Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Record of Proceedings, Including Reasons for Decision and Order

In the Matter of

Party Subject to Order	Western Inspection Ltd.
Subject	Opportunity to be Heard on the Designated Officer Order Issued to Western Inspection Ltd. on April 5, 2013
Date of Opportunity to be Heard	May 3, 2013

Canada

RECORD OF PROCEEDINGS

Party Subject to Order:	Western Inspection Ltd.
Address/Location:	Western Inspection Ltd. 3231 – 58 Avenue Southeast, Calgary, AB, T2C 0B4
Purpose:	Opportunity to be heard on the Designated Officer Order issued to Western Inspection Ltd. On April 5, 2013
Order Issued:	April 5, 2013
Date of Opportunity to be Heard:	May 3, 2013
Location:	Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario
Members present:	M. Binder, Chair
Secretary:	M.A. Leblanc
Recording Secretary:	S. Dimitrijevic
Senior Counsel:	M. James

Licensee/Person Named in or Subject to Order Represented By	**Document Number**
• A. Bélanger • J. Cameron Prowse • K. Muise	CMD 13-H102.1
CNSC staff	**Document Number**
• R. Jammal • A. Régimbald • H. Rabski • P. Larkin • S. Faille	

Order: Revoked

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1. INTRODUCTION

1. On April 5, 2013, a Canadian Nuclear Safety Commission[1] Designated Officer issued an Order to Western Inspection Ltd. (Western). The Order required Western to immediately comply with specific actions and measures identified in the Order.

2. Pursuant to subsection 37(6) of the *Nuclear Safety and Control Act*[2] (NSCA), the Designated Officer referred the Order to the Commission for review.

3. Pursuant to paragraph 40(1)(*d*) of the NSCA, the Commission provided an opportunity to be heard to Western, as the party subject to and named in the Order.

4. This *Record of Proceedings* reflects the Commission's consideration of Western's submission on the Order, the review of the Order and the reasons for the decision.

Issue

5. In its review of the Order, the Commission was required to confirm, amend, revoke or replace the Order, pursuant to subsection 37(6) of the NSCA.

Proceedings

6. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to review the application. The Commission, in making its decision, considered information presented for a proceeding held in-camera on May 3, 2013 in Ottawa, Ontario. The proceeding was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*[3]. The Commission considered the Designated Officer Order, including information referred to in the Order, and received written submissions from Western (CMD 13-H102.1). The proceeding encompassed oral presentation by Western and oral participation of CNSC staff.

2. DECISION

7. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*,

> the Commission, pursuant to subsection 37(6) of the NSCA, revokes the Designated Officer Order issued to Western Inspection Ltd. on April 5, 2013, as it is in substantial satisfaction of the Order.

[1] The *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.
[2] Statutes of Canada (S.C.) 1997, chapter (c.) 9.
[3] Statutory Orders and Regulations (SOR)/2000-211.

8. With this decision the Commission directs Western Inspection Ltd. to submit by June 1, 2013 to the CNSC Designated Officer the following:

- proof that their assistant radiation safety officer (RSO) has completed all requirements to become a qualified emergency responder;
- a completed root cause analysis report; and
- all data requested by CNSC staff to reconstruct radiation doses received by the workers during the incident.

9. The Commission also requires that the oversight of all Western Inspection Ltd. operations be conducted conjointly by the RSO and the assistant RSO.

3. ISSUES AND COMMISSION FINDINGS

10. In reviewing the Order under subsection 37(6) of the NSCA, the Commission considered the reasonableness of the Order. In this regard, the Commission considered the actions and measures identified in the Order and the information on which the Order was based, as identified in the Order.

3.1 Background

11. Western holds CNSC licence No. 02945-1-16.0, which authorizes Western to conduct industrial gamma radiography operations using certain exposure devices and nuclear substances. The same licence requires Western to carry out activities, including those in relation to emergency source retrieval, in accordance with certain procedures.

12. On March 13, 2013 at approximately 3:45 a.m. at MaXfield Inc.'s plant located in Crossfield, Alberta, three Western employees - two certified exposure device operators and one trainee - have been involved in an incident when a metal stand fell and dented the guide tube of an exposure device. As a result, a source assembly of the device jammed, preventing the radioactive source to retract into the shielded position. The involved workers moved the entire equipment, including the unshielded source, and attempted certain remedial actions, during which two workers received significant doses of radiation as indicated by their direct reading dosimeters (DRD).

13. The CNSC was made aware of the incident only on March 25, 2013. In their assessment of the event, CNSC staff noted that Western had failed to comply with condition 12 of CNSC licence number No. 02945-1-16.0 by not carrying out the licensed activities in accordance with the documents or parts thereof referred to in the Appendix: *Licence Document(s)* of the licence. Further, Western failed to comply with

numerous sections of the *General Nuclear Safety and Control Regulations*[4], *Radiation Protection Regulations*[5] and the *Nuclear Substances and Radiation Devices Regulations*[6], which led CNSC staff to conclude that the failure by Western to comply with CNSC regulations and licence conditions posed an unreasonable risk to the health and safety of persons.

14. On April 5, 2013, after reviewing the incident, the CNSC Designated Officer issued the Order to Western indicating all matters of non-compliance to the licence conditions and CNSC regulations.

15. In a written submission to the CNSC dated April 25, 2013, Western provided their description of the event with detailed responses to all points of the Order. In this submission, Western indicated that the company was directly affected by the Order because it had to cease all operations related to industrial gamma radiography.

16. Western stated that, immediately after the event, workers secured the source of radiation using a shielding tunnel, and, as soon as the area was safe and secured, the workers retreated to a safe distance and contacted Western's RSO to discuss the issue and receive direction. Following the obtained directions, the workers replaced the shielding tunnel with a heavy-walled pipe, loaded the assembly into their van and relocated the source approximately 360 feet away in a radiography bunker, where the assembly was unloaded, and the heavy-walled tube replaced again with the shielding tunnel. The workers erected protective barriers around the bunker, switched on flashing warning beacons and continued to monitor the barrier until the RSO arrived at the site. With help from the workers, the RSO replaced the deformed segment of the guide tube, and the radiation source was retrieved into the shielded position.

17. Upon erecting the barriers around the bunker, the workers took note of the readings of their audible radiation dosimeters (ARDs). They were also equipped with a dosimeter issued by a licensed dosimetry service provider ("Health Canada Dosimeter"). They noted that the ARD of one of them was making unusual sounds and was showing an increased daily dose of radiation. This unit was sent to the manufacturer for investigation on March 25, 2013, and on April 2, 2013 the manufacturer reported that the unit was functioning properly and had been recalibrated. On March 14, 2013 Western sent the "Health Canada Dosimeters" that the workers were using on March 13, 2013 to Health Canada for review. The report on the review was received on March 21, 2013. A copy of that report was included in Western's submission to the CNSC.

18. Western further noted that they had submitted two reports to the CNSC: a preliminary report dated March 25, 2013, containing information on the incident involving workers that had been exposed to personal radiation doses, and a more detailed account of the incident and radiation exposure, provided on April 2, 2013.

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[4] SOR / 2000-202
[5] SOR / 2000-203
[6] SOR / 2000-207

3.2 Actions and Measures of the Order

19. In accordance with subsection 35(1) of the NSCA and having taken into account the circumstances demonstrating inadequate provision by Western for the protection of the health and safety of persons in relation to the conduct of industrial gamma radiography operations, Western was ordered the following:

- to cease all industrial gamma radiography operations using exposure device;
- to return all exposure devices to secure storage;
- to provide satisfactory training to its Certified Exposure Device Operators in the safe operation of the exposure devices in use at Western, including training regarding relevant regulatory requirements, and training in emergency response procedures;
- to provide a written plan for training its Certified Exposure Device Operators; and
- to provide written measures taken or proposed to be taken to prevent the reoccurrence of a similar event.

3.3 Opportunity to be Heard Submission

20. In its application, Western requested that the Order dated April 5, 2013 be confirmed, and declared completed and closed. As an alternative, Western suggested that the Order dated April 5, 2013 be amended to restrict only the activities of the employees involved in the March 13, 2013 incident until the CNSC is satisfied that those individuals are competent to appropriately respond to an emergency event involving an exposure device and can safely conduct industrial gamma radiography operations.

21. In support of this submission, Western representatives informed the Commission that they do not dispute mistakes made during the event, and noted that they have learned from those mistakes and had taken steps to prevent reoccurrence. In particular, the RSO admitted that he should not have delayed 12 days before making an initial report to the CNSC, and that the instructions he gave to the operators in order to retrieve the source were incorrect.

22. Western representatives further informed the Commission that, immediately upon receiving the April 5, 2013 Order, Western complied with the cease work direction and acted to satisfy the remaining terms of the Order. These actions included the following:

- Western hired an instructor accredited by the Canadian General Standards Board (CGSB), to create and carry out a Radiation Safety course. All Western nuclear energy workers were required to attend and complete this eight-hour seminar, which included regulatory requirements relevant to the Western licence and training in emergency response procedures in accordance with the terms of Western's CNSC licence. All Western nuclear energy workers have

successfully completed the course. In addition to training by Western, all Western nuclear energy workers were trained on April 7, 2013 by Mistras Canada Inc. personnel;

- Western has engaged a radiography consultant to conduct a full root-cause analysis and propose measures to prevent further occurrence;
- an assistant RSO has been hired and is currently undergoing required training;
- Western conducted a simulation of the incident to determine the approximate length of time the workers were exposed to radiation and what dosage rates they were exposed to;
- the stand used on March 13, 2013 and all similar stands have been modified to improve stability and reduce the possibility of tipping, and the damaged guide tube would not be returned to service; and
- Western is working with all customers to further enhance security while Western is on site.

23. The Western representative also indicated that a CNSC inspector, over the last two weeks, performed several audits of the operations of a number of Western employees currently operating under the Mistras Canada license, and did not find any shortcomings. CNSC staff concurred with Western, noting, however, that these audits were not directly of Western's processes.

24. The Commission enquired on the actions still needed by Western that remain outstanding in the Order. CNSC staff responded that they have not received all the information needed to be able to conclude that all of the necessary measures have been taken as a result of this event. In particular, Western has not submitted a detailed event report that would lead CNSC staff to conclude that Western fulfilled item 5 of the Order, requiring Western to submit measures taken to prevent recurrence of the event. CNSC staff noted that Western did submit an event report on April 10, but CNSC staff considered it insufficient and requested further information. CNSC staff indicated that Western is required to submit a root cause analysis report, but that there is no immediate risk to the health and safety of workers or the public with respect to Western resuming its activities prior to the submission of this report.

25. CNSC staff provided their professional opinion that there is currently no imminent risk to the health and safety of workers, but that there are issues relating to the fulfilment of requirements of the Order and actions taken by the RSO.

26. The Commission asked about the root cause analysis and the expected completion date. Western representatives responded that they expect to receive the report by the end of June. The Commission expressed its opinion that, for an event of this proportion, the root cause analysis could be completed with more celerity.

27. CNSC staff noted that specific data were required in order to recalculate and confirm the precision of submitted information regarding personal doses, extremity doses and dose rates received by the workers. CNSC staff stated that Western needed to submit the requested information so that CNSC staff could reconstruct the dose. Western

agreed to provide the necessary information.

28. CNSC staff added that there is a need for confirmation that the RSO would act appropriately in fulfilling his duties, given inadequate instructions given to the workers during the incident. CNSC staff added that Western needed a qualified emergency responder in order to ensure continuous protection of the workers, the public and the environment.

29. Western representatives responded that the hired assistant RSO was scheduled for training in May 2013 that would qualify him to be an emergency responder.

30. The Commission asked CNSC staff for conditions under which they would consider acceptable to declare the order closed and allow Western to resume operations. CNSC staff recommended to the Commission that Western be authorized to resume its operations under the following conditions:

- To submit the information requested by CNSC staff regarding detailed data that would allow CNSC staff to make its own calculations of radiation doses to the workers.
- That the RSO involved with the incident not be allowed to fulfill the requirements of his duties.
- Western is to enlist the services of a qualified emergency responder.

31. Western commented that the current assistant RSO is scheduled to take appropriate training in May that would qualify him to be an emergency responder. Western also expressed its disagreement on CNSC staff's request to prevent the RSO involved in the incident to perform his duties, noting that he had made mistakes during the incident and fully admitted it. Western suggested that the current RSO should remain in function until the current assistant RSO is fully trained, and that these two RSOs work in conjunction afterwards. The Commission asked CNSC staff if this would be acceptable. CNSC staff commented that they would find it acceptable.

4. CONCLUSION

32. The Commission has considered the information and submissions of Western and the CNSC staff as presented in the material available for reference on the record for the proceeding.

33. The Commission, is satisfied that Western has complied with the order to the extent that the order may be lifted. As such, pursuant to subsection 37(6) of the NSCA, it revokes the Designated Officer Order issued to Western Inspection Ltd. on April 5, 2013 in the manner described in this *Record of Proceedings*.

34. With this decision, the Commission directs Western Inspection Ltd. to submit by June 1, 2013 to the CNSC Designated Officer the following:

- proof that their assistant RSO has completed all requirements to become a qualified emergency responder;
- completed root cause analysis report; and
- all data requested by CNSC staff to reconstruct radiation doses received by the workers during the incident.

35. The Commission also requires that the oversight of all Western Inspection Ltd. operations be conducted conjointly by the RSO and the assistant RSO.

36. The Commission noted that, while Western is no longer under an order as it has been revoked, it is subject to compliance verification by CNSC staff of requirements listed in paragraph 34.

M. Binder

MAY 1 3 2013

Michael Binder
President,
Canadian Nuclear Safety Commission

Date