extremity dose were conducted in the fourth quarter and will be reported in the fourth quarter report.

Table 7 shows the average, minimum, and maximum extremity dose for NEWs over the period from the third quarter of 2023 to the third quarter of 2024. If the third quarter dose from 2021 was used as the basis for the third quarter of 2024 the average dose is estimated at 1.25 mSv and the maximum dose is estimated to be 7.87 mSv.

**Table 7**

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

\*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 third quarter are provided in Table 8 below.

**Table 8**

<b>T Quarter Routine Urine Analysis Results</b>				
<b>Work Group</b>	<b>Number of Samples</b>	<b>Average (µg/L)</b>	<b>Minimum* (µg/L)</b>	<b>Maximum (µg/L)</b>
Operations	437	0.22	<0.20	0.90
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 third quarter of 2024, there were no routine urine sample results that were above the internal administrative level of 4.0 µgU/L.

During the third quarter there was no routine lung counts conducted. The next campaign is scheduled for November/December 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 third quarter. Of the 593 samples taken none exceeded the internal administrative control limits (ACL).

**Table 9**

<b>Third Quarter Alpha Contamination Monitoring Results</b>			
<b>Area</b>	<b># of Samples Taken</b>	<b>Administrative Limits (Bq/cm<sup>2</sup>)</b>	<b># of Samples Above Limits</b>
Zone 1	117	0.4	0
Zone 2	163	4.0	0
Zone 3	35	4.0	0
Zone 4	278	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 third 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; however, there were two results above the 2000 hour ACL in the third quarter. Both elevated results occurred in the Pangborn room. Both incidents occurred as a result of a split air line on a piece of equipment. The airline was replaced and tested several times to ensure there were no leaks present. Employees wear respirators when working in the Pangborn Room. Urine samples were provided to ensure there was no exposure to personnel as a result of the leak.

**Table 10**

<b>Third Quarter 2024 Uranium In-plant Air Sampling Results</b>					
<b>Plant Area</b>	<b># of Samples</b>	<b>Average (<math>\mu\text{g U}/\text{m}^3</math>)</b>	<b>Maximum (<math>\mu\text{g U}/\text{m}^3</math>)</b>	<b># Samples &gt; ACL<sup>2000 hr</sup></b>	<b># Samples &gt; ACL<sup>80 hr</sup></b>
Ceramics Lab	48	1	2	0	0
Compaction Room	96	2	9	0	0
Load Room	192	3	11	0	0
Pangborn Room	95	9	138	2	0
Pelleting Area	288	2	12	0	0
UO <sub>2</sub> Grinders	192	3	14	0	0
Waste Treatment	48	4	48	0	0
PP2 Area	460	1	8	0	0
Dry Waste Treatment	531	1	6	0	0
Furnace Hall	736	2	21	0	0
<b>TOTAL</b>	<b>2686</b>	<b>2</b>	<b>138</b>	<b>2</b>	<b>0</b>
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 third quarter is summarized in Table 10. The results illustrate that the Fuel Storage Area had the highest gamma fields (6.9  $\mu\text{Sv}/\text{hr}$ ), 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 (4.7  $\mu\text{Sv}/\text{hr}$ ) 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. It was noted in the third quarter, the South Pressing Area dose rate was the third highest reading at 2.8  $\mu\text{Sv}/\text{hr}$ . This area typically has a dose rate less than 1.0  $\mu\text{Sv}/\text{hr}$ . The reconfiguration in the Pressing area would account for the increased readings with cart storage along the south wall. The area is being investigated to determine solutions to reduce the dose rate in preparation for the operation of an additional press in the area.

**Table 11**

<b>Third Quarter 2024 Gamma Survey Results</b>						
<b>Location #</b>	<b>Area</b>	<b>Result (µSv/hr)</b>		<b>Location #</b>	<b>Area</b>	<b>Result (µSv/hr)</b>
13	Kitting	0.3		37	PP2 Powder Rec. N.	1.1
14	S Stacking	1.1		38	Powder Receipt	0.1
15	Stacking	0.3		39	U <sub>3</sub> O <sub>8</sub> Add-back	1.6
16	Pelleting Entry	0.6		40	S End Cap	0.2
17	Pelleting Lab	0.1		41	End Cap	0.4
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	0.5		46	N End Plate	0.1
23	Furnace	0.8		47	W Offices	0.0
24	N Furnace	0.1		48	S Inspection	0.0
25	SE Wall	0.3		49	Inspection	0.2
26	E Wall Furnace	0.5		50	N Inspection	1.1
27	NE Wall	0.4		51	W Inspection	0.0
28	N Corridor	0.2		52	Strapping Bay	0.3
29	Ceramics Lab	0.1		53	Packing	0.2
30	R7#1 East Wall	2.1		54	Fuel Storage Area	6.9
31	PP2 West Wall	0.2		55	Graphite East	0.2
32	S Pressing	2.8		56	BMS Loading	0.8
33	N Pressing	0.6		57	PP2 Receiving	4.7
34	Pangborn	0.8		58	PP2 Press R53-1	1.6
35	S. Waste Treat	1.4		59	PP2 East Wall	0.5
36	N. Waste Treat	0.5				

### 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		10
Medical Diagnostic Injuries	0	2	1		3
Medical Treatment Injuries	0	0	1		1
Lost Time Injuries	0	0	0		0
Lost Time Injury Frequency	0.0	0.0	0.0		0.0
Lost Time Injury Severity	0.0	0.0	0.0		0.0

There were no lost time incidents that occurred in the third quarter. The Total Recordable Injury Rate (TRIR) for July through September 2024 is 3.3 for the Port Hope facility. The year to date is 1.0.

#### Health and Safety Activities

- Communications:** The third quarter safety meetings were held each month with a different topic including Return to Work, Ergonomics, WHIMIS, Spills Awareness, Containment, Aspects and Impacts, Fall Arrest and Hoisting and Rigging. 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 third quarter work continued on the SAT packages for Waste Treatment and Radiation Technicians. The SAT package for Confined Space was in the process of being revised. The SAT package for Fall Protection required further updates based on new site requirements. By the end of the third quarter, overall compliance results for training were at an all-time high at 98.3% complete. Safety critical “No Go” training was at an all-time high of 99.8% complete.

- **Safety Awareness Activities:** In the third quarter the JHSC continued to promote a STAR mindset with a word search and crossword activities. The annual Kids Safety Calendar was also launched. Kids are encouraged to submit a safety related poster depicting what safety means to them. Winning entries receive a prize and will be displayed in the CFM calendar.
- **JH&SC:** In the third quarter the JHSC:
  - reviewed the industrial hygiene reports for sound levels and lighting.
  - encouraged the use of hearing protection at all times and along with senior leadership has agreed to provide custom fit hearing protection to all employees in 2025.
  - 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.
  - continued focus on STAR promotion.
- **Safety & Industrial Hygiene:** In the third quarter sound level and lighting assessment reports were reviewed with one location identified as having above threshold sound levels (Pangborn Room) and multiple locations requiring new lighting. Follow up to assigned ergonomic related findings continued as well as identifying areas for new ergonomic assessments. An ergonomic assessment is being arranged for the Monza Grinder in the fourth quarter.



#### 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 third quarter of 2023 to the third 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 0.087 mSv, which is higher than previous quarters. Fuel bundles from the fire suppression discharge event from 2023 had been moved back to the fuel storage building causing a higher dose rate.

**Table 13**

<b>Public Dose by Quarter (mSv/quarter)</b>					
<b>DRL Component</b>	<b>Q3 2023</b>	<b>Q4 2023</b>	<b>Q1 2024</b>	<b>Q2 2024</b>	<b>Q3 2024</b>
Air (stacks)	0.000	0.000	0.000	0.000	0.000
Air (building ventilation)	0.005	0.007	0.006	0.007	0.008
Liquid	0.000	0.000	0.000	0.000	0.000
Gamma (Location 12)	0.030	0.059	0.063	0.055	0.087
Total dose to Critical Receptor (location #12)	0.035	0.066	0.069	0.062	0.095

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 third 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**

<b>Third Quarter 2023 Gamma Monitoring Results (<math>\mu\text{Sv/hr}</math>)</b>		
<b>Location</b>	<b>Action Level</b>	<b>Dose Rate</b>
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	0.32
12	1.0	0.47

The monitoring results for location 12 (closest location to the critical receptor) from the third quarter in 2023 to the third 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 third quarter of 2024 at location 12 is higher than previous quarters. The dose rate in that quarter was higher due to the return of bundles in the third quarter to the Fuel Storage Building.

**Table 15**

<b>Gamma Monitoring Results at Critical Receptor by Quarter (µSv/hr)</b>			
<b>Period</b>	<b>Regulatory Limit (DRL)</b>	<b>Action Level</b>	<b>DRL Contribution</b>
Q3 2023	1.35	1.0	0.16
Q4 2023	1.35	1.0	0.32
Q1 2024	1.35	1.0	0.34
Q2 2024	1.35	1.0	0.30
Q3 2024	1.35	1.0	0.47

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/m<sup>3</sup> 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/m<sup>3</sup> from the third quarter of 2023 to the third quarter of 2024.

In the third 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). After collecting data for stack emissions in this format in the new database, CFM is in the process of setting an action level in g/hr units. Table 17 has been added to include the average and maximum results in g/hr.

The overall average concentrations, µg/m<sup>3</sup> measured in stack emissions in the third quarter were lower than or equal to the concentrations in previous quarters (except the second quarter of 2024). The results reported in g/hr show that stack emissions with the Mist Collector were the highest emitter which is similar to the second quarter results.

**Table 16**

<b>Daily Stack Emissions by Quarter (µg/m<sup>3</sup>)</b>							
<b>Source</b>	<b>Action Level</b>	<b>Avg. / Max.</b>	<b>Q3 2023</b>	<b>Q4 2023</b>	<b>Q1 2024</b>	<b>Q2 2024</b>	<b>Q3 2024</b>
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	0.0	0.0
		Max.	0.3	0.3	0.4	0.1	0.1
BMS Extraction	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.2	0.1	0.1	0.0	0.3
Hoffman Vacuum	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.1	0.0	0.0	0.0	0.0
Pangborn North Dust Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.2	0.2	0.1	0.2	0.3
Pangborn South Dust Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.1	0.1	0.0	0.0	0.1
DeVilbiss Mist Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.1
		Max.	0.1	0.1	0.1	0.2	0.2
Furnace Burn-off	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.0	0.0	0.0	0.0
<b>Overall</b>	<b>2.0</b>	<b>Avg.</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
		<b>Max.</b>	<b>0.3</b>	<b>0.3</b>	<b>0.4</b>	<b>0.2</b>	<b>0.3</b>

**Table 17**

Daily Stack Emissions by Quarter (g/hr)							
Source	Release Limit	Avg. / Max.	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024
PP2 West	1.2	Avg.	-	-	-	0.0000	0.0000
		Max.	-	-	-	0.0001	0.0001
PP2 East	1.2	Avg.	-	-	-	0.0000	0.0000
		Max.	-	-	-	0.0001	0.0001
Waste Treatment Area Absolute	1.2	Avg.	-	-	-	0.0000	0.0000
		Max.	-	-	-	0.0004	0.0002
BMS Extraction	1.2	Avg.	-	-	-	0.0000	0.0000
		Max.	-	-	-	0.0001	0.0003
Hoffman Vacuum	1.2	Avg.	-	-	-	0.0000	0.0000
		Max.	-	-	-	0.0000	0.0000
Pangborn North Dust Collector	1.2	Avg.	-	-	-	0.0001	0.0001
		Max.	-	-	-	0.0005	0.0008
Pangborn South Dust Collector	1.2	Avg.	-	-	-	0.0001	0.0001
		Max.	-	-	-	0.0003	0.0005
DeVilbiss Mist Collector	1.2	Avg.	-	-	-	0.0003	0.0005
		Max.	-	-	-	0.0014	0.0010
Furnace Burn-off	1.2	Avg.	-	-	-	0.0000	0.0000
		Max.	-	-	-	0.0002	0.0003
<b>Overall</b>	<b>1.2</b>	<b>Avg.</b>	-	-	-	<b>0.0001</b>	<b>0.0001</b>
		<b>Max.</b>	-	-	-	<b>0.0014</b>	<b>0.0010</b>

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 third 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. Beginning in the second quarter, the emissions for the Furnace Hall of the Pelleting Area 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 0.33 kg (0.3 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 third quarter of 2023 to the third 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 third quarter of 2024 the building ventilation average for the PP2 area was lower than or comparable to previous quarters. The average result for PP2 and the average and maximum results for the Pelleting Area was higher than the rates in previous quarters.

**Table 18**

<b>Building Ventilation Rates by Quarter (g/hr)</b>							
<b>Parameter</b>	<b>Action Level</b>	<b>Measure</b>	<b>Q3 2023</b>	<b>Q4 2023</b>	<b>Q1 2024</b>	<b>Q2* 2024</b>	<b>Q3* 2024</b>
Uranium Emissions from Pelleting Area	1.0	Average	0.16	0.19	0.15	0.11	0.14
		Maximum	0.25	0.39	0.45	0.33	0.53
		Minimum	0.08	0.09	0.09	0.04	0.03
Uranium Emissions from PP2 Area	0.4	Average	0.02	0.01	0.01	0.01	0.01
		Maximum	0.07	0.06	0.05	0.05	0.05
		Minimum	0.00	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 0.10 mg/L. In the third 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 third quarter of 2023 to the third quarter of 2024. Also provided in the table is the minimum and maximum pH measured in the samples. The discharge in the third quarter is lower than previous quarters except the fourth quarter of 2023.

**Table 19**

Sanitary Sewer Emissions by Quarter							
Parameter	Action Level (mg/L)	Measure	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024
Uranium (mg/L)	0.1	Average	0.01	0.01	0.02	0.01	0.01
		Maximum	0.02	0.02	0.03	0.02	0.02
pH (pH units)	6.5	Minimum	7.3	7.1	7.1	7.5	7.4
	9.0	Maximum	7.9	8.1	7.6	8.0	8.2
Volume of water	-	(m <sup>3</sup> )	5547	3058	5377	5142	5197
Estimated Discharge	-	(kg)	0.06	0.04	0.09	0.07	0.05

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 third quarter of 2023 to the third quarter of 2024.

**Table 20**

Overall Uranium-in-Air Concentration at Hi-Vol Stations by Quarter (µg/m <sup>3</sup> )					
Parameter	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024
Average	0.0004	0.0004	0.0002	0.0003	0.0002
Maximum	0.0021	0.0012	0.0004	0.0005	0.0006

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

**Table 21**

<b>Uranium-in-Air Concentration at Hi-Vol Stations by Quarter (<math>\mu\text{g}/\text{m}^3</math>)</b>					
<b>Quarter</b>	<b>Result</b>	<b>East</b>	<b>North</b>	<b>Northwest</b>	<b>Southwest</b>
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
Q3 2024	Average	0.0002	0.0003	0.0003	0.0002
	Maximum	0.0003	0.0005	0.0006	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 third quarter in which 6722 kg of material was removed from site.

## 5.0 Public Information Program

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

### Public Engagement

Between July 9-26, 2024, Cameco conducted public opinion polling of 303 Port Hope residents to estimate support for Cameco's Port Hope operations and to gather perspectives regarding the corporation. The results were released at the end of August and show that Port Hope residents continue to demonstrate consistent support for Cameco's operations. Key findings indicate:

- 91% of respondents support the continuation of Cameco's operations in Port Hope
- 82% expressed pride in having Cameco as a part of the community
- 93% describe themselves as knowledgeable about Cameco's operations.

From August 16-23, 2024, Cameco sponsored Local Manufacturing Week through 93.3 MyFM. As part of this public support, CFM's manager of operations spoke with 93.3 MyFM to share the role of Cameco in supporting local manufacturing.

In early September, the Summer 2024 issue of Energize was delivered to all addresses in Port Hope. This issue included information on our 2023 Sustainability Report, a story of Cameco and Curve Lake First Nation members travelling to Saskatchewan, Cameco and Missassaugas of Scugog Island First Nation formalizing their working relationship, an update on the funds raised for the Cameco Fund for Mental Health, and an invitation to community members to visit Cameco at the Port Hope Fair and an ad for employment opportunities.

From September 13-15, 2024, Cameco representatives attended the annual Port Hope Fair. This was an opportunity to interact with Cameco leadership and subject matter experts to learn more about Cameco's operations through our information booth including visual displays with information on operations and activities such as CFM, benefits of nuclear, regulatory compliance, environmental monitoring and Vision in Motion. Twelve employees volunteered over the weekend, speaking to approximately 400 community members.

At the end of September, four employees volunteered on the Habitat for Humanity Northumberland build site in Baltimore, Ontario. This was the first build date with two additional builds hosted in October.

Cameco provided free advertising to local charitable organizations with its sponsorship of MyFM's Community Partner Program. Through the quarter, Cultivate Festival, Habitat

for Humanity Northumberland and Northumberland Diverse Peoples Coalition benefitted from this sponsorship by receiving advertising.

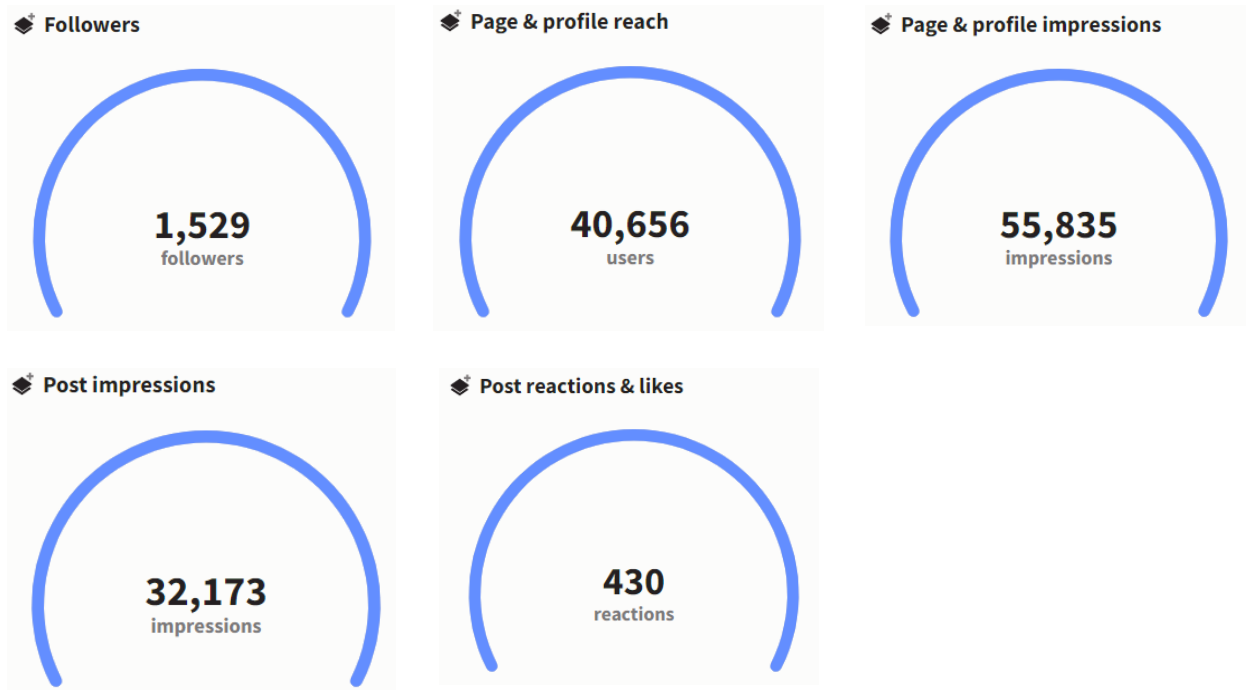
Public Disclosure

CFM made two public disclosures during the third quarter: [Environment & Safety - Fuel Manufacturing: Port Hope & Cobourg - Fuel Services - Businesses - Cameco](#)

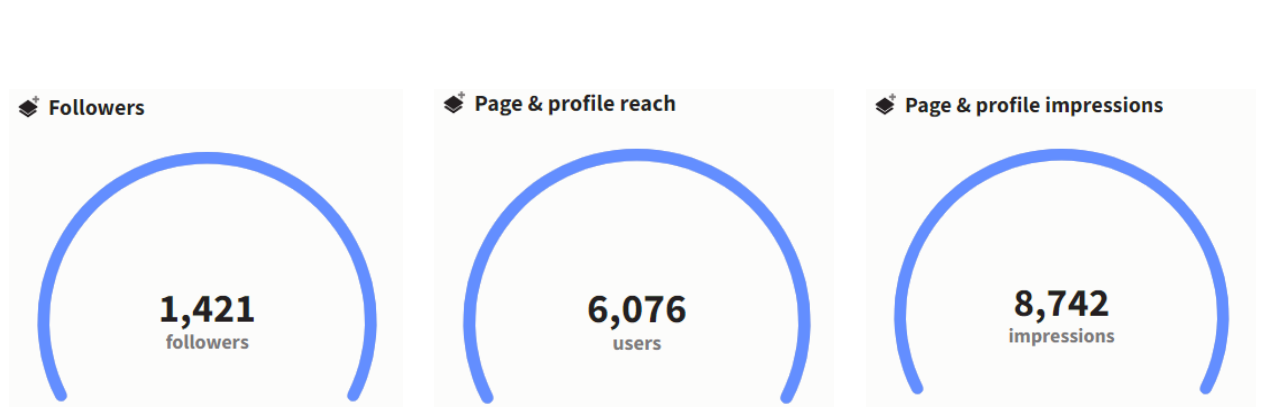
<b>Posting Date</b>	September 26, 2024
<b>Incident Date</b>	September 26, 2024
<b>Incident</b>	False Fire Alarm (suspected)
<b>Details</b>	<p>A fire alarm was activated in the fuel storage area at Cameco Fuel Manufacturing, automatically triggering a response from the Municipality of Port Hope Fire Services and Port Hope Police. Fire Services personnel inspected the area and confirmed that there was no indication of a fire, and this incident is suspected to be a false alarm.</p> <p>The cause of the alarm is under investigation.</p>
<b>Corrective Action</b>	<p>The Emergency Operations Centre was activated, workers were evacuated to the muster area and roll call taken. Personnel returned to work after all clear was given.</p> <p>The Canadian Nuclear Safety Commission has been notified.</p>
<b>Cameco Environmental Effect Rating</b>	1
<b>Posting Date</b>	July 22, 2024
<b>Incident Date</b>	July 11, 2024
<b>Incident</b>	False Fire Alarm
<b>Details</b>	<p>A fire alarm was activated due to an automated signal received from the fire suppression system on one of the two pelleting areas of the dust control units. This signal automatically triggers a fire department response. Municipality of Port Hope Fire Services responded, walked the area and confirmed that there was no fire and that this was a false alarm.</p>
<b>Corrective Action</b>	<p>The Emergency Operations Centre was activated, personnel were evacuated to the muster area and roll call taken. Personnel returned to work after the all clear was given.</p> <p>The issue was related to a faulty notifier module in the CO2 fire suppression system which was replaced the following day. The Canadian Nuclear Safety Commission has been notified.</p>
<b>Cameco Environmental Effect Rating</b>	2

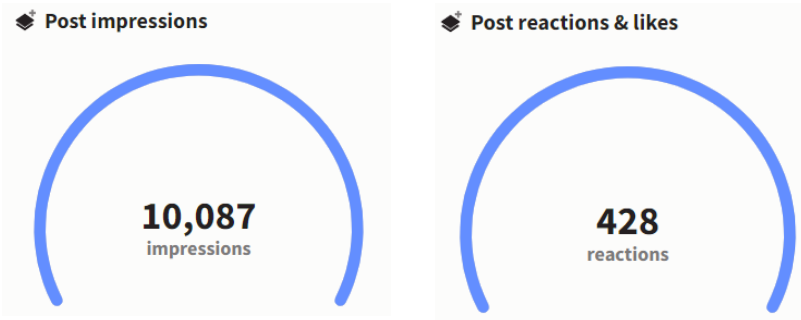
## Social Media

### **Facebook:** *July 1, 2024 to September 30, 2024*

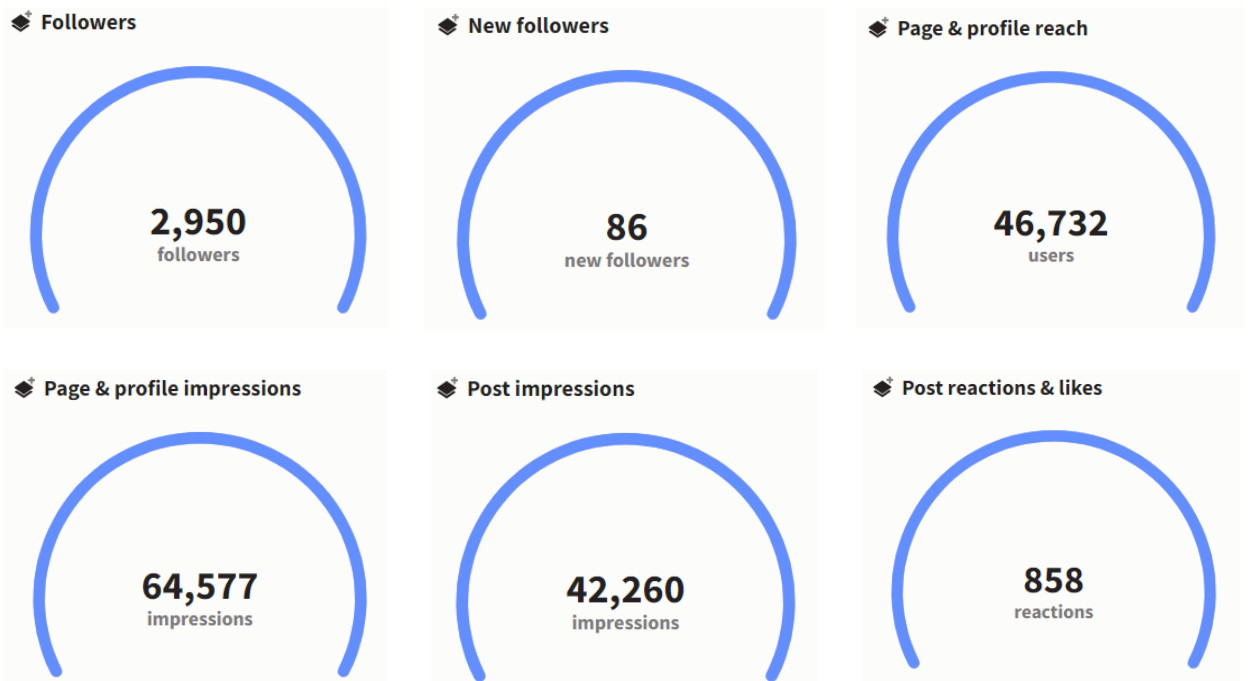


### **Other platforms (Instagram, X & YouTube):** *July 1, 2024 to September 30, 2024*





**All Platforms:** July 1, 2024 to September 30, 2024



## Top Performing Posts

### Top posts



**Cameco Ontario**  
Sep 19, 16:04

Last Thursday, Cameco's Blind River Refinery hosted its 2nd annual Community BBQ. We were joined by over 300 guests who enjoyed a barbecued meal in beautiful Sellers Park, while learning more about Cameco's local

**32** likes and reactions



**Cameco Ontario**  
Jul 29, 22:15

Today we are proud to be with Chief Kelly LaRocca and representatives from the Mississaugas of Scugog Island First Nation to formalize our relationship. Read more: <https://www.camecofuel.com/media/news/cameco-and->

**31** likes and reactions



**Cameco Ontario**  
Aug 28, 15:25

Last week, representatives of Curve Lake First Nation were welcomed on site to safely tour our Port Hope Conversion Facility and Cameco Fuel Manufacturing. In the morning, representatives were guided through our UO<sub>2</sub> and UF<sub>6</sub>

**28** likes and reactions

### Top posts



**cameco\_ontario**  
Jul 29, 22:15

Today we are proud to be with Chief Kelly LaRocca and representatives from the Mississaugas of Scugog Island First Nation to formalize our relationship. Read more: <https://www.camecofuel.com/media/news/cameco-and->

**42** likes



**cameco\_ontario**  
Sep 19, 16:04

Last Thursday, Cameco's Blind River Refinery hosted its 2nd annual Community BBQ. We were joined by over 300 guests who enjoyed a barbecued meal in beautiful Sellers Park, while learning more about Cameco's local

**24** likes



**cameco\_ontario**  
Aug 28, 15:25

Last week, representatives of Curve Lake First Nation were welcomed on site to safely tour our Port Hope Conversion Facility and Cameco Fuel Manufacturing. In the morning, representatives were guided through our UO<sub>2</sub> and UF<sub>6</sub>

**23** likes

### Top tweets



and local communities are fundamental to Cameco's success. We highlight our social achievements in our 2023 Sustainability Report.

**@CamecoOntario**  
Sep 04, 21:36

**14.29%** engagement rate



**@CamecoOntario**  
Aug 29, 21:00

According to the most recent Port Hope third-party public opinion survey, 91 per cent of respondents support the continuation of Cameco's operations locally. Thank you to all Port Hope participants. We appreciate and value your

**12.64%** engagement rate



**@CamecoOntario**  
Jul 15, 14:03

We're sharing stories from employees who contribute to Cameco's success. As General Manager of our Port Hope Conversion Facility, Dave Ingalls knows all about converting uranium into the nuclear fuel needed to

**9.41%** engagement rate

---

## Summary

Cameco Ontario's 152 posts (combined across Facebook, Instagram, X and YouTube):

- Facebook: 54 posts
- Instagram: 52 posts
- X: 46 posts

These posts covered information such as:

- Key findings from our 2023 Sustainability Report
- Indigenous engagement activities
- Career opportunities
- My Cameco stories profiling Cameco employees including CFM general manager Doug Jensen
- Community outreach activities including the annual Port Hope Fair

## Website

Summer issue of Energize

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

The Q2 2024 Compliance Report:

- [CFM 2024 Q2 Compliance Report.pdf \(camecofuel.com\)](#)

News release announcing that Cameco and Mississaugas of Scugog Island First National formalize their working relationship:

- [Cameco and Mississaugas of Scugog Island First Nation formalize their working relationship | Cameco Fuel Services](#)

2024 Polling results:

- [Port Hope Polling Results 2024 | Cameco Fuel Services](#)

## Media Analysis

Cameco received media coverage for its sponsorship of Local Manufacturing Week:

- Next week we'll be showcasing Local Manufacturers, fueled by the support of Cameco – August 16, 2024 – GoNorthumberland.ca
  - [Next week we'll be showcasing Local Manufacturers, fueled by the support of Cameco | 93.3 myFM \(gonorthumberland.ca\)](#)

### Communication Products

Summer issue of Energize

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

News release announcing that Cameco and Mississaugas of Scugog Island First National formalize their working relationship:

- [Cameco and Mississaugas of Scugog Island First Nation formalize their working relationship | Cameco Fuel Services](#)

Reports to share 2024 Polling results:

- [Port Hope Polling Results 2024 | Cameco Fuel Services](#)



## 6.0 Indigenous Engagement

Cameco continues regular engagement with Curve Lake First Nation (CLFN) and the Mississaugas of Scugog Island First Nation (MSIFN).

Cameco sponsored MSIFN's Pow Wow held on July 20/21. On July 29th, Cameco met with MSIFN Chief to celebrate the official signing and formalizing of our relationship. Cameco and MSIFN issued a joint release announcing the formalization of the relationship. The news release was sent to local media, posted on [camecofuel.com](http://camecofuel.com) and shared on social media. On September 16, Cameco and MSIFN met to share more detailed information about MSIFN, its community and Cameco. Cameco and MSIFN outlined future work plans into 2025.

On July 10th Cameco attended the Harvester meeting at CLFN. Cameco set up a booth and provided information about Cameco's operations to community members. Cameco hosted CLFN on August 21st for meetings including a tour of the Port Hope Conversion Facility and Fuel Manufacturing. The meeting focused on joint initiatives, areas of interest and planning into 2025.

On August 7 Cameco met with Hiawatha First Nation for an introductory meeting. Hiawatha expressed interest in formalizing a relationship with Cameco.

On August 19 the spring edition of Energize was shared with Curve Lake, Mississaugas of Scugog Island, Hiawatha, Mohawks of the Bay of Quinte and Rama First Nations and the summer edition was shared on September 16.

Public disclosures for Cameco Fuel Manufacturing were shared with Curve Lake, Mississaugas of Scugog Island and Hiawatha First Nations.

## **7.0 OTHER MATTERS OF REGULATORY INTEREST**

There were no processing activities of enriched material conducted on site in the third 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 third 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.