



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

**Reporting Period January 1 – March 31, 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 first quarter, there were no exceedances of the action levels in the radiation protection or environmental protection program.

In the first quarter there was no planned shutdown of the facility. There was organizational changes that occurred in the first quarter which required reporting to the CNSC.

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## 1.0 First 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 first quarter. There was a change in organization that occurred in the first quarter in which the single point of contact (SPOC) for corresponding with the CNSC was transferred to the Senior Coordinator of Regulatory Compliance when the Manager of Environmental, Occupational, Health, and Safety position was eliminated. Additionally, a new position, Superintendent, Safety, Health and Environment, has management responsibility for the Safety department which includes Radiation Protection, Environment, and Occupational Health and Safety. This position acts as the back-up SPOC with the CNSC for licensed activities.

The LCH for the facility references core CFM documents that form the licensing basis in each safety and control area. There were two documents that were submitted to the CNSC in the first quarter of 2024.

- Physical Security Plan (MSP 30-01), version #11 – plan was updated to reflect current systems and processes in place.
- Safety and Health Manual (CFM-SH), version #4 - Updated references throughout the document to account for a new document structure for Safety and Health Procedures (SHP), added reference to the Hazard Prevention Program, updated the language to match the corporate policy, as well as updated self-assessment frequencies to align with the corporate procedure.

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

There was no reportable event that required notification of the duty officer as detailed in the *Nuclear Safety and Control Act* during the first quarter and 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 first 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 was one change to the ventilation system in the Powder Prep Area in which a third party review was submitted to the CNSC in the first quarter.

The review concluded that the proposed modification to the ventilation in the PP2 area is in accordance with the applicable codes and standards and that the intended level of fire and life safety in the building will be maintained.

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

### Whole Body Dose

Table 1 shows the first 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 first quarter, the majority of NEWs received a whole body dose below 1 mSv (99%).

**Table 1**

<b>First 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	108	0.25	0.00	1.43
Administration / Support	86	0.01	0.00	0.14
Contractors/Visitors	15	0.00	0.00	0.03
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 first quarter of 2023 to the first quarter of 2024 (five monitoring periods). The average whole body dose in the first quarter for all NEWs was 0.13 mSv. The average whole body dose is lower than previous quarters with the exception of the fourth of 2023. The maximum dose is higher than previous quarters, except the first quarter of 2023. It is most accurate to compare the first quarter results in 2024 to the previous first quarter results in 2023 when normalized with production rates. The average dose and maximum dose in 2024 was lower than previous quarters when

production rates are considered. The individual with the highest exposure in the first 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>
Q1 2023	198	0.15	0.00	1.54
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

Skin Dose

Table 3 shows the first 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 18.66 mSv in the first quarter and the average skin dose for all NEWs was 1.01 mSv. The action levels for skin dose were not exceeded in the quarter. The majority of NEWs received a skin dose in the first quarter below 10 mSv (99%).

**Table 3**

<b>First 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	108	1.95	0.00	18.66
Administration / Support	86	0.01	0.00	0.28
Contractors/Visitors	15	0.00	0.00	0.02
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 first quarter of 2023 to the first quarter of 2024. The average and maximum dose was higher in the first quarter than previous quarters (except the second quarter average). It is most accurate to compare the first quarter results in 2024 to the previous first quarter results in 2023 due to production rates. When these two quarters are

compared the average dose was lower and the maximum dose was higher than the first quarter of 2023. The individual who received the maximum skin dose was a Pelleting area employee and was 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>
Q1 2023	198	0.97	0.00	12.95
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

Eye Dose

Table 5 shows the first 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 8.33 mSv in the first quarter and the average eye dose for all NEWs was 0.51 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 (90%).

**Table 5**

<b>First 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	108	0.99	0.00	8.33
Administration / Support	86	0.01	0.00	0.17
Contractors/Visitors	15	0.00	0.00	0.03
*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 first quarter of 2023 to the first quarter of 2024. The average dose in the first quarter of 2024 was lower than or equal to the first two quarters of 2023. The maximum eye dose in the first quarter was higher than previous quarters. When production quantity



is considered for the quarters, the average eye dose in 2024 was lower than 2023 and the maximum was higher. The individual who received the maximum eye dose was a Pelleting area employee and was the same individual with the maximum whole body and 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>
Q1 2023	198	0.51	0.00	6.05
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

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 first quarter of 2024, there were no changes implemented that would have required an assessment of the impact to extremity dose; therefore, the first 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 first quarter of 2023 to the first quarter of 2024. The dose for the first quarter of 2023 would be similar to the second quarter of 2021 as the most representative. If the second quarter dose from 2021 was used as the basis for the first 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**

<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>
Q1 2023	-	1.90*	0.00	10.50*
Q2 2023	-	1.90*	0.00	10.50*
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*

\*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 first quarter are provided in Table 8 below.

**Table 8**

<b>First 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	488	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 first quarter of 2023, there were no routine urine sample results that were above the internal administrative level of 4.0 µgU/L.

During the first quarter there were no routine lung counts conducted. The next campaign is scheduled for May/June 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 first quarter. Of the 722 samples taken none exceeded the internal administrative control limits (ACL).

**Table 9**

<b>First 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	120	0.4	0
Zone 2	192	4.0	0
Zone 3	42	4.0	0
Zone 4	368	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 first 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 and one result above the 2000 hour ACL in the first quarter. The elevated reading occurred when a Millwright was completing inspection of exhaust fans and belts. When it came to the Pangborn motor and fan, the millwright shut down both systems from outside causing the louvers to not close, allowing the extraction to backdraft into dry waste treatment area. The incident was entered into CIRS with an activity to review the work instructions. This was completed

and improvements were made on how to shut down the Pangborns for inspections. Employees in the area were wearing respirators and submitted urine samples.

**Table 10**

<b>First 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	63	1	1	0	0
Compaction Room	125	1	2	0	0
Load Room	251	1	3	0	0
Pangborn Room	125	1	12	0	0
Pelleting Area	376	2	11	0	0
UO <sub>2</sub> Grinders	250	2	16	0	0
Waste Treatment	63	5	30	0	0
PP2 Area	728	1	19	0	0
Dry Waste Treatment	455	2	156	1	0
Furnace Hall	546	1	12	0	0
<b>TOTAL</b>	<b>2982</b>	<b>2</b>	<b>156</b>	<b>0</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 first quarter is summarized in Table 10. The results illustrate that the Fuel Storage Area had the highest gamma fields (5.4  $\mu\text{Sv}/\text{hr}$ ), 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 (4.0  $\mu\text{Sv}/\text{hr}$ ) was in the PP2 Receiving area. This is also expected due to the amount of material stored in this area. Employees limit their time in this area as well.

**Table 11**

<b>First 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	0.2		37	PP2 Powder Rec. N.	0.9
14	S Stacking	1.0		38	Powder Receipt	0.0
15	Stacking	0.2		39	U <sub>3</sub> O <sub>8</sub> Add-back	0.9
16	Pelleting Entry	0.5		40	S End Cap	0.2
17	Pelleting Lab	0.1		41	End Cap	0.2
18	S Grinding	1.0		42	N End Cap	0.1
19	Grinding	0.9		43	E Offices	0.0
20	N Grinding	0.6		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	0.0
23	Furnace	0.4		47	W Offices	0.0
24	N Furnace	0.0		48	S Inspection	0.1
25	SE Wall	0.2		49	Inspection	0.2
26	E Wall Furnace	0.5		50	N Inspection	0.9
27	NE Wall	0.3		51	W Inspection	0.0
28	N Corridor	0.2		52	Strapping Bay	0.2
29	Ceramics Lab	0.1		53	Packing	0.2
30	R7#1 East Wall	1.6		54	Fuel Storage Area	5.4
31	PP2 West Wall	0.2		55	Graphite East	0.2
32	S Pressing	0.5		56	BMS Loading	0.6
33	N Pressing	0.6		57	PP2 Receiving	4.0
34	Pangborn	0.7		58	PP2 Press R53-1	1.4
35	S. Waste Treat	1.3		59	PP2 East Wall	0.6
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				3
Medical Diagnostic Injuries	0				0
Medical Treatment Injuries	0				0
Lost Time Injuries	0				0
Lost Time Injury Frequency	0.0				0.0
Lost Time Injury Severity	0.0				0.0

There were no lost time incidents that occurred in the first quarter. The Total Recordable Injury Rate (TRIR) for January through March 2024 is 0.0 for the Port Hope facility.

#### Health and Safety Activities

- Communications:** The first quarter safety meetings were held each month with a different topic including Return to Work, Hand Protection, and Respiratory 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 first quarter, the development of work instructions for the Bundle Manufacturing System (BMS) was completed. The process to obsolete old work instructions began. The work instructions for PP2 were also created and the majority were published. A few work instructions remain to be finalized and old work instructions have not yet been obsoleted. The development of the SAT package for Waste Treatment and Radiation Technicians began in the first quarter. The SAT package for Incident Commander training entered the development phase with the lesson plan being created. The by the end of the first quarter, the overall compliance score for training was 97.0%, ahead of the 95% corporate target. Safety critical training ended with a score of 98.2%.

- **Safety Awareness Activities:** The JHSC kicked off the first quarter with a mandatory winter safety boot check. Safety awareness was highlighted with a Safety-First scavenger hunt in March focusing on locating the answers in MDS, HSI 547 – Temporary Barriers, PHF 4289 – Spill Check List etc. In the spirit of continuous improvement, the Employee Engagement Sub-Committee was re-established. Discussions included activities to include diversity and inclusiveness, the ‘Diversity Tree’ was implemented at both sites. The purpose of the ‘DiversiTree’ is to share celebrations throughout each month from all cultures and backgrounds.
- **JH&SC:** In the first quarter, the JHSC developed its 2024 site objectives to align with 5 strategic goals.
  - Comply with the legislative standards defined for the JHSC.
  - Create a culture of safety.
  - Help create an injury free workplace.
  - Support health and safety initiatives set by management.
  - Visibility and communication.

A focus for the JHSC throughout 2024 will be on the reduction of hand injuries. The JHSC will be promoting the use of gloves when performing tasks along with using the STAR tool – Stop Think Act Review, to prevent injuries.

- **Safety & Industrial Hygiene:** During the first quarter areas were identified for ergonomic risk assessments. These include the new 3<sup>rd</sup> press and the process of performing a tooling change. Ergonomic risk assessments follow a review process which includes the participation of the JHSC, the employee, the area supervisor, and the occupational nurse. Corrective actions driven from the ergonomic report recommendations are captured in CIRS for completion tracking.

#### 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 first quarter of 2023 to the first quarter of 2024 is provided in Table 13.

The total dose to the member of the public from air, liquid emissions and gamma levels for the quarter is calculated to be 0.089 mSv, which is higher than last quarter but lower than the other previous quarters. The third quarter of 2023 result was lower than normal due to the removal of fuel bundles from the Fuel Storage Building. The first quarter result for 2024 is in line with other previous quarters.

**Table 13**

<b>Public Dose by Quarter (mSv/quarter)</b>					
<b>DRL Component</b>	<b>Q1 2023</b>	<b>Q2 2023</b>	<b>Q3 2023</b>	<b>Q4 2023</b>	<b>Q1 2024</b>
Air (stacks)	0.000	0.000	0.000	0.000	0.000
Air (building ventilation)	0.026	0.027	0.021	0.027	0.025
Liquid	0.001	0.002	0.001	0.001	0.001
Gamma (Location 12)	0.067	0.061	0.030	0.059	0.063
Total dose to Critical Receptor (location #12)	0.093	0.089	0.052	0.087	0.089



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 first 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>First Quarter 2023 Gamma Monitoring Results (<math>\mu\text{Sv/hr}</math>)</b>		
<b>Location</b>	<b>Action Level</b>	<b>Quarterly Dose Rate</b>
1	0.2	0.00
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	0.11
10	1.0	0.00
11	1.0	0.28
12	1.0	0.34

The monitoring results for location 12 (closest location to the critical receptor) from the first quarter in 2023 to the first 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 first quarter of 2024 at location 12 is higher than last quarter but lower than the dose rates in previous quarters. This is due to the relocation of bundles in the third and fourth quarters to facilitate cleaning of 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>
Q1 2023	1.35	1.0	0.36
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

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 provide the average and maximum uranium concentration for all stacks in µg/m<sup>3</sup> from the first quarter of 2023 to the first quarter of 2024. The average concentrations measured in stack emissions in the first quarter were lower than or equal to the concentrations in previous quarters.

**Table 16**

Daily Stack Emissions by Quarter (µg/m <sup>3</sup> )							
Source	Action Level	Avg. / Max.	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 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	0.1
		Max.	0.3	0.3	0.3	0.3	0.4
BMS Extraction	2.0	Avg.	0.1	0.1	0.0	0.0	0.0
		Max.	0.2	0.2	0.2	0.1	0.1
Hoffman Vacuum	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.2	0.1	0.0	0.0
Pangborn North Dust Collector	2.0	Avg.	0.0	0.1	0.0	0.0	0.0
		Max.	0.1	0.3	0.2	0.2	0.1
Pangborn South Dust Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.1	0.1	0.1	0.0
DeVilbiss Mist Collector	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.1	0.1	0.1	0.1
Furnace Burn-off	2.0	Avg.	0.0	0.0	0.0	0.0	0.0
		Max.	0.0	0.1	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>0.3</b>	<b>0.3</b>	<b>0.4</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 first quarter. The estimated release of uranium dioxide in exhaust ventilation from both areas during the quarter was 0.26 kg (0.23 kg from the Pelleting Area and 0.03 kg from the PP2 area).

Table 17 provides the average and maximum uranium concentration emitted through the building ventilation system in g/hr from the first quarter of 2023 to the first 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 first quarter of 2023 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.

**Table 17**

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

Liquid Emissions

The action level for liquid effluent released to the sewer is 0.10 mg/L. In the first quarter there was no exceedance of the action level.

Table 18 provides the average and maximum uranium concentration for a single composite sample from the first quarter of 2023 to the first 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 first quarter coupled with the higher volume of water resulted in a higher estimated discharge.

**Table 18**

<b>Sanitary Sewer Emissions by Quarter</b>							
<b>Parameter</b>	<b>Action Level (mg/L)</b>	<b>Measure</b>	<b>Q1 2023</b>	<b>Q2 2023</b>	<b>Q3 2023</b>	<b>Q4 2023</b>	<b>Q1 2024</b>
Uranium (mg/L)	0.1	Average	0.02	0.02	0.01	0.01	0.02
		Maximum	0.03	0.03	0.02	0.02	0.03
pH (pH units)	6.5	Minimum	7.2	7.3	7.3	7.1	7.1
	9.0	Maximum	7.9	7.9	7.9	8.1	7.6
Volume of water	-	(m <sup>3</sup> )	3715	6704	5547	3058	5377
Estimated Discharge	-	(kg)	0.06	0.12	0.06	0.04	0.09

Ambient Air Monitoring

High volume air samples are collected in the four corners of the CFM property. Table 19 shows the quarterly average and maximum results for all four locations from the first quarter of 2023 to the first quarter of 2024.

**Table 19**

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

Table 20 provides the quarterly average and maximum uranium-in-air concentrations for all locations from the first quarter of 2023 to the first quarter of 2024. The average and maximum result is lower than the last 3 quarters. The seasonal changes effect the hi-vol results as rain and snow suppress the amount of dust generated.

**Table 20**

<b>Uranium-in-Air Concentration at Hi-Vol Stations by Quarter (µg/m<sup>3</sup>)</b>					
<b>Quarter</b>	<b>Result</b>	<b>East</b>	<b>North</b>	<b>Northwest</b>	<b>Southwest</b>
Q1 2023	Average	0.0002	0.0002	0.0002	0.0003
	Maximum	0.0003	0.0004	0.0005	0.0005
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

### 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.

## 5.0 Public Information Program

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

### Public Engagement

On February 14, Cameco Fuel Services Division leadership met with the CAO of the Municipality of Port Hope. Cameco provided an overview of local operations and activities.

Cameco launched its Step Up for Mental Health 5K run/walk on February 13. Information was shared via social media and updated on [www.stepupontario.ca](http://www.stepupontario.ca).

Cameco representatives attended the Canadian Nuclear Association’s annual conference in Ottawa from February 27 to March 1. Cameco’s booth provided information on its operations and activities and representatives interacted with conference attendees from across the industry, Indigenous communities and students.

Cameco representatives participated in the Bowl for Kids Sake – Northumberland Big Brothers and Big Sisters on March 6.

On March 8, CFM Port Hope hosted a tour for NAYGN Durham Chapter. There were 15 participants from NAYGN, OPG and Ontario Tech University.

Cameco provided free advertising to local charitable organizations with its sponsorship of MyFM’s Community Partner Program. Through the quarter, Big Brothers Big Sisters, Green Wood Coalition and Cornerstone Family Violence Prevention Centre benefitted from this sponsorship by receiving advertising.

### Public Disclosure

CFM did not make any public disclosures during the first quarter: [Environment & Safety - Conversion: Port Hope - Fuel Services - Businesses - Cameco](#)

### Social Media

#### Facebook – January 1, 2024 to March 31, 2024





**f Top posts**



**Cameco Ontario**  
Mar 18, 21:21

Cameco Ontario's Port Hope team is thrilled to announce the availability of our Community Care Easter Cookies! Have you

**17** reactions



**Cameco Ontario**  
Feb 29, 15:20

We're at the Canadian Nuclear Association conference in Ottawa this week - an annual hub of conversations and networking on all

**17** reactions



**Cameco Ontario**  
Jan 12, 15:56

Cameco Fuel Services Division currently has two openings for Communication Specialist in Blind River and Port Hope. Apply

**12** reactions

**@ Top posts**



**cameco\_ontario**  
Feb 13, 20:46

Step Up for Mental is returning to Cobourg on May 11th, 2024! Early Bird registration is open now! <https://ow.ly/jcSN50QANS9>

**17** likes



**cameco\_ontario**  
Feb 26, 20:58

Join us on May11th in Cobourg for a fun-filled day of walking, running, and raising awareness for mental health. Secure your

**11** likes



**cameco\_ontario**  
Feb 06, 20:15

Energize your career with Cameco! Cameco Fuel Manufacturing has an exciting opportunity for a student to further their

**11** likes

**t Top tweets**



**@CamecoOntario**  
Mar 11, 17:18

Energize your career with Cameco! Cameco Fuel Manufacturing in Cobourg has a one-year contract position open for a Specialist,

**4.76%** engagement\_rate



**@CamecoOntario**  
Jan 30, 17:45

Cameco is pleased to see another project announced that further enhances the nuclear industry in Canada and builds on @opg's successful refurbishment at Darlington.

**4.2%** engagement\_rate



**@CamecoOntario**  
Jan 18, 14:14

Energize your career with Cameco! The Port Hope Conversion Facility has two job postings open: Chemical Operator, UF6 -

**3.9%** engagement\_rate



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Cameco Ontario's 64 posts (combined across Facebook, Instagram and X) covered information such as:

- Cameco's participation at the Canadian Nuclear Association's annual conference
- Career opportunities
- Cameco's Step Up for Mental Health 5K
- My Cameco Stories

Photos and information featured on Instagram were similar to the Cameco Facebook Page.

#### Website

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

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

The Q4 Compliance Report was posted to the website:

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

The Annual Compliance Report was posted to the website:

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

#### Media Analysis

Cameco received media coverage about its support of Northumberland Food for Thought

- **Cameco Recognized for its Ongoing Support of Student Nutrition** — Today's Northumberland
  - [Cameco Recognized for Its Ongoing Support of Student Nutrition Programs in Northumberland - Today's Northumberland - Your Source For What's Happening Locally and Beyond \(todaysnorthumberland.ca\)](#)
- **Cameco Makes \$4,500 donation to Northumberland student nutrition program** – March 25, 2024 – Northumberland News
  - [Northumberland student nutrition program receives donation \(northumberlandnews.com\)](#)
- **Cameco Makes \$4,500 donation to Northumberland student nutrition program** – March 25, 2024 – InQuinte.ca

- [InQuinte.ca | Northumberland Food For Thought receives \\$4,500 donation from Cameco](#)
- **Cameco Makes \$4,500 donation to Northumberland student nutrition program** – March 26, 2024 – GoNorthumberland.ca
  - [Cameco are fueling students with a \\$4,500 grant to Northumberland Food for Thought | 93.3 myFM \(gonorthumberland.ca\)](#)

#### Communication Products

There were no new communications products in Q1.

### 6.0 **Indigenous Engagement**

Regular meetings continued with Curve Lake First Nation. The Environmental Working Group met virtually on March 6 to discuss and plan joint deliverables for 2024. Topics included tours of the Cameco and CFM facilities, a Community visit at Curve Lake First Nation, and the development of a Harvest Food Study. Cameco also provided an update on the new Closed Loop Cooling Water System, the Vision in Motion project and an overview of the Q4 Compliance Report.

Cameco continued engagement with Scugog Island. Communication focused on the draft relationship agreement and ongoing dialogue and negotiations.

On January 4, Q3 Compliance Reports were emailed to Curve Lake, Scugog Island, Alderville, Hiawatha and Rama First Nations and the Mohawks of the Bay of Quinte.

On March 4, Cameco emailed the Q4 Compliance Reports to Curve Lake, Scugog Island, Alderville, Hiawatha and Rama First Nations and the Mohawks of the Bay of Quinte.

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

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