



## Notice of Violation (Corporation)

---

**Date of notice: June 27, 2018**

**AMP number: 2018-AMP-03**

<b>Violation committed by:</b>  Quantum Petrophysics Inc.	<b>Amount of penalty:</b>  \$ 11, 920
---	---

### Violation

Violation of paragraph 26(1)(a) of the *Packaging and Transport of Nuclear Substances Regulations, 2015*. Presentation for transport or transport of radioactive material in package not meeting requirements.

### Relevant facts

I, Colin Moses, Director General of the Directorate of Nuclear Substances Regulation and designated officer authorized by the Canadian Nuclear Safety Commission (CNSC) to issue notices of violations, believe on reasonable grounds that Quantum Petrophysics Inc. committed the above violation. The facts relevant to the violation and the penalty calculation are as follows:

1. Quantum Petrophysics Inc. holds a CNSC licence allowing the use of nuclear substances for well logging, licence number 14719-1-19.0.
2. On April 19, 2018, while a conveyance (pickup truck and trailer) was driving on a highway in Alberta, a package containing a radioactive source fell through the floor of the trailer and onto the highway. The lid of the package separated from the package and the radioactive sealed source (1.85 GBq Co-60) fell outside the shielded package. The sealed source was located away from the package in the middle of the highway.
3. Upon examination of the package, it was observed that the licensee had not inserted four screws designed to hold the lid to the package. Furthermore, the licensee stated in its written report that it was not aware that the screws were required for transport.
4. Paragraph 26 (1)(a) of the *Packaging and Transport of Nuclear Substances Regulations, 2015* states that:

“A consignor may present for transport and a carrier may transport

(a) radioactive material if the material is contained in ... (iii) a Type A package ...”
5. The quantity of radioactive material being transported, 1.85 GBq Co-60, required a Type A package.



6. The package, as it was used, did not meet the requirements for safe transport. The Type A package design documents submitted by Quantum Petrophysics Inc. indicate that the four screws are part of the package design. Since the four screws were not used, the package did not meet the Type A package standard.
7. The radioactive material transported was contained in a sealed source (meeting the IAEA's special form standard). Even though the sealed source escaped from the package, the radioactive material inside the sealed source was not released. A leak test performed on the source by a qualified independent consultant on April 23, 2018 came back negative, confirming that there was no release from the sealed source.
8. The package was discovered by a road maintenance crew approximately 30 minutes after it was lost. The incident occurred on a public highway in Alberta; the highway was closed to traffic three hours following the discovery of the package and lid on the side of the road. During this time, the radioactive source lay in the middle of the highway unshielded.
9. The road maintenance crew notified a Government of Alberta Transportation of Dangerous Goods compliance officer upon discovery of the open package, who in turn called the CNSC duty officer. A CNSC inspector was sent to the location of the event
10. After realizing the package was missing from the trailer, the licensee's radiation safety officer (RSO) retraced his steps to attempt to locate the package. The RSO did not immediately notify the CNSC of the lost source as required by the *Packaging and Transport of Nuclear Substances Regulations, 2015*. The highway was reopened once the radioactive source was recovered and secured within the package by the RSO.

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. 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 = 0

There is no negative compliance history for this type of event for Quantum Petrophysics Inc.

2. Intention or negligence: Assessed score = 3

Quantum Petrophysics Inc. failed to properly close the package used to transport the radioactive material. The licensee did not insert the four screws that are used to properly secure the lid to the package. This resulted in the sealed source escaping from the package when the package fell through the trailer floor.

3. Actual or potential harm: Assessed score = 4

As a result of the failure to properly close the package, the sealed source (1.85 GBq Co-60) was allowed to escape the package, and the sealed source was unshielded and uncontrolled in the public domain. The potential harm to the public was high.



4. Competitive or economic benefit: Assessed score = 0

There does not appear to be any competitive or economic benefit for Quantum Petrophysics Inc. as a result of this event.

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

Quantum Petrophysics Inc. made no additional effort to mitigate or reverse the effects, but did recover the source as required.

6. Assistance to Commission: Assessed score = 0

Quantum Petrophysics Inc. provided information to the CNSC inspector who was onsite at the event. Furthermore, the RSO provided a response to the inspection report issued by the CNSC inspector on site as well as the 21-day report as required.

7. Attention of Commission: Assessed score = 1

Quantum Petrophysics Inc. failed to inform the CNSC of the lost package, as required by the *Packaging and Transport of Nuclear Substances Regulations, 2015*, immediately after realizing that the package was lost. The licensee formally notified the CNSC of the event after it returned to the scene of the event. The CNSC was already aware of the incident by that time.



## 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>B</b>	<b>\$1,000</b>	<b>\$40,000</b>	<b>\$39,000</b>
C	\$1,000	\$100,000	\$99,000

**(c) Determining factors**

Factors	Scale of regulatory significance	Assessed score
1. Compliance history	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
2. Intention or negligence	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
3. Actual or potential harm	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
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 type="checkbox"/> -1 <input type="checkbox"/> 0 <input checked="" type="checkbox"/> +1 <input type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/>	0
7. Attention of Commission	-2 <input type="checkbox"/> -1 <input type="checkbox"/> 0 <input type="checkbox"/> +1 <input checked="" type="checkbox"/> +2 <input type="checkbox"/> +3 <input type="checkbox"/>	1
<b>Total</b>		<b>8</b>
÷ 29 <sup>(1)</sup> =		<b>0.28</b>
× 39,000		
=		<b>\$10 920</b>
+ 1000 =		<b>\$11 920</b>

<sup>(1)</sup>29 being 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 July 30, 2018 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

---

Colin Moses, Director General, DNSR  
Designated Officer

---

June 27, 2018

Telephone: 613-993-7699

Email: [colin.moses@canada.ca](mailto:colin.moses@canada.ca)