



CMD 22-M33.1

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**Written submission from
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**Mémoire d'
Evelyn Gigantes**

**Regulatory Oversight Report for
Canadian Nuclear Laboratories
Sites: 2021**

**Rapport de surveillance
réglementaire pour les sites
des Laboratoires Nucléaires
Canadiens : 2021**

Commission Meeting

Réunion de la Commission

November 2, 2022

Le 2 novembre 2022

September 26, 2022

Submission to the CNSC concerning the Regulatory Oversight Report for CNL Sites 2021.

by Evelyn Gigantes, Ottawa.

Because of my concern about the Chalk River Lands operations and the processes for increasing the hazards of these operations by the installations of new hot cell laboratories for development of nuclear fuels, and the license processes currently underway to install an NSDF and a micro-nuclear reactor at CRL, I was interested to learn what I could from CNSC-CMD22-M33 about radionuclide emissions that had occurred at the CRL site in 2021.

Unfortunately I have found the document itself doesn't provide an adequate description, nor do the associated documents - for example the linked file

<https://open.canada.ca/data/en/dataset/6ed50cd9-0d8c-471b-a5f6-26088298870e>

promises to deliver radionuclide releases at CRL during 2021, but does not, and when I sought help to get those figures, and get them in a form I could print out to examine, it took three exchanges of e-mails with technical staff at CNSC to get a difficult-to-read print-out:

Year Année	NPRI ID ID INRP	Company Name Raison Sociale	Facility Name Nom de l'installation	City Ville	CSD SDR	CA or CMA AR ou RMR	Economic Region Région économique	Province Province	Latitude Latitude	Longitude Longitude	Substance Name (English) Nom de substance (Anglais)	Substance Name (French) Nom de substance (Français)	Units Unités	Stack Emissions Émissions de cheminées	Direct Discharge Évacuations directes	Footnotes Notes de bas de page
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2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires Canadiens	Chalk River Laboratories	Chalk River	Deep	River	Renfrew	Kingston--Pembroke	ON	46.0554	-	77.3628	Elemental Tritium (HT) Tritium élémentaire	Bq	2.08E+12	NRM NRS
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2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires Canadiens	Chalk River Laboratories	Chalk River	Deep	River	Renfrew	Kingston--Pembroke	ON	46.0554	-	77.3628	Tritium (HTO) Tritium (Eau tritiée)	Bq	2.49E+13	1.50E+13
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2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires				
Canadiens		Chalk River Laboratories	Chalk River	Deep		
River	Renfrew	Kingston--Pembroke	ON	46.0554	-	
77.3628	Carbon-14	Carbone-14	Bq	0.00E+00		NRM NRS

2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires				
Canadiens		Chalk River Laboratories	Chalk River	Deep		
River	Renfrew	Kingston--Pembroke	ON	46.0554	-	
77.3628	Total noble gases	Total des gaz nobles	Bq-			
MeV	0.00E+00					NRM NRS

2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires				
Canadiens		Chalk River Laboratories	Chalk River	Deep		
River	Renfrew	Kingston--Pembroke	ON	46.0554	-	
77.3628	Iodine-125	Iode-125	Bq	1.76E+06		NRM NRS

2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires				
Canadiens		Chalk River Laboratories	Chalk River	Deep		
River	Renfrew	Kingston--Pembroke	ON	46.0554	-	
77.3628	Iodine-131	Iode-131	Bq	2.12E+07		NRM NRS

2021	3147	Canadian Nuclear Laboratories / Laboratoires Nucléaires				
Canadiens		Chalk River Laboratories	Chalk River	Deep		
River	Renfrew	Kingston--Pembroke	ON	46.0554	-	
77.3628	Argon-41	Argon-41	Bq	0.00E+00		NRM NRS

It was therefore very enlightening for me to read the CELA submission to the CNSC Nov 2-3 CNSC Hearings and those sections in which CELA argues forcefully that the information presented for public review is so badly presented that interested readers will not feel rewarded.

Let me turn next to 3 other parts of CNSC-CMD 22-M33 which caused me real difficulty. According to the document, of the 45 “reportable events” for CNL operations in 2021, 37 of them occurred at the CRL (p.56). The other 8 occurred at CNL’s second Laboratory site, Whiteshell.

But when it comes to providing information about these 37 “reportable events” at CRL, the CNSC-CMD 22-M33 document doesn’t report much.

Table F-2(page 57) numbers the events, gives each a title, SCA (Safety and Control Area, which appears to be a designation by subject type) and the Facility (if applicable) where the event

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occurred. Of the ten “Facilities” identified, the Molybdenum-99 Production Facility is noted twice, the Fuels and Materials Cells are noted once, Waste Management Areas D, H and unspecified are noted a total of 3 times, Facilities Decommissioning noted once (a truck involved tipped over), and the NRU Rod Bays are noted once.

The Safety and Control Areas noted are “Emergency Management and Fire Protection” (13 times), Environmental Protection (3), Conventional Health and Safety (2 times), Radiation Protection (5 times), Safeguards and Non-proliferation events (3 times), Packaging and Transport events (1), Safety analysis (1 event – “Depleted uranium unaccounted for”), Radiation (2 events), Waste Management (1 event), Physical Design (1 – an “EOC activation Due to Service Water Leak in B466”), Security events (4).

There is also a table (Table E-1, p.p.52 -53) listing 11 CNSC- led inspections during 2021 at CRL. The results of these inspections during 2021 were 29 Notices of Non-Compliance and 29 Recommendations. On June 17, 2021 and October 19, 2021 there were two inspections of Security at CRL .

The trouble for a member of the public who is not also a member of CNSC staff is that these three information sources are not designed to inter-relate. There is no way in which a non-initiated reader can figure out what actually happened. The radionuclide release information is not dated, Table E-1 of CNSC inspections at CRL gives dates but doesn’t name what inspectors found “Non-compliant” and worthy of “recommendations”, and Table F-2 is dated only “2021” for each reportable event.

It’s also unclear from Table F-2 whether the “reportable events” were always reported by CNL, or sometimes by one of the two CNSC staff who worked at the CRL during 2021.

As the whole point of producing information documents for public hearings about the Regulatory Oversight Report is to have interested members of public capable of asking questions about the contents of the Report, the Report documentation is exceedingly unhelpful. At best one can, with difficulty, compare particular radionuclide emissions from year to year, but aside from that the reader has to take the word of CNSC staff that during 2021 there was no reason for concern about anything except CRL security:

“For CRL, following a technical assessment of the security program in 2020, CNL submitted additional documentation that contained insufficient information to permit CNSC staff to conclude whether CNL was meeting their regulatory requirements. Throughout 2021, further documentation was requested from CNL to substantiate statements of compliance made by the licensee. In August 2021, CNSC staff concluded that a non-compliance existed in CNL’s security program. CNSC staff issued a notice of non-compliance (NNC) and required that immediate compensatory measures be taken. In

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October 2021, CNL failed to implement the requested compensatory measures needed to mitigate the identified risk, therefore Inspector Order # 6656254 was issued to CNL (amended in November 2021 by the Designated Officer). In November 2021, CNL met the compensatory measures required by the Order. CNL continues to provide periodic updates including submissions and status reports on their progress. CNL remains obligated to continue to meet the terms and conditions of the Order.

As the specific conditions of this Order is considered security sensitive information, additional details will be provided in protected CMD 22-M33.A. CNSC staff assessed that in 2021 CRL did not meet the applicable regulatory requirements and are therefore rated as “below expectations” for the security SCA”. (p.26)

Personally I was most interested in Reportable Event #29 the “Chalk River Laboratories EOC Activation for Class IV power Outage Due to a Provincial Wide Winter Storm with High Winds” (p.58). I would have very much liked to have a date for that (successful) activation so I could check the exact storm being named. It is one of my major fears that CNSC Commission Members and CNSC staff have so far under-estimated the nature of weather-related events that Climate Change will soon produce at the CRL site and how the intensity of storms in the future is likely to affect the safety of the Research Labs, an inadequate NSDF and other “managed waste”, and the proposed new Micro-Reactor.

Overall, the Regulatory Oversight Report is very unsatisfactory from the point of view of this interested reader.