



## Notice of Violation (Corporation)

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**Date of notice: September 06, 2017**

**AMP number: 2017-AMP-06**

<b>Violation committed by:</b>  Cameco Corporation	<b>Amount of penalty:</b>  \$ <b>17,830</b>
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### Violation

Failure to comply with a condition of a licence, in accordance with paragraph 48(c) of the *Nuclear Safety and Control Act*.

Specifically: Cameco failed to verify whether work is being performed correctly and according to approved procedures (as outlined in Cameco Port Hope Conversion Facility's Licence Conditions Handbook section 2 – *SCA - Management System – the licensee shall implement and maintain a management system*).

### Relevant facts

I, Haidy Tadros, Director General of the Directorate of Nuclear Cycle and Facilities Regulation (DNCFR) and designated officer authorized by the Canadian Nuclear Safety Commission (CNSC) to issue notices of violations, believe on reasonable grounds that Cameco Corporation (Cameco) committed the above violation. The facts relevant to the violation and the penalty calculation are as follows:

#### Background

- Cameco Corporation (Cameco) holds a CNSC operating licence authorizing the conversion of uranium trioxide (UO<sub>3</sub>) powder into uranium dioxide (UO<sub>2</sub>) and uranium hexafluoride (UF<sub>6</sub>).
- Cameco owns and operates the Port Hope Conversion Facility (PHCF) under a valid CNSC operating licence (FFOL-3631.00/2027).
- CNSC licence number FFOL-3631.00/2027 issued to Cameco for the Port Hope Conversion Facility requires “the licensee shall implement and maintain a management system” (Licence Condition 2.1).
- PHCF is located in the municipality of Port Hope, ON, situated on the north shore of Lake Ontario, approximately 100 kilometers east of Toronto.



## 2014

- In December 2014, CNSC conducted a reactive compliance inspection at the PHCF which focused on Cameco's Management System and Maintenance programs.
- The December 2014 reactive inspection was triggered by a small release of hydrogen fluoride (HF) within the UF<sub>6</sub> plant that occurred on November 27, 2014.
- During the December 2014 reactive inspection, CNSC staff found evidence that Cameco's *Daily Time Cards* were not completed properly in accordance with Cameco's *Notification and Safety Clearances* procedure (CQP-028).
- CNSC staff raised this observation during the December 2014 reactive inspection with Cameco staff as this was a non-compliance with Cameco's internal procedures. Section 5.4 of CQP-028 requires that a qualified person or area operator must issue a daily notification clearance to the worker before beginning the job.
- As a result of the December 2014 reactive inspection, CNSC staff issued an enforcement action in an inspection report for Cameco to take necessary actions to ensure that work is conducted in a defined and systematic manner according to approved work instructions and procedures.
- To address this enforcement action, in December 2014 Cameco put in place an initiative to better define and communicate basic operating fundamentals. As part of this initiative, the Cameco management team met with every employee on site to ensure that the expectations pertaining to responsibility, communication and verification, are clearly understood.
- In 2014, Cameco implemented a procedure improvement objective and monitored targets to ensure this initiative stays on track.
- In May 2015, CNSC staff reviewed and accepted Cameco's corrective action to address the aforementioned enforcement action identified in the inspection report.
- In addition to the aforementioned enforcement action identified during the December 2014 reactive inspection at the PHCF, CNSC staff identified other non-compliances related to procedural non-adherence in numerous inspection reports (dated: May 23, 2017; April 26, 2017; October 7, 2016; August 11, 2016; May 20, 2016; June 23, 2015; August 11, 2015; October 16, 2015; February 13, 2015; July 18, 2014; and April 3, 2014).

## 2017

- On May 5, 2017, Cameco notified the CNSC Duty Officer to report that Cameco's Emergency Response Team (ERT) was activated in response to a possible HF leak in the UF<sub>6</sub> plant.
- Cameco confirmed that an HF leak took place while a Cameco worker was in the process of calibrating a piece of equipment (gauge).
- The affected worker was directed to Cameco's medical department where they received precautionary medical attention due to exposure to HF. The worker was not injured and there were no environmental impacts as a result of this event.
- On May 5, 2017, Cameco began a preliminary investigation of the HF leak.
- On May 11-12, 2017, CNSC staff conducted a reactive inspection at the PHCF in response to the reported HF leak and received the following preliminary investigation information from Cameco:



- Cameco staff did not comply with section 5.4 of Cameco's *Notification and Safety Clearances* procedure (CQP-028). A qualified person or area operator did not issue a daily notification clearance to the worker before beginning the job as required by section 5.4 of Cameco's *Notification and Safety Clearances* procedure (CQP-028).
- Cameco staff did not comply with section 6.3.1 (2) of Cameco's *Notification and Safety Clearances* procedure (CQP-028). A special safety clearance was not obtained before work was performed on equipment containing HF as required by Section 6.3.1 (2) of Cameco's *Notification and Safety Clearances* procedure (CQP-028).
- Cameco staff did not comply with the maintenance plan (Cameco ID#:33028468). Specifically, an HF notification and safety clearance from the Production Department was not obtained prior to conducting the work and the impulse line valve was not closed (tag off) and isolated as required by the maintenance plan.
- As a result of Cameco's preliminary investigation, Cameco issued a bulletin to their staff stating the following:
  - Cameco's investigation determined that "... it quickly became apparent that no safe work clearance had been performed prior to the start of the work. As a consequence of that, the line was not properly isolated and the employee was not wearing the appropriate PPE, which puts the employee, fellow employees on the ERT and the site at risk due to this lack of compliance."
  - The bulletin continued on to state "... As a management team, we find this incident very disappointing. This behavior must stop immediately. There is ZERO tolerance for not completing the safe work clearance process when required. Completing a safe work clearance is a foundational aspect of working safely at our site, and to bypass this process puts our entire facility at risk. It is absolutely mandatory that safe work clearances are performed prior to the start of maintenance work at all hours of the day, in all areas of our facility as indicated in CQP-028."
  - The bulletin concluded with the following statement "...Our site has many well established safety programs. These programs keep us safe and allow us to go home to our family and friends at the end of the day the same way as we came to work. By following these programs, we can all fulfill that shared goal of working safely."
- Prior to CNSC staff's reactive inspection on May 11-12, 2017, Cameco terminated two workers and suspended a third as a result of the May 5, 2017 HF leak.
- During the May 11-12, 2017, reactive inspection, Cameco stated that they had not performed verifications related to their *Notification and Safety Clearances* procedure (CQP-028).
- Section 11.4 – *Verification of Work* of Cameco's *Management Systems Program Manual* outlines their requirements associated with verification of work.
- Section 14.1 – *Self-Assessment* of Cameco's *Management Systems Program Manual* includes requirements for facility management to regularly assess the management processes for which they are responsible.
- The above mentioned facts demonstrate that Cameco's corrective actions since 2014 were not effective in ensuring that Cameco staff are adhering to the requirements described in their *Notification and Safety Clearances* procedure (CQP-028).



Based on my review of this matter, I am of the opinion that an administrative monetary penalty will deter recurrence of the above violation and promote future compliance with CNSC regulatory requirements.

The administrative monetary penalty is based on the failure of Cameco to verify whether work is being performed correctly and according to approved procedures and not due to the May 5, 2017, HF leak.

In consideration of the seven factors in section 5 of the *Administrative Monetary Penalties Regulations (Canadian Nuclear Safety Commission)*, the amount of the penalty was determined based on the following relevant facts:

1. **Compliance history:** Assessed score = 4

There is evidence that failure to verify that the CQP-028 procedure was adhered to has occurred frequently since 2014 despite the licensee's corrective actions.

Cameco has acknowledged a lack of procedural adherence with Cameco's *Notification and Safety Clearances* procedure (CQP-028).

CNSC staff expect licensees to: 1) conduct regular verification to confirm procedural adherence and 2) to perform work systematically and in accordance with approved procedures.

2. **Intention or negligence:** Assessed score = 2

Cameco was negligent for not independently verifying that work was being carried out by staff according to CQP-028.

CQP-028 outlines Cameco's expectations for staff; requiring that a notification and safety clearance is needed before any maintenance work is performed in order for the protection of its workers and company property.

Licensees are responsible for conducting routine verifications of their management processes to ensure adherence to procedures. Licensees are expected to carry out work according to requirements that are specified in up-to-date approved procedures. Cameco stated that they had not performed verifications related to their *Notification and Safety Clearances* procedure (CQP-028).

CNSC staff expect that all licensees will ensure the safety of their staff and will take steps to verify that all procedures that impact worker safety are being adherence to.

3. **Actual or potential harm:** Assessed score = 3

HF is extremely corrosive and toxic; exposure to HF can significantly harm persons and the environment. Adherence to approved procedures is critical to avoid exposure / release of HF.

Non-adherence to approved procedures while working with hazardous materials has the potential to cause injurious harm to workers and the environment.

4. **Competitive or economic benefit:** Assessed score = 0

Cameco did not appear to have derived any competitive or economic benefit as a result of the violation.



**5. Efforts to mitigate or reverse effects:** Assessed score = 0

Since 2014, Cameco has taken corrective actions to address CNSC staff concerns related to procedural non-adherence. However, the effectiveness of Cameco's corrective actions did not prevent recurrences of the violation.

While Cameco has, since the small release of HF event in 2014, taken corrective actions to better define and communicate the importance of adhering to procedures, they have not effectively mitigated the effects of procedural non-adherence of their workers.

**6. Assistance to Commission:** Assessed score = -2

Cameco was involved and cooperated in investigative measures. Cameco provided all requested information to CNSC staff.

**7. Attention of Commission:** Assessed score = -2

The May 5, 2017, HF leak was reported to the CNSC Duty Officer in accordance with regulatory requirements.



## Penalty calculation:

(See *Administrative Monetary Penalties Regulations (Canadian Nuclear Safety Commission) SOR/2013-139*)

**(a) Category of violation**

Category A                       Category B                       Category C

**(b) Penalty range**

Category	Minimum	Maximum	Maximum – minimum
A	\$1,000	\$12,000	\$11,000
B	\$1,000	\$40,000	\$39,000
<b>C</b>	<b>\$1,000</b>	<b>\$100,000</b>	<b>\$99,000</b>

**(c) Determining factors**

Factors	Scale of regulatory significance	Assessed score
1. Compliance history	0 <input type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/> +4 <input checked="" type="checkbox"/> +5 <input type="checkbox"/>	4
2. Intention or negligence	0 <input type="checkbox"/> +1 <input type="checkbox"/> +2 <input checked="" type="checkbox"/> +3 <input type="checkbox"/> +4 <input type="checkbox"/> +5 <input type="checkbox"/>	2
3. Actual or potential harm	0 <input type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input checked="" type="checkbox"/> +4 <input type="checkbox"/> +5 <input type="checkbox"/>	3
4. Competitive or economic benefit	0 <input checked="" type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/> +4 <input type="checkbox"/> +5 <input type="checkbox"/>	0
5. Efforts to mitigate or reverse effects	-2 <input type="checkbox"/> -1 <input type="checkbox"/> 0 <input checked="" type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/>	0
6. Assistance to Commission	-2 <input checked="" type="checkbox"/> -1 <input type="checkbox"/> 0 <input type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/>	-2
7. Attention of Commission	-2 <input checked="" type="checkbox"/> -1 <input type="checkbox"/> 0 <input type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/>	-2
<b>Total</b>		<b>5</b>
÷ 29 <sup>(1)</sup> [rounded to 2 decimal points]=		<b>0.17</b>
<b>X 99000</b>		
[total] =		<b>16,830</b>
+ \$1,000 [minimum for the category] =		<b>17,830</b>

<sup>(1)</sup>29 is the maximum value of regulatory significance



## To request a review

As a person subject to an administrative monetary penalty, you have the right to request a review of the amount of the penalty or the facts of the violation, or both. Your request must be made in writing indicating the reasons why you are requesting a review and providing supporting information.

If you choose to request a review, you must do so in writing by October 11, 2017 to:

Canadian Nuclear Safety Commission  
c/o Marc Leblanc  
Commission Secretary  
P.O. Box 1046, Station B  
Ottawa, ON K1P 5S9

Fax: 613-995-5086  
Telephone: 613-995-6506  
Email: [cnscc.interventions.ccsn@canada.ca](mailto:cnscc.interventions.ccsn@canada.ca)

## Payment

You may pay this administrative monetary penalty by sending a cheque to:

Receiver General for Canada  
c/o Canadian Nuclear Safety Commission  
Finance Division  
P.O. Box 1046, Station B  
Ottawa, ON K1P 5S9

For other payment methods and further instructions, please refer to the attached *Notice of Payment Due*.

**Should you neither pay the penalty nor exercise your right to a review, you will be considered as having committed the violation and will be liable to the penalty set out herein.**



## Issued by

Haidy Tadros  
Directorate of Nuclear Cycle and Facilities Regulation  
Designated Officer

6 Sept 2017

Date

Telephone: (613) 943-8948

Email: [Haidy.Tadros@canada.ca](mailto:Haidy.Tadros@canada.ca)