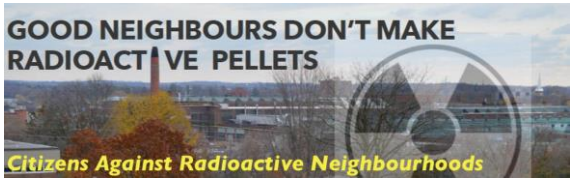

May 31, 2021

via email: nrcan.nlca2021-lrimn2021.rncan@canada.ca

RE: CIVIL SOCIETY RESPONSE TO FIVE-YEAR REVIEW OF THE *NUCLEAR LIABILITY AND COMPENSATION ACT*

The undersigned environmental and civil society organizations and individuals provide the following comments in response to Natural Resource Canada's (NRCan's) call for comments regarding the five-year review of Canada's *Nuclear Liability and Compensation Act* (NLCA).[1]

In light of competing deadlines, including comments on Canada's Radioactive Waste Policy also being due May 31, 2021, and ongoing capacity constraints due to COVID-19, we reserve the right to provide further refined and supplemental comments, both individually and collectively.

I. SUMMARY OF CONCERNS

When the *NLCA* came into force in 2017, it increased the liability limit for nuclear operators from $75 million to up to $1 billion.[2] However, despite this increase in liability, two central and problematic features remain to Canada's liability regime, allowing nuclear proponents to be

[1] Natural Resources Canada (2021), "The Nuclear Liability and Compensation Act," online: https://www.nrcan.gc.ca/our-natural-resources/energy-sources-distribution/nuclear-energy-uranium/nuclear-liability-compensation-act/19224

[2] *Nuclear Liability and Compensation Act,* SC 2015, c 4, s 120 **[*NLCA*]**

prioritized over the protection of public rights. First, nuclear suppliers and vendors are shielded from liability in the event of accidents. Second, the maximum liability for the highest risk facilities is capped at $1 billion, shielding operators from total liability. Other facilities deemed to be "lower risk" have even lower liability limits.[3]

With respect to the five-year review of the *NLCA*, we recommend that Canada:

1. Remove the shielding of the nuclear supply chain from liability and claims of negligence
2. Remove the $1billion liability cap and make liability for negligence unlimited
3. Ensure that at a minimum, liability for the nuclear sector is established in a similar manner with the federally regulated oil and gas sector
4. Subject all reactors, regardless of design, to unlimited liability for negligence
5. Retain the requirement for a minimum of $1 billion absolute liability for nuclear power plants and other facilities

II. ABOUT US

(a) Canadian Environmental Law Association

The Canadian Environmental Law Association (CELA) is a non-profit, public interest organization established in 1970 for the purpose of using and improving existing laws to protect public health and the environment. For nearly 50 years, CELA has used legal tools, undertaken ground-breaking research and conducted public interest advocacy to increase environmental protection and the safeguarding of communities. CELA works towards protecting human health and the environment by actively engaging in policy planning and seeking justice for those harmed by pollution or poor environmental decision-making.

(b) Ontario Clean Air Alliance

The Ontario Clean Air Alliance (OCAA), established in 1997, successfully led the campaign to phase out the use of dirty coal power in Ontario. They are now working to move the province of Ontario to a 100% renewable electricity system.

(c) Concerned Citizens of Manitoba

The Concerned Citizens of Manitoba have been active in environmental affairs for over 40 years.

[3] Nuclear Liability and Compensation Regulations, SOR/2016-88

(d) Ralliement contre la pollution radioactive

The mission of Ralliement contre la pollution radioactive is to act voluntarily and collectively to promote responsible solutions for radioactive waste management that are safe for the environment and the health of the population.

(e) Coalition for Responsible Energy Development in New Brunswick

The Coalition for Responsible Energy Development in New Brunswick (CRED-NB) is a coalition of grassroots groups and individuals that support a mission to advocate for truly clean renewable energy in New Brunswick to address the climate crisis. They work to increase the percentage of electricity generation from renewable sources such as wind, solar and geothermal, accompanied by rigorous energy efficiency, smart grid and storage capacity. CRED-NB is fighting for a nuclear-free energy future.

(f) Northwatch

Northwatch is a public interest organization concerned with environmental protection and social development in northeastern Ontario. Founded in 1988 to provide a representative regional voice in environmental decision-making and to address regional concerns with respect to energy, waste, mining and forestry related activities and initiatives, Northwatch has a long term and consistent interest in the nuclear chain, and its serial effects and potential effects with respect to northeastern Ontario.

(g) The Coalition for a Clean Green Saskatchewan

The Coalition for a Clean Green Saskatchewan promotes renewable energy for Saskatchewan and Canada.

(h) Old Fort William Cottagers' Association

The Old Fort William Cottagers' Association was founded in 1990 as a means of bringing together residents and cottagers in Sheenboro and Fort William, Quebec with a goal to maintain an environmental focus through advocacy and stewardship of the Ottawa River. Being the first community downriver, a primary focus has been on the nuclear activities at Chalk River Laboratories. Members of the OFWCA are concerned about Canadian Nuclear Laboratories' proposed radioactive waste disposal facility and the precedent which will be set should SMRs at Chalk River be approved, in creating new waste streams and adding to existing legacy wastes.

(i) Citizens Against Radioactive Neighbourhoods

Citizens Against Radioactive Neighbourhoods (CARN) is a nonprofit organization created to stop the manufacturing of uranium oxide pellets in downtown Peterborough, located 25 metres from an elementary school.

III. COMMENTS ON FIVE-YEAR REVIEW

(a) Nuclear suppliers and vendors should not be exempt from liability

Canada's approach to nuclear liability is that it limits liability to operators, meaning manufacturers of nuclear technologies, for instances, are not held liable for accidents that result from design choices.[4] As a result, suppliers and contractors can engage in the nuclear sector with full immunity from being held liable by the public for any damage.

As logic dictates, when a party is insulated from financial risk, it views various trade-offs differently and by virtue of being indemnified, suppliers may make more risky design choices. We also have examples of this being true, where nuclear reactor suppliers have ignored warnings from scientists and safety officials because it would affect their revenues and profits.

The case of Fukushima and the supplier of the reactors there, General Electric Company (GE), offers a good example. The reactors that melted down at the Fukushima Daiichi Nuclear Power Plant were all of the Mark 1 Boiling Water Reactors (BWR) design from GE. General Electric has been aware of concerns about the Mark 1 containment design's ability to handle a buildup of hydrogen gas pressure if one of the cooling systems were to go down for decades.

In the mid-1980s, a nuclear official had asserted that in Mark 1 designs, the containments "had a 90 percent probability of bursting should the fuel rods overheat and melt in an accident".[5] During the 2011 Fukushima accident, fuel rods did overheat, melt, and release hydrogen, which exploded and overwhelmed the containment.

(b) Liability should not be capped at $1 billion as it shields operators from total liability

The second problematic feature of Canada's policy is the capping of liability at a level that is much lower amount than the actual costs of dealing with catastrophic accidents such as Chernobyl and Fukushima. Going by these experinces, $1 billion is far too low to provide assurance of the ability to adequately compensate victims of a severe accident.

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[4] *NLCA,* s 9

[5] Tom Zeller, 'Experts Had Long Criticized Potential Weakness in Design of Stricken Reactor', *New York Times,* 15 March 2011.

Estimates of damage from the Fukushima disaster range from nearly $200 billion to over $600 billion.[6] Estimates for the costs imposed by the Chernobyl accident amount to nearly $700 billion. In 2013, France's nuclear safety institute estimated that a severe accident could end up costing $580 billion.[7]

(c) Liability for the nuclear sector should be established in a manner similar to the federally regulated oil and gas sector

Canada's nuclear liability framework is also less comprehensive than that of other major industries in Canada's energy sector, namely oil and gas. As Table 1 sets out below, there are striking differences between oil and gas liability compared when compared to nuclear liability.

Table 1. Comparison of Liability in Energy Sector

	NUCLEAR	**OIL & GAS**
Absolute Liability Caps	$1 billion maximum absolute liability	$1 billion if no fault (absolute liability)
Damages for Negligence	No claim for negligence permitted	Unlimited if proven fault/negligence
Liability of supply chain (e.g. vendors, suppliers, contractors)	No – supply chain shielded	Yes – supply chain liable

First, in case of nuclear operators, the required financial assurance of up to $1 billion depending on the type of facility is also a cap on operator liability. Thus, there is no possibility of any further liability to third party victims by the operator, even in case of operator or supplier negligence.

Second, unlike the nuclear sector, the oil and gas sector does not have a cap on liability should there be negligence or fault. If harm exceeds $1 billion in an offshore oil and gas accident, for instance, all negligent parties are still potentially responsible to pay damages. In comparison to the nuclear sector, if harm exceeds $1 billion in a nuclear accident, the only other potential

[6] BBC News (28 November 2016) "Japan Fukushima nuclear power plant 'clean up costs double', online: https://www.bbc.com/news/world-asia-38131248; The Japan Times (7 April 2017), "Real cost of Fukushima disaster will reach ¥70 trillion, or triple government's estimate: think tank", online: https://www.japantimes.co.jp/news/2017/04/01/national/real-cost-fukushima-disaster-will-reach-%C2%A570-trillion-triple-governments-estimate-think-tank/#.Xkh4lRd7mu4

[7] Reuters, (6 February 2013) "Major nuclear accident would cost France $580 billion: study," online: https://www.reuters.com/article/us-france-nuclear-disaster-cost-idUSBRE91603X20130207

source of compensation for victims of the accident is from the Canadian government by way of its discretionary decision to set up a taxpayer funded compensation fund.

Third, for oil and gas license holders, other responsible parties may be held liable if they are proven negligent. This joint and several liability can be apportioned among those found negligent by the court in proportion to their respective degrees of responsibility. Thus, suppliers and contractors have potential liability for their negligent actions. This is not the case for nuclear liability, where no other parties other than nuclear operators can be held liable whatsoever, even if their negligence contributed to accident-caused harm to third parties.

(d) All reactors, regardless of design, should be subject to unlimited liability

The five-year review provides a timely opportunity to ensure unlimited liability within the nuclear sector and the removal of protection for the nuclear supply chain. This is particularly necessary because proposals for new nuclear power plants, like Small Modular Reactors (SMRs), are looking to weaken current liability rules.[8]

The 2018 visioning document for SMRs in Canada written by the Canadian Nuclear Association, "A Call to Action: A Canadian Roadmap for Small Modular Reactors," recommends:

> The federal government should review liability regulations … to ensure that nuclear liability limits for SMRs are aligned with the risks they pose, using a graded scale based on risk informed criteria.[9]

In the 2021 SMR Action Plan, Canada "accepted" the Roadmap's recommendation on nuclear liability, noting "based on their risk assessment, appropriate classes and liability amounts for different SMR categories will be made in the regulations of the NLCA."[10] SMR vendors would like to further lower the cap that is already too low. They also want to reduce the size of the emergency planning zones.

All reactors, including SMRs, are capable of severe accidents. While a smaller reactor could result in lower levels of damage because of the smaller in-core inventory of radioactive material and smaller amount of energy available for release during an accident, SMR vendors are

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[8] While there is no one accepted definition for an SMR, it generally refers to a more compact nuclear reactor designed producing 1 – 300 MW of electricity/heat; the term 'modular' refers to proponent's hope that they can be assembled from factory produced modular rather than on site; *see* Blaise and Stensil (2020), "Small Modular Reactors in Canada: Eroding Public Oversight in Canada's Transition to Sustainable Development," online: https://cela.ca/small-modular-reactors-in-canada-eroding-public-oversight-in-canadas-transition-to-sustainable-development/

[9] Canadian Small Modular Reactor Roadmap Steering Committee (2018) "A Call to Action: A Canadian Roadmap for Small Modular Reactors," online: https://smrroadmap.ca/

[10] Canada's Small Modular Reactor (2021) "SMR Action Plan," online: https://smractionplan.ca/

typically not planning to build just one small reactor; they often plan to build a group of SMRs at the same site. In that case, the combined radioactive inventories are sizable, even in comparison with a large reactor.

It is necessary to recall that the Fukushima accident involved reactors that are relatively small. Daiichi 1 was only 440 MW in net power output. The radioactive contamination from those meltdowns extended far, and over 150,000 people had to be evacuated. The damage has been estimated as being at least $200 billion, and possibly over $600 billion. Thus, even a single SMR accident could result in damages in excess of $1 billion. Lowering the liability below $1 billion for SMRs is not justified.

IV. CONCLUSION

Based on the aforementioned comments, the Canadian Environmental Law Association, Ontario Clean Air Alliance, Coalition for Responsible Energy Development in New Brunswick, Northwatch, Concerned Citizens of Manitoba, Ralliement contre la pollution radioactive, The Coalition for a Clean Green Saskatchewan, Old Fort William Cottagers' Association, Citizens Against Radioactive Neighbourhoods and undersigned individuals request NRCan to:

1. **Remove the shielding of the nuclear supply chain from liability and claims of negligence;**
2. **Remove the $1billion liability cap and make liability for negligence unlimited;**
3. **Ensure that at a minimum, liability for the nuclear sector is established in a similar manner with the federally regulated oil and gas sector;**
4. **Subject all reactors, regardless of design, to unlimited liability for negligence; and**
5. **Retain the requirement for a minimum of $1 billion absolute liability for nuclear power plants and other facilities.**

Sincerely,

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