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## **Oral Presentation**

## **Exposé oral**

**Written submission from  
Benoit Robert Poulet**

**Mémoire de  
Benoit Robert Poulet**

In the Matter of the

À l'égard de

**Canadian Nuclear Laboratories,  
Douglas Point Waste Facility**

**Les Laboratoires Nucléaires Canadiens,  
installation de gestion des déchets de  
Douglas Point**

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Application to amend the waste facility  
decommissioning licence for the Douglas  
Point Waste Facility

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Demande de modification du permis de  
déclassement de l'installation de gestion des  
déchets de Douglas Point

**Commission Public Hearing**

**Audience publique de la Commission**

**November 25-26, 2020**

**25 et 26 novembre 2020**

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Participant Funding Agreement Reference Number:  PFP 2020 DPWF01 Poulet	Participant Funding Recipient and Intervenor:  Benoit Robert Poulet
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Participant Funding Program Administrator

October 19, 2020

Canadian Nuclear Safety Commission

P.O. Box 1046, Station B

280 Slater Street

Ottawa, Ontario, K1P 5S9

**Subject: CMD 20-H4 - Canadian Nuclear Laboratories Ltd. - Douglas Point Waste Facility (e-Doc 6256602), CMD 20-H4.1 - Canadian Nuclear Laboratories, Douglas Point Waste Facility (e-Doc 6376135), and CMD 20 H4.1A (e-Doc 6401604).**

The Recipient agreed to participate in the CNSC public hearing scheduled for November 25 and 26, 2020 by completing the following tasks:

1. Review the Canadian Nuclear Laboratories (CNL) licence amendment application and related documentation, including CNL and CNSC Commission Member documents, with a focus on comparing the sustainability of measures and programs being proposed with those implemented for the Gentilly-2 project.
2. Prepare a written report summarizing comments from the review of the proposed licence amendment application and submit it to the Commission by no later than October 26, 2020.
3. Participate remotely in the Commission hearing on an as required basis.

The Recipient has completed the first two tasks and documented the findings, comments, and questions for consideration by the Commission in this report. Some of these items, for consideration by the Commission, are general in nature while others are specific to sections or topics covered by CMD 20-H4 (e-Doc 6256602) and CMD 20-H4.1 (e-Doc 6376135). Sections of the Douglas Point Waste Facility Detailed Decommissioning Plan Volume 1: Program Overview, Douglas Point Waste Facility (22-00960-DDP-001 Revision 1) were also reviewed to support the preparation of this report.

Additionally, the Recipient reviewed the June 25, 2020 CNL Webinar concerning the Douglas Point Waste Facility and participated in the subsequent CNL Webinar held on September 16, 2020. Questions posed by the Recipient through the second CNL Webinar were answered by CNL staff in a prompt and satisfactory manner. The recipient also visited the Virtual Open House hosted by CNL and concerning the Douglas Point Waste Facility.

The Recipient will be available to participate remotely in the November 25 and 26, 2020 Commission hearing should the Commission request it.

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**The Recipient general comments and questions are as follows:**

The information provided in CMD 20-H4.1 and CMD 20-H4.1A to support the Canadian Nuclear Laboratories (CNL) licence amendment application for the DPWF is well organized and clear. The summary descriptions of the activities which have taken place since the permanent shutdown of the Douglas Point Reactor in 1984 are effective in setting the context for the CNL application.

The “Deferred Decommissioning” strategy described in the CNL Document entitled “Douglas Point Waste Facility Detailed Decommissioning Plan Volume 1: Program Overview” is consistent with the strategy being implemented at other nuclear facility sites including those for the reactors located on the Gentilly site in the Province of Québec.

There are minor variations in the implementation of the “Deferred Decommissioning” strategy that are related to differences in the design of the facility, the site characteristics, and the surrounding environment. For example, the DPWF is located within an active nuclear generating site operated by Bruce Power while the Gentilly-1 and Gentilly-2 reactors, currently in different phases of decommissioning, are located on a stand-alone site. This allows CNL to make arrangements with Bruce Power for the provision of services that are still required during the DPWF decommissioning. The same option being not available for the Gentilly site requires the implementation of different measures to ensure the nuclear safety goals are also met at that location.

The Decommissioning work contained within each the five Planning Envelopes described in CMD 20-4.1 will require the development of Detailed Decommissioning Plans (DDPs). These DDPs will have to be reviewed and accepted by the CNSC prior to implementation of the Decommissioning and Demolition (D&D) activities. Recent Canadian industry experience with major works (e.g. reactor refurbishment) has shown the actual nature and level of the hazards encountered at a work site can be significantly different than what was anticipated during the planning phase (e.g. alpha radiation emitters). Lessons learned from these previous works should be considered during the development and review of these DDPs.

Since the details associated with these Planning Envelopes are not yet available, the ability to understand and comment on the magnitude of the potential hazards that may be created during the D&D work, or on the adequacy of measures that may be applied to ensure safety is very limited at this time. These limitations are reflected in the contents of this report.

The information provided in CMD 20-H4 to support the CNSC staff recommendations lacks clarity and does not provide the supporting facts for the CNSC staff recommendations.

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Unlike CNL, CNSC staff determined that only 5 out of the 14 CNSC Safety and Control Areas (SCAs) were relevant to the review of the CNL application.

These 5 SCAs were:

- Radiation Protection
- Conventional Health and Safety
- Environmental Protection
- Waste Management
- Packaging and Transport.

This CNSC staff determination suggests the information provided by CNL and concerning the other 9 SCAs was not considered or included as part of the basis of the CNSC staff recommendations.

Additionally, the CNSC staff determination of the Packaging and Transport SCA as being “relevant” to the CNL application because of a likely increase in the frequency of dangerous goods shipments appears to be in contradiction with the CNL information provided in CMD 20-4.1. According to Sections 17.1 and 17.2 (Pages 61 and 62) of CMD 20-4.1, CNL conducted a total of 13 shipments of Intermediate Level Waste (ILW) and 22 shipments of Low Level Waste (LLW) during the 2014-2019 period for a total of 35 shipments. The CNL estimated number of shipments for the remainder of the requested licensing period is for 1 shipment of ILW and 20 shipments of LLW for a total of 21 shipments. The CNSC staff basis for determining the relevancy of the Packaging and Transport SCA w.r.t. the CNL application is thus unclear.

CNSC staff also rated the CNL safety performance for the 5 “relevant” SCAs listed above as “Satisfactory”. The basis for this determination is mostly attributed to CNL having developed and implemented Corporate-wide programs that are also applicable to the DPWF, and not expected to change significantly during the next licensing period. The basis of the “Satisfactory” ratings awarded by CNSC staff does not however appear to be based on the conduct of any CNSC staff inspection of the CNL programs or of their implementation at the DPWL site. The lack of compliance verification information (e.g. inspection results) in CMD 20-H4 casts doubts on the basis for the “Satisfactory” rating in those 5 SCAs.

Items for consideration by the Commission:

Question #1 for CNSC staff:

Based on the information provided in CMD 20-4 and CMD 20-4.1, could CNSC staff explain how the Packaging and Transport SCA was selected as being relevant when no increase in the number of shipments is expected, and no supporting compliance verification or event information is being provided to support the CNSC staff determination.

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Question #2 for CNSC staff:

Could CNSC staff provide details about the compliance verification information upon which CNSC staff rated the CNL DPWF safety performance in the 5 “relevant” SCAs to be “Satisfactory”.

Question #3 for CNL:

In terms of the Worker Radiation Protection, could CNL explain how the lessons learned from previous major works at other nuclear facilities will be collected, reviewed, and integrated in the DDPs that will be developed for Planning Envelopes B, C, D, and E.

**The Recipient specific comments and questions are as follows:**

1 – CMD 20-H4.1:

- Figure 3-1 DPWF Layout Highlighting Decommissioning Planning Envelopes (Page 22)
- Table 3-2 DPWF Conceptual Decommissioning Schedule (Page 23)
- Section 8.2 – Future Plans (Page 40)

Review comment:

Figure 3.1 and Table 3-2 outline the current CNL Decommissioning Planning Envelopes along with a Preliminary Decommissioning Schedule. Planning Envelope ‘A’ which includes the Non-Nuclear buildings is estimated to take place between 2021 and 2024. Completion of this work will have removed administration offices and other smaller facilities such as a shop and storage area.

As per Section 8.2, CNL also plans to design and construct a number of supporting facilities during the next proposed licensing period (2020-2034). The design and implementation of a new electrical power system (Class IV) is provided as an example of a type of supporting facility. It is not clear whether other types of supporting facilities such as buildings, structures, or decontamination facilities that may be required to support the decommissioning work are also being planned for the site.

Item for consideration by the Commission:

Question for CNL:

Could CNL elaborate on the types of facilities which are being designed and planned during the next proposed licensing period (2020-2034), and as appropriate, give the purpose and likely location of these facilities on the DPWF site.

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2 – CMD 20-H4.1:

- Sections 6.2, 6.3, and 6.4 - Operational Experience and Corrective Action Program (Pages 35 to 37)

Review comment:

An Operating Experience (OPEX) program provides a mechanism which supports operational and safety performance improvements through the review and analysis of the lessons learned from events or occurrences which have taken place either at the facility itself or at another similar facility.

An OPEX program includes processes for developing and implementing corrective actions based on these lessons learned to reduce the likelihood and severity of the consequences of an undesirable event or occurrence.

In order to be effective, OPEX programs must rely on the timely reporting of the technical information required to assess the applicability of the lessons learned and allow for the development of preventive/corrective measures. This involves both reporting within an organization (internal reporting) and broader reporting to and from external organizations within the industry (e.g. regulatory agencies, industry peers, etc...).

The information provided on the CNL OPEX Program includes many of the features required to operate an effective OPEX program; however, it is mainly focused on the internal features of the CNL program and does not provide any detail on the processes relating to external OPEX.

While the DPWF Decommissioning Project would undoubtedly benefit from OPEX information generated by external organizations that have undertaken similar decommissioning projects, the DPWF project will also likely generate OPEX information that would benefit other similar future projects (e.g. nuclear facilities at the Gentilly site located in the Province of Québec) and help improve the overall safety performance of the nuclear industry.

Item for consideration by the Commission:

Question for CNL:

Could CNL provide more information on the elements of the CNL OPEX program as they relate to both the receiving of external OPEX information, and the preparation of OPEX information intended for external distribution. More specifically could CNL provide information on the following three sub-items:

1. The sources of external OPEX information used within the CNL program (e.g. other licensees, COG, IAEA, etc...).

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2. The processes or methods used to disseminate OPEX information from CNL to external organizations (e.g. from other licensees, COG, IAEA, etc...).
3. The number of OPEX reports or notices prepared by CNL and distributed to external organizations during the current licensing period (e.g. to other licensees, COG, IAEA, etc...).

3 – CMD 20-H4.1:

- Section 5.1 – Fitness for Duty (Pages 31 and 32).
- Section 13 – Safety and Control Area – Emergency Management and Fire Protection (Pages 52 to 54).

Review comment:

The emergency response services at the DPWF are currently being provided by Bruce Power through a contractual arrangement. There are also facility specific emergency procedures established to enable DPWF staff respond to abnormal and emergent events.

The information relating to the emergency response services mostly covers the methods that will be implemented by CNL to ensure all personnel working at the DPWF are aware of the emergency response measures and procedures that will be in place to ensure proper emergency response actions can be initiated should they be required during the different phases of the DPWF decommissioning work.

Information on the performance of the emergency response teams provided by Bruce Power for the DPWF site has not been provided by CNL, nor is information on the emergency team drills or practices that may have been conducted at the DPWF site during the current licensing period.

Items for consideration by the Commission:

Question #1 for CNL:

The DPWF site conditions in terms of the buildings, structures and road access are expected to change significantly as the different phases of decommissioning are completed.

Could CNL explain how the emergency response teams provided by Bruce Power will be made aware of these changes so the emergency response teams can review the impact of the changes and adjust the response strategy as may be required.

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Question #2 for CNL:

Could CNL provide information on the performance of the emergency response teams provided by Bruce power during the current licensing period. More specifically could CNL provide information on the following two items:

1. The number of times an event occurring at the DPWF required the activation of either the medical or fire emergency response teams.
2. The number of medical and fire emergency response drills/exercises conducted at the DPWF site.

**The Recipient closing remarks are as follows:**

Detailed planning of the next phase of the DPWF decommissioning should consider and integrate to the extent possible the OPEX information and lessons learned from previous major work projects. Conversely, measures aimed at capturing and distributing the OPEX information and lessons learned, both internally and externally, during the next phase of the DPWF decommissioning should be applied.

The CNSC staff information provided in CMD 20-H4 is narrow in scope and lacks clarity.

Although the details relating to the Decommissioning and Demolition activities that will be conducted during the next phase of the DPWF decommissioning are not available yet, the CNL information provided in CMD 20-H4.1 and presented during the two CNL hosted Webinars shows the measures and programs that CNL will apply during the next phase of the DPWF decommissioning are adequate and consistent with those of other nuclear facilities, including Gentilly-2.

The Recipient will be available to participate remotely in the November 25 and 26, 2020 Commission hearing should the Commission request it.