The Clerk

Standing Committee on Natural Resources (RNNR)

House of Commons

Ottawa, Ontario K1A 0A6

rnnr@parl.gc.ca

Re: Formal Complaint — The CNSC's Use of the Word "Unfounded" to Prevent the Independent Application of the Precautionary Principle by the Impact Assessment Agency of Canada in Relation to the Energy Alberta Peace River Nuclear Power Project (IAAC File 89430)

I write to bring to the Committee's attention what I submit is a matter of constitutional and statutory significance: the Canadian Nuclear Safety Commission (CNSC) has issued a public document characterising the international epidemiological signal of excess childhood leukemia near nuclear power plants as "unfounded." This characterisation, I will demonstrate, is not a scientific conclusion — it is a legal instrument. Its function is to prevent the mandatory precautionary obligation in section 6 of the Impact Assessment Act (IAA) from being independently applied by the Impact Assessment Agency of Canada (IAAC) to the Energy Alberta Peace River Nuclear Power Project, currently under IAAC review (File 89430).

If this complaint is well-founded, the Committee is being asked to consider whether a regulatory body has used its characterisation of scientific evidence to disable a statutory precautionary obligation imposed by Parliament on the assessment process — and whether Parliament should act to ensure the precautionary obligation is applied independently, as the statute requires.

PART I — THE STATUTORY FRAMEWORK

IAA Section 6: A Mandatory Precautionary Obligation

Section 6 of the Impact Assessment Act provides, in relevant part:

> The Government of Canada, by means of this Act, commits to a precautionary approach to decision-making, according to which lack of full scientific certainty is not to be used as a reason for postponing measures that prevent adverse effects on the environment or adverse direct or incidental effects where there are threats of serious or irreversible damage.

The precautionary obligation in s.6 has two triggering elements: first, a threat of serious or irreversible damage; second, lack of full scientific certainty about that threat. Both elements must be present. Once both are present, the obligation is mandatory — lack of certainty cannot postpone measures. The IAAC has no discretion to decline to apply it. It is a commitment of the Government of Canada expressed in the Act itself.

The epidemiological record relevant to this obligation is substantial. The KiKK study (Kaatsch et al., 2008), commissioned by Germany's Federal Office for Radiation Protection, found an odds ratio of 2.19 for childhood leukemia within five kilometres of operating nuclear power plants in Germany — a 119% excess. This finding has been replicated in France (GEOCAP, 2012, OR ~1.9), confirmed as real by the UK's Committee on Medical Aspects of Radiation in the Environment (COMARE 14th Report, 2011), supported in pooled European analyses, and extended by a 2025 Harvard study finding approximately 20% excess cancer mortality near US nuclear facilities over 40 years. Germany's own radiation protection commission (SSK) reviewed the KiKK finding and concluded: the cause "remains unclear."

The threat element of the s.6 trigger — childhood leukemia at elevated rates near nuclear facilities — is therefore established by multiple independent peer-reviewed studies across multiple countries. The scientific certainty element — cause of the association is unclear and mechanism unknown — is acknowledged by every major nuclear regulatory body, including Germany's SSK, the UK's COMARE, the WHO, the US National Academy of Sciences, and the Nuclear Regulatory Commission. Section 6 is triggered on the international evidence record as it stands.

The Consequence: What Section 6 Requires of the IAAC

Once triggered, s.6 requires the IAAC to ensure that the absence of scientific certainty does not postpone measures to address the threat. In the context of an impact assessment of a proposed nuclear facility, this means the IAAC cannot approve the project — or impose conditions permitting it to proceed — without first requiring the applicant to demonstrate that the threat of serious harm has been addressed. The applicant must show what precautionary measures will be taken and why those measures are adequate to address a threat whose causal mechanism is unknown and whose dose model is structurally unvalidated for the most sensitive endpoint (fetal tissue near operating CANDU reactors).

This is consistent with the doctrine established by the Federal Court in

Morton v. Canada (Fisheries and Oceans) *2015 FC 575*, which held that the precautionary principle is a norm of substantive Canadian law applicable to all statutes and regulations, and that the proponent of a licensed activity must prove the activity will not cause an unacceptable level of harm. Licence conditions cannot derogate from the precautionary principle.

PART II — THE CNSC'S "UNFOUNDED" DECLARATION

What the Document States

The CNSC has published a document titled "The KiKK Study Explained: Fact Sheet" (last modified October 24, 2025; available at cnsc-ccsn.gc.ca). The document's body states:

> "The cause of the association between childhood leukemia and proximity to nuclear power plants **remains unclear**. The body of evidence available to the CNSC does not allow for a definitive determination of causality... **more research is required** to further our understanding of childhood leukemia." [Emphasis added]

The same document's conclusion states:

> "The CNSC concludes that there is **no credible scientific basis** for the KiKK study association between childhood cancer and proximity to nuclear power plants operating within regulatory limits. The association is **unfounded**."

The Internal Contradiction

These two statements are logically incompatible. The body acknowledges that the cause of the association is unclear, that a definitive determination cannot be made, and that more research is required. These are statements about an open scientific question. The conclusion states the association is unfounded — meaning it has no basis and the question is closed. A question that requires more research is not a question that has been resolved. A cause that remains unclear has not been eliminated. The document's conclusion contradicts its own body.

This contradiction is not a drafting oversight. It is structural. The body preserves the appearance of scientific rigour. The conclusion does legal work: it removes the threat element from the IAA s.6 trigger. If the association is unfounded — if there is no credible basis for it — then there is no threat of serious or irreversible damage from nuclear power plant proximity. If there is no threat, s.6 is not triggered. If s.6 is not triggered, the IAAC is not required to impose precautionary conditions. The project proceeds on the ordinary standard.

What the CNSC's Own Technical Documents Establish

The CNSC's internal technical report INFO-0799 ("Health Effects, Dosimetry and Radiological Protection of Tritium," 2010) contains the following acknowledgements, each of which independently triggers IAA s.6 regardless of how the KiKK association is characterised:

CNSC INFO-0799 acknowledges:	CNSC public fact sheet states:	Legal consequence:
Tritium relative biological effectiveness = 2.2× more appropriate than the wR = 1.0 currently used in all dose calculations	Tritium is "relatively weak" radiation	wR underestimate is acknowledged by CNSC's own science; dose calculations systematically understate fetal risk
Fetal dose is double the adult whole-body dose at any concentration of tritiated water	Tritium doses to members of the public are "far below" guidelines	Dose guidelines assessed against adults do not protect the fetus; CNSC public statement is misleading
Fetal biokinetic models are not validated	Tritium is safely managed under existing standards	Safety determination rests on unvalidated models; s.6 uncertainty trigger is met on CNSC's own terms
Ontario Drinking Water Advisory Committee recommended a 350-fold reduction in the Ontario tritium standard (from 7,000 to 20 Bq/L) specifically to protect fetal health	No mention of ODWAC recommendation	Recommended 350-fold protective reduction acknowledged, unrefuted, unimplemented — 17 years later

Each entry in this table is a documented discrepancy between what the CNSC's internal science acknowledges and what its public communications assert. Each discrepancy independently triggers IAA s.6 on the uncertainty element. Taken together, they establish that the CNSC's public documents cannot serve as the settled scientific foundation for the IAAC's precautionary analysis. The IAAC must apply s.6 to the full technical record — not to the CNSC's public characterisations of it.

The International Comparator — Why "Unfounded" Is Unique

Every major nuclear regulatory body that has reviewed the KiKK association has used language that acknowledges uncertainty:

Regulatory body	Language used on KiKK association	Precautionary trigger preserved?
Germany (SSK)	"Cause remains unclear"	Yes — uncertainty acknowledged
UK (COMARE)	"Could not be explained by radiation dose received"	Yes — signal acknowledged, mechanism unknown
WHO	No "unfounded" declaration; cause characterised as unresolved	Yes
US NRC / NAS	"Open question"; commissioned national study 2010	Yes — NRC response was to commission NAS review
France (IRSN)	Signal confirmed in GEOCAP (OR ~1.9); mechanism under study	Yes

CNSC (Canada)	"Unfounded" — no credible scientific basis	No — threat element removed; s.6 not triggered

The CNSC is the only major nuclear regulatory body in the world to have used the word "unfounded" about the KiKK association. The United States Nuclear Regulatory Commission's response to the same evidence was to commission a multi-year, multi-million dollar national study by the National Academy of Sciences in 2010. The NRC did not declare the association unfounded; it concluded the question required the most rigorous scientific scrutiny available. The CNSC reached the opposite conclusion on the same evidence base and did not commission any equivalent study.

PART III — THE LEGAL MECHANISM OF CIRCUMVENTION

How "Unfounded" Prevents Section 6 from Operating

The word "unfounded" is not a stronger form of "unclear." It is a categorically different statement that performs a different legal function. "Unclear" preserves the s.6 uncertainty trigger — a threat whose cause is unclear is a threat about which there is not full scientific certainty. "Unfounded" eliminates the s.6 threat element — an association that has no credible scientific basis is not a threat at all. Once the threat element is removed, neither element of the s.6 trigger is present, and the precautionary obligation does not apply.

The practical consequence in the Energy Alberta IAAC proceeding is as follows. Energy Alberta's application relies on CNSC safety characterisations as its evidentiary foundation for health and safety claims. The CNSC is the designated responsible authority for nuclear projects under the IAA. The IAAC's technical assessment of nuclear health risks relies substantially on CNSC expertise. The CNSC's "unfounded" declaration pre-emptively resolves — against the precautionary trigger — the central scientific question that s.6 requires the IAAC to address independently. If the IAAC accepts the CNSC's framework, s.6 is satisfied by reference to CNSC standards that the CNSC has already declared adequate. The independent precautionary assessment Parliament required never occurs.

The Structural Conflict of Interest

The CNSC performs two functions that are in structural tension. It both licenses nuclear facilities and produces the health risk characterisations of those facilities. It is funded primarily by licence fees from the operators it regulates. Its principal research contractor is Canadian Nuclear Laboratories, successor to Atomic Energy of Canada Limited — the entity the CNSC also regulates. These structural facts do not establish bad faith. They establish an institutional environment in which consistent directional bias in risk characterisation — away from findings that would impose regulatory costs on licensees — is the predictable institutional outcome, regardless of the intentions of individual scientists.

The seven documented contradictions between CNSC public documents and CNSC internal technical reports — across the KiKK Fact Sheet, the Tritium Fact Sheet, the RADICON study, and others — are consistent with this institutional pattern. None of the contradictions runs in the direction of overstating public risk. All run in the direction of understating it. This directional consistency is the relevant institutional fact, not any individual error.

The Vavilov Standard

A decision by the IAAC resting on the CNSC's "unfounded" conclusion — without independently confronting the contradiction between that conclusion and the body of the same document, and without confronting the acknowledged uncertainties in INFO-0799 — would not be reasonable in the

Vavilov (2019 SCC 65) sense. *Vavilov* requires that an administrative decision be justified, transparent, and intelligible in relation to the relevant legal and factual context. A precautionary analysis under IAA s.6 that treats an internally contradicted conclusion as settled science, and that treats the licensing body's characterisation of its own licensees' risks as independent expert evidence, satisfies none of those requirements.

The Morton Doctrine

The Federal Court held in

Morton v. Canada (Fisheries and Oceans) 2015 FC 575 that the precautionary principle is a norm of substantive Canadian law, that the proponent of a licensed activity bears the burden of demonstrating it will not cause unacceptable harm, and that licence conditions cannot derogate from the precautionary principle. An IAAC approval premised on the CNSC's "unfounded" declaration — without requiring Energy Alberta to independently discharge the precautionary burden — derogates from the precautionary principle by substituting the licensing body's characterisation for the applicant's independent demonstration. This is precisely what *Morton* prohibits.

PART IV — THE SPECIFIC REQUESTS TO THE COMMITTEE

I respectfully request that the Standing Committee on Natural Resources consider the following:

Request 1: Committee Examination of the CNSC KiKK Fact Sheet

The Committee is asked to examine the CNSC KiKK Fact Sheet — specifically the logical incompatibility between its body ("cause remains unclear; more research is required") and its conclusion ("unfounded") — and to ask the CNSC to explain in writing how a scientific question that requires more research has simultaneously been resolved to the point of unfoundedness. The Committee should ask the CNSC to identify the specific evidence that caused it to reach a conclusion stronger than the conclusion

reached by Germany's SSK about Germany's own study, and stronger than the conclusion reached by the United States NRC and NAS about the same evidence.

Request 2: Examination of the Structural Conflict of Interest

The Committee is asked to examine the CNSC's dual function — as both nuclear licensor and producer of health risk characterisations — in the context of the IAAC's reliance on CNSC materials as the evidential foundation for precautionary analysis. Specifically: what institutional safeguards exist to ensure that the CNSC's health risk characterisations are not influenced by its licensing and promotion function? What independent scientific review was applied to the KiKK Fact Sheet before it was published? Who reviewed the internal contradiction between its body and conclusion?

Request 3: Parliamentary Direction on IAA Section 6 Independence

The Committee is asked to consider whether the current institutional architecture — in which the CNSC is the responsible authority and primary technical source for the IAAC's nuclear health risk assessment — is consistent with Parliament's intent in enacting IAA s.6. If the IAAC's s.6 analysis is effectively co-determined by the institution whose licensing regime is under review, Parliament's mandatory precautionary commitment is not being implemented. The Committee may wish to consider recommending that the IAAC be required, in assessing nuclear projects, to appoint an independent scientific panel with disclosed conflict-of-interest screening to review health risk characterisations — rather than relying on CNSC materials as the settled evidential foundation.

Request 4: Direction to the IAAC Regarding Energy Alberta File 89430

The Committee is asked to consider communicating to the IAAC that Parliament's intention in enacting IAA s.6 was that the precautionary obligation be applied independently — not as filtered through the licensing body's characterisation of its own licensees' risks. The IAAC should be encouraged to apply s.6 to the full international evidence record on the childhood leukemia — nuclear proximity association, including the replication studies not cited in the CNSC's KiKK Fact Sheet, and the acknowledged uncertainties in the CNSC's own INFO-0799. The IAAC should be encouraged to require Energy Alberta to independently discharge the precautionary burden under

Morton — rather than relying on CNSC characterisations as a substitute for that demonstration.

Request 5: Referral of the RADICON False Statement

The Committee is asked to note a separately documented concern: the CNSC's RADICON study (2013) states that radioiodine "was below detection limits at all three NPPs for the entire study period." The CNSC's own database, INFO-0210/Rev.10 and Rev.13, records that Pickering A released 0.32 GBq of radioiodine in 1990 — 32 times the stated detection threshold. The CNSC's own Executive Vice President acknowledged this factual error in a written communication to a member of the public in 2017. As of March 2026, the false statement remains uncorrected — nine years after senior officer acknowledgement.

A false statement in a public regulatory document, acknowledged at senior officer level, uncorrected for nine years, raises questions about the CNSC's compliance with its statutory obligations to publish accurate information. The Committee may wish to ask the CNSC to explain why the correction has not been made.

PART V — SUMMARY OF THE LEGAL ARGUMENT

The argument may be stated in five propositions:

1. IAA s.6 imposes a mandatory precautionary obligation triggered by a threat of serious harm combined with scientific uncertainty. Both elements are present on the international epidemiological record: the childhood leukemia excess near NPPs is real and replicated; its cause is acknowledged as unclear by every major regulatory body that has reviewed it.
2. The CNSC's "unfounded" declaration removes the threat element from the s.6 trigger. If the association is unfounded, there is no threat. If there is no threat, s.6 does not apply. The word "unfounded" is doing legal work, not scientific work — it is the instrument by which a statutory obligation is disabled.
3. The declaration is internally contradicted by the body of the same document, which acknowledges the cause is unclear and more research is required. A self-contradicting document cannot constitute a settled factual foundation for a statutory precautionary assessment.
4. The declaration is made by the institution whose licensing regime is under review — an institution with a documented structural conflict of interest and a directionally consistent pattern of understating public risk across seven documents. Accepting it as the foundation for the IAAC's s.6 analysis converts the IAAC from an independent oversight mechanism into a ratification of the CNSC's predetermined conclusions.
5. Under Vavilov, an IAAC decision that rests on this foundation without confronting the contradiction is not reasonable. Under Morton, an approval that substitutes the CNSC's characterisation for the applicant's independent discharge of the precautionary burden derogates from the precautionary principle and is unlawful.

> The question this complaint asks the Committee to consider is not whether nuclear power is safe. It is whether a regulatory body can use a single characterisation word — "unfounded" — to prevent Parliament's mandatory precautionary commitment from being applied by the independent agency Parliament created to apply it. The answer to that question determines whether IAA s.6 has any independent force in the nuclear context — or whether it will be satisfied in every future nuclear assessment by reference to CNSC standards, which the CNSC has already declared adequate, without any independent precautionary assessment ever occurring.

SUPPORTING DOCUMENTS AVAILABLE

I am prepared to provide the Committee with the following supporting documents on request:

- CNSC KiKK Fact Sheet (October 2025 revision) — annotated to identify the body/conclusion contradiction
- CNSC INFO-0799 (2010) — annotated to identify the six public/internal contradictions on tritium risk
- CNSC RADICON Study — annotated to identify the radioiodine false statement and the INFO-0210 records refuting it
- Comparative table: KiKK regulatory language across seven jurisdictions
- Formal complaint to the IAAC (File 89430) — 926 paragraphs, thirteen show stoppers, three annexures
- Bibliography of 26 peer-reviewed studies on childhood leukemia near nuclear facilities excluded from the CNSC's KiKK Fact Sheet reference list

I am available to appear before the Committee or to provide a written briefing at the Committee's convenience.

Respectfully submitted,

Christofeel Gerhardus Nel

Peace River Region, Alberta

Key references: IAA s.6; NSCA ss.24(4), 24(5); Morton v. Canada (Fisheries and Oceans) 2015 FC 575; Canada (Minister of Citizenship and Immigration) v. Vavilov 2019 SCC 65; Spraytech v. Hudson (Town) 2001 SCC 40; Kaatsch et al. (2008) KiKK study; COMARE 14th Report (2011); Sermage-Faure et al. (2012) GEOCAP; CNSC INFO-0799 (2010); CNSC KiKK Fact Sheet (rev. October 2025); CNSC RADICON (2013); CNSC INFO-0210/Rev.10 and Rev.13; ODWAC Report (2009). Committee email: rnnr@parl.gc.ca.