



Notice of Violation (Corporation)

Date of notice: August 30, 2024

AMP number: 2024-AMP-05

Violation committed by:	Penalty amount:
Construction DJL Inc./DJL Construction Inc.	\$9,190

Violation

Failure to use a licensed dosimetry service to measure and monitor doses of radiation received by the nuclear energy worker in violation of Section 8(1) of the Radiation Protection Regulations.

Relevant facts

I, Karen Owen-Whitred, Director General of the Directorate of Nuclear Substance Regulation and Designated Officer authorized by the Canadian Nuclear Safety Commission (CNSC) to issue notices of violations, believe on reasonable grounds that Construction DJL Inc./DJL Construction Inc. committed the above violation. The facts relevant to the violation and the penalty calculation are as follows:

- Construction DJL Inc./DJL Construction Inc., with an address in Brossard, Quebec, holds a CNSC licence (licence number: 16223-1-26.1). This licence authorizes the licensee to possess, transfer, use and store radiation devices (portable gauges).
- On November 16, 2022, CNSC staff conducted a planned, announced and routine Type II inspection at the Shawinigan, QC location. Six (6) Notices of Non-Compliance (NNC) were issued on the Preliminary Inspection Report (PIR) following this inspection. One of the NNCs was under section 8(1) of the Radiation Protection Regulations (RPR). Citation of the notice of non-compliance against RPR 8(1) in inspection report D-16223-LP-221116-1:

“Failure to use a licensed dosimetry service for NEWs exceeding 5 mSv per year. According to the RSO, the dosimetry service was discontinued in 2019 in favour of test counting. However, many of the company’s workers (at other locations) took more than 5000 tests a year, some exceeding 10,000 tests.”

According to the appendix to the licence, Radiation Protection Management Manual (RPMM) Revision 3, section 12.4, if the worker is not wearing a dosimeter, the licensee estimates the dose to workers by counting the number of tests a worker performs with a radiation device. “The dose is obtained by multiplying the number of tests by 1.2 microsieverts (µSv).” For example, a licensed worker who performed 5,000 tests in one year is equivalent to around 6,000 µSv (6 mSv); 5,000*1.2 µSv = 6,000 µSv.



- On December 7, 2022, the corporate Radiation Safety Officer (RSO) provided corrective actions for inspection report D-16223-LP-221116-1, including the action for the NNC pursuant to RPR section 8(1). Citation of the corrective action listed in report D-16223-LP-221116-1 under RPR 8(1):

“The dosimetry policy set out in the latest revision of the Radiation Protection Management Manual is to require the use of dosimeters when it is anticipated that the worker may exceed 250 tests per 3-month dosimetry period, but to leave it optional for occasional workers. If this policy is applied, these requirements meet non-compliance item 04. In practice, the equipment is used for a maximum of 3 periods of 3 months per year. Thus, considering 250 tests over 3 periods of 3 months, the total would be 750 tests, corresponding to 0.9 mSv at a rate of 1.2 μ Sv/activation. This dose is below the threshold for which a worker must be declared a nuclear energy worker. Consequently, any worker likely to exceed this threshold must use a dosimeter. At the time of writing these corrective actions, the majority of field use of portable gauges has been completed, and will gradually resume from April 2023. The policy described will be implemented so that it is fully functional for the start of use of the devices in spring 2023.”
- On December 20, 2022, the inspection report was e-mailed to the licensee. On the same day, the licensee contacted CNSC staff by e-mail for interpretation on the status of the corrective actions and whether they were accepted. CNSC staff responded to the licensee and indicated that the corrective action for the NNC pursuant to RPR 8(1) was considered acceptable, but that the report would not be closed until CNSC was able to verify that the corrective actions had been implemented. The corrective action was to make dosimeter use compulsory when it was anticipated that the worker could exceed 250 tests per 3-month dosimetry period, but to leave it optional for occasional workers. This gave the licensee the opportunity to implement the corrective action. The e-mail also indicated that a follow-up inspection would be carried out within the next year.
- On March 20, 2024, CNSC staff conducted a planned and announced follow-up Type II inspection at the same location in Shawinigan, QC. During the inspection, the inspector noted that an authorized worker at this location had not recorded the total number of tests he had carried out during the year 2023. According to the RSO, this situation was identified in December 2023 when the dose to authorized workers was recorded. The RSO also indicated that he only completed a count at the end of the year, contrary to the provisions of section 12.3 of the Radiation Protection Management Manual Revision 3. At the time of the inspection, no action had been taken by the RSO to assess the worker’s dose and take appropriate corrective actions. This finding confirms that the licensee had not implemented corrective actions following the inspection in November 2022. The RSO, unable to state the dose received by the worker, indicated that it would be possible to determine the dose retrospectively by consulting the reports produced by the worker, taking into account the specific details of each worksite where the worker had used the radiation devices in 2023. The inspector agreed that this was an acceptable approach to obtaining a dose estimate.
- On April 19, 2024, the RSO submitted, by e-mail to CNSC staff, the corrective actions and the estimated number of tests performed by the authorized worker in 2023, i.e. 9,829 tests (approximately 11.79 mSv). The calculations and data used to obtain the estimate have been provided. According to this data, the worker used the radiation device on 98 days during the year 2023. On average, the worker made 100 extractions of the source rod per day of use. On October 5, 2023, the worker performed 311 source rod extractions; this number represented the maximum number of tests in a single day for this worker. According to the licensee’s internal procedure, section 12.3 of the Radiation Protection Management Manual (Revision 3) states:



“All workers whose duties consist of using a portable gauge on a regular basis must wear a dosimeter...regular use is defined as the anticipated possibility of exceeding 250 tests during a 3-month dosimetry period.”

According to the data obtained, the worker exceeded 250 tests in a single day on 14 occasions. Furthermore, according to the RSO, of the 29 workers who used a portable gauge in 2023, 18 exceeded the threshold of 250 tests per quarter.

- On April 23, 2024, following information submitted by the licensee related to the above item, CNSC staff contacted the licensee with the following request (e-Doc-#7270373):

“Considering the result obtained from the compilation of the authorized worker’s dose, please provide the compilation of the dose of the 18 authorized workers who performed more than 250 tests per quarter: Do not indicate the name of the workers, clearly indicate: the number of activations of each of these workers per quarter for 2023, the total number of activations of each of these workers for 2023, the estimated dose of each of these workers in (millisieverts) mSv and the location (office) of each worker (if more than one, please indicate). Please provide this information before Friday, April 26, 2024.”

- On April 23, 2024, the RSO contacted CNSC staff by e-mail with the results of the above-mentioned request. Seven (7) of the 18 authorized workers recorded more than 5 mSv in the year 2023. Also, the RSO clearly stated the following information (e-Doc-#7270373):

“All of these workers will shortly be notified of the dose they received. I am currently drafting the letters that will be sent individually to each worker by e-mail (or by mail if they cannot be reached by e-mail). Yesterday I asked the managers responsible for each location to provide me with contact details for workers who do not have a company e-mail address. Following their response, I plan to send the results early next week.”

Since these are nuclear energy workers (NEWs), according to RPR section 7(1)(d), the licensee must notify each NEW in writing of the radiation levels received annually by the worker. This section was cited during the 2022 inspection.

- On April 25, 2024, after analyzing the results of the submitted application, CNSC staff issued an addendum including one (1) additional NNC (e-Doc-#7270564).”

NNC. 01 RPR 8(1): Failure to use a licensed dosimetry service for seven (7) NEWs who reached and exceeded 5 mSv in 2023. This is a recurring notice of non-compliance.

It was indicated in the e-mail that no further follow-up is required on the part of the licensee. This section was cited during the 2022 inspection.

- On April 26, 2024, CNSC staff e-mailed inspection report D-16223-PP-240320-1 to the licensee.
- On May 30, 2024, CNSC staff contacted the licensee with the following request (e-Doc-#7293270):

“...follow up on the measures put in place to assess the dose received by workers. Please provide the following information by end of day May 31, 2024: confirmation and proof that the workers listed in the table below have been notified of their 2023 dose. (Do not indicate or conceal workers’ names) and confirmation and proof that workers handling radiation devices are wearing dosimeters...”

On the same day, the RSO e-mailed CNSC staff with responses to the above request. See reference eDoc-#7293270.



- CNSC staff would like to point out that, according to the information submitted by the RSO on April 23, the workers were to be notified shortly of the dose they received in 2023. According to its most recent correspondence, the doses were communicated to workers on May 30, after a follow-up request.

Based on my review of this matter, it is my opinion that an administrative monetary penalty will prevent the recurrence of the above violation and promote 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 = +3

A rating of +3 has been assigned, as there is a history of non-compliance with the requirement to use a licensed dosimetry service. The corrective actions implemented following the 2022 inspection have not been complied with. Section 8(1) of the Radiation Protection Regulations was cited during inspections on November 16, 2022 and March 20, 2024. In both cases, several workers received an effective dose in excess of 5 mSv.

According to information provided by the licensee, 62% of workers (18 of 29) exceeded the number of tests that should have triggered the use of a dosimeter, in accordance with the licensee's Radiation Protection Manual. One worker exceeded this number 14 times in a single day.

2. Intention or negligence: Assessed score = +3

A rating of +3 has been assigned because the licensee demonstrated a high degree of negligence with regard to worker safety. Based on the results of the inspection carried out on March 20, 2024, and due to the fact that the NNC under RPR 8(1) was recurring, there is a demonstrable high degree of negligence. CNSC staff clearly identified these non-compliances during the 2022 inspection, and corrective actions had been devised and sent by the licensee. The licensee has not followed its internal procedures and has not implemented the corrective actions submitted following the 2022 inspection. In addition, the licensee failed to fulfil its commitment to communicate the annual dose to the NEWs, as stated in regulatory requirement RPR 7(1)(d), on two occasions: First, during the inspection of March 20, 2024, the RSO communicated to CNSC staff that it was in the process of sending this communication. Then, in a follow-up communication, dated April 23, 2024, the RSO clearly stated that:

“All of these workers will shortly be notified of the dose they received. ... Following their response, I plan to send the results early next week.”

Finally, in a follow-up communication dated May 30, 2024, the licensee's response indicates that the annual dose received by the NEWs was only communicated on May 30, 2024, and only after receiving a reminder from CNSC staff.

3. Actual or potential harm: Assessed score = +1

A rating of +1 has been assigned, as there was the potential for minor damage to the licensed workers involved. According to the information provided by the licensee, 18 workers were required to wear dosimeters to accurately measure the doses they received. There is likely to be a risk to licensed



workers if the licensee does not control the extent of exposure in terms of effective dose and equivalent dose.

4. Competitive or economic benefit: Assessed score = +1

A rating of +1 has been assigned because the non-compliance resulted in a minor perceived or actual economic benefit for the licensee. Based on the results of the inspection carried out on March 20, 2024, there was a minor economic benefit, as the use of a licensed dosimetry service in Canada entails costs for a licensee.

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

A rating of 0 has been assigned because immediate mitigation measures were taken, but these were not sufficient to mitigate the effects of the non-compliance. Although the licensee revised its procedures after the 2022 inspection revealed the non-compliance, it has not successfully implemented these procedures, as evidenced by the fact that 18 of 29 workers did not start wearing a dosimeter after performing more than 250 tests. Based on the results of the inspection carried out on March 20, 2024, and on correspondence with the licensee between March 20 and May 31, 2024, the RSO has now taken the following actions: procuring and supplying passive dosimeters from the licensed dosimetry service (Health Canada) to NEWs (licensed workers). However, the licensee only took these measures after workers had been exposed in 2023, and not after the November 2022 inspection, as it had initially undertaken to do.

6. Assistance to Commission: Assessed score = -2

A rating of -2 has been assigned because the licensee was involved and participated in the inspection, and immediately provided all the information requested. According to the records provided, the licensee responded immediately (same day or next day) when the CNSC requested information.

7. Attention of Commission: Assessed score = 0

A rating of 0 has been assigned, as the reporting of this violation was not required by regulation.

Attachments

- Penalty calculation sheet (e-Doc-#[7292335](#): AMP Calculation for DJL Construction Inc.)
- e-Doc-#[7292197](#): Recommendation to impose an Administrative Monetary Penalty (AMP) Construction DJL Inc.
- e-Doc-#[6933215](#): RSO's response to CNSC routine Type II inspection
- e-Doc-#[6943924](#): Conclusions of Type II inspection D-16223-LP-221116-1
- e-Doc-#[6985994](#): Additional responses to Type II inspection D-16223-LP-221116-1
- e-Doc-#[7248085](#): Confirmation of receipt of Type II inspection RIP D-16223-PP-240320-1



- e-Doc-#[7248392](#): Planning of radiation protection audits and practical training
- e-Doc-#[7248395](#): Corrective action pt1 of Type II inspection D-16223-PP-240320-1
- e-Doc-#[7262440](#): Confirmation of receipt of addendum #1 to RIP D-16223-PP-240320-1
- e-Doc-#[7270370](#): Corrective action pt2 of Type II inspection D-16223-PP-240320-1
- e-Doc-#[7270371](#): Corrective action pt3 of Type II inspection D-16223-PP-240320-1
- e-Doc-#[7270373](#): Request for information on authorized worker dose for 2023
- e-Doc-#[7270564](#): Confirmation of receipt of addendum #2 to RIP D-16223-PP-240320-1
- e-Doc-#[7281580](#): Conclusions of Type II inspection D-16223-PP-240320-1
- e-Doc-#[7293270](#): Request for information - communication of dose received by authorized workers for 2023



Penalty calculation

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

(a) <u>Category of violation</u>							
Category A <input type="checkbox"/>	Category B <input checked="" type="checkbox"/>	Category C <input type="checkbox"/>					
(b) <u>Penalty range</u>							
Category	Minimum	Maximum	Maximum - Minimum				
A	\$1,000	\$12,000	\$11,000				
B	\$1,000	\$40,000	\$39,000				
C	\$1,000	\$100,000	\$99,000				
(c) <u>Determining factors</u>							
Factors	Scale of regulatory significance			Assessed score			
1. Compliance history	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
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 checked="" type="checkbox"/>	+2 <input type="checkbox"/>	+3 <input type="checkbox"/>	+4 <input type="checkbox"/>	+5 <input type="checkbox"/>	+1
4. Competitive or economic benefit	0 <input type="checkbox"/>	+1 <input checked="" type="checkbox"/>	+2 <input type="checkbox"/>	+3 <input type="checkbox"/>	+4 <input type="checkbox"/>	+5 <input type="checkbox"/>	+1
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 type="checkbox"/>	-1 <input type="checkbox"/>	0 <input checked="" type="checkbox"/>	+1 <input type="checkbox"/>	+2 <input type="checkbox"/>	+3 <input type="checkbox"/>	0
Total							6
÷ 29 ⁽¹⁾ [rounded to 2 decimal points]=							0.21
x 39,000							
[total] =							8,190
+ 1000 [minimum amount for the category] =							\$9,190

⁽¹⁾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. You must submit your request in writing, indicating why you are requesting a review and including all supporting information.

If you request a review, you must do so in writing before **September 23, 2024** by contacting:

Canadian Nuclear Safety Commission
c/o Candace Salmon
Commission Registrar
P.O. box 1046, Station B
Ottawa, ON K1P 5S9

Fax: 613-995-5086
Telephone: 613-995-6506
E-mail: registry-greffe@cnsccsn.gc.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 enclosed *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

Karen Owen-Whitred
Designated Officer

Date

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E-mail: karen.owen-whitred@cnsccsn.gc.ca