FORMAL REQUEST TO AMEND THE FINAL INTEGRATED TAILORED IMPACT STATEMENT GUIDELINES

Peace River Nuclear Power Project

IAAC Registry File No. 89430

March 2026

STRUCTURE OF THIS SUBMISSION

This submission is divided into two Parts.

Part 1 — The Foundational Error: IAAC has structured the draft TISG on the assumption that CNSC-published science constitutes settled fact. This is a legal and scientific error. Section 46 of the Impact Assessment Act confers Commission powers on the Review Panel independently of CNSC staff. The Review Panel is not bound by CNSC published conclusions and must be capable of forming its own independent scientific judgments. The draft TISG, as written, does not equip the proponent to provide the evidentiary foundation required for the Review Panel to discharge this function. Part 1 identifies this structural deficiency and specifies the mandatory amendments required to correct it.

Part 2 — Specific TISG Shortfalls: Part 2 identifies seventeen specific regulatory, scientific, and procedural requirements that are absent from the draft TISG and must be inserted into the final guidelines. Each is presented with its regulatory or statutory basis, the factual foundation, and the precise amendment sought. The amendments in Part 2 are independent of Part 1 but are reinforced by it: where a TISG requirement currently relies on CNSC-published positions that are disputed on this registry, Part 2 requires independently validated substitutes.

PART 1

THE FOUNDATIONAL ERROR:

CNSC PUBLISHED ADVOCACY TREATED AS SETTLED SCIENCE

AND THE MANDATORY CORRECTION REQUIRED

1. THE STATUTORY FRAMEWORK: REVIEW PANEL INDEPENDENCE UNDER IAA SECTION 46

The Impact Assessment Act creates an integrated assessment for nuclear designated projects through the mechanism of an integrated Review Panel. The Panel discharges both the assessment function under the IAA and the regulatory function under the Nuclear Safety and Control Act (NSCA). The statutory mechanism by which these functions are combined is section 46 of the IAA.

> *Section 46, Impact Assessment Act: "For the purpose of conducting an impact assessment of a designated project that includes activities regulated under the Nuclear Safety and Control Act, including preparing a report with respect to that impact assessment, the review panel may exercise the powers conferred on the Canadian Nuclear Safety Commission."*

Section 46 has a precise and irreducible implication: the Review Panel exercises CNSC powers independently. It is not a tribunal of review of CNSC staff conclusions. It is not bound by CNSC published science. It does not defer to CNSC positions on contested factual or scientific questions. It exercises Commission powers for itself, on the evidence before it.

The academic and legal analysis of the IAA structure is unambiguous on this point. The Review Panel is constituted to carry out impact assessments "autonomously and completely independent of the CNSC." The CNSC's role in the integrated assessment is as a technical participant — a source of expert information — not as an authority whose published positions the Review Panel must accept.

2. THE ERROR IN THE DRAFT TISG

The draft TISG is structured on a different and incorrect assumption. Its requirements are framed as if the proponent's obligation is to demonstrate conformity with CNSC regulatory standards as interpreted by CNSC staff and expressed in CNSC-published documents. The draft TISG does not acknowledge that those published documents are themselves one input into the Review Panel's independent assessment — not its evidentiary baseline.

This structural error has concrete consequences. The draft TISG does not require the proponent to provide primary peer-reviewed scientific literature supporting each material conclusion in its health risk assessment. It does not require the proponent to identify where CNSC-published positions are disputed in the peer-reviewed literature. It does not require independent expert review of the scientific foundation the proponent proposes to use. In short, the draft TISG as written would produce an

Impact Statement that a Review Panel exercising independent section 46 powers cannot use as its evidentiary foundation.

TISG STRUCTURAL DEFICIENCY

The draft TISG directs the proponent to build its Impact Statement on CNSC-published science as if those publications represent settled fact. CNSC-published science is a participant input into the Review Panel's assessment — not a binding baseline. The draft TISG must be amended to require an independently validated evidentiary foundation adequate for the Review Panel to exercise its section 46 powers.

3. THE SPECIFIC CNSC PUBLICATIONS WHERE ADVOCACY SUBSTITUTES FOR SETTLED SCIENCE

This submission has placed on the registry record documentation of seven CNSC-published documents in which the scientific presentation diverges materially from the current peer-reviewed literature. The following is a factual identification of those divergences. Each constitutes a respect in which the draft TISG — by directing the proponent to conform to CNSC standards — directs it toward a scientifically inadequate foundation.

3.1 The KiKK Study and Childhood Leukemia Near Nuclear Plants

In 2007–2008, a German government-commissioned case-control study (the KiKK study, Kaatsch et al.) reported a statistically significant odds ratio of 2.19 for childhood leukemia within 5 km of German nuclear power plants across all 16 sites over 23 years. This is the largest and methodologically strongest study of its type ever conducted. The finding has been subjected to substantial peer review internationally.

The CNSC's published KiKK fact sheet characterises the KiKK signal as "unfounded." Documentation placed on this registry in formal submissions demonstrates that the CNSC's reference list in its KiKK publications omits 19 of the 26 peer-reviewed studies in the English and German literature that address the KiKK signal — the large majority of which support the existence of the signal. The CNSC's characterisation of the signal as "unfounded" is not a finding that can be derived from the full peer-reviewed literature. It is a position derived from a selectively constituted reference set.

The Review Panel is not bound by the "unfounded" characterisation. It must evaluate the full literature. The draft TISG does not require the proponent to provide the Review Panel with that full literature.

3.2 The RADICON Radioiodine Source Term

The CNSC's RADICON model provides source term estimates for radioiodine releases from CANDU facilities under accident conditions. These estimates are used in accident consequence assessments that underpin safety determinations.

In 2017, CNSC Executive Vice-President Ramzi Jammal publicly acknowledged, in response to documented scientific criticism, that the RADICON source term for radioiodine was false. This acknowledgment is on the public record. The false source term has not been corrected in subsequently published CNSC documents. The RADICON model values therefore cannot serve as a reliable input to the Impact Statement's accident consequence assessment. Any Impact Statement built on uncorrected RADICON values provides the Review Panel with a scientifically unreliable accident consequence analysis.

3.3 The Tritium Drinking Water Guideline

The Canadian maximum acceptable concentration for tritium in drinking water is 7,000 Bq/L. In 2009, the Ontario Drinking Water Advisory Committee (ODWAC) — an independent scientific body convened by the Ontario Ministry of the Environment — reviewed the scientific evidence and recommended a 350-fold reduction to 20 Bq/L, on the basis of the differential sensitivity of pregnant women, fetuses, and infants to tritium exposure and the documented pathways by which organically bound tritium (OBT) incorporates into fetal DNA. This recommendation has not been implemented in the 17 years since it was issued.

The CNSC's published tritium fact sheet presents the 7,000 Bq/L guideline as if it reflects current scientific consensus. It does not disclose ODWAC 2009's finding that the guideline is inadequate for the most sensitive population subgroups. This is a material omission in a document that will be cited by the proponent as establishing the compliance benchmark for tritium in the Impact Statement.

3.4 The LNT Model Applied to CANDU Internal Emitter Exposure

The CNSC applies the Linear No-Threshold (LNT) dose-response model, calibrated primarily on the Life Span Study of Japanese atomic bomb survivors, to calculate incremental cancer risk from routine CANDU radionuclide releases. The model as applied involves four specific extrapolation steps that go beyond its validated domain:

- Extrapolation from acute external high-dose exposure to chronic low-dose internal emitter exposure;
- Extrapolation from a predominantly adult male survivor population to the full demographic range of a Canadian rural community, including children, pregnant women, and infants;
- Extrapolation from external gamma irradiation to chronic internal emitter exposure from CANDU-specific radionuclides, particularly HTO and OBT;
- Extrapolation from a population with no known elevated cancer baseline to the Peace Region, which has documented above-average cancer incidence of unknown etiology.

None of these four extrapolation steps are validated in the peer-reviewed literature for the specific exposure conditions created by CANDU operation. The CNSC's published health documents do not disclose these extrapolation steps or present sensitivity analyses showing the range of risk estimates that would result from alternative assumptions. A health risk assessment built on this undisclosed foundation cannot provide the Review Panel with what it requires to independently evaluate radiological health risk.

3.5 Non-Cancer Health Endpoints

The peer-reviewed literature documents six categories of health effects from chronic low-dose ionising radiation exposure beyond cancer: cardiovascular, reproductive, developmental, immunological, neurological, and non-malignant respiratory effects. These categories are documented in the scientific literature produced by radiobiological research institutions internationally, including the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR).

CNSC health impact assessments for CANDU facilities are structured to evaluate cancer as the sole quantitative health endpoint. This cancer-centric model reflects the regulatory framework as it existed in the postwar period. It does not reflect the current state of the peer-reviewed scientific literature. The draft TISG perpetuates this cancer-only scoping by not requiring the proponent to assess any other endpoint category.

3.6 The Kinlen Population Mixing Mechanism

The most persistent unresolved question in nuclear epidemiology is why childhood leukemia rates are elevated near nuclear power plants at a magnitude that exceeds predictions from current dose models. Two mechanisms have been evaluated in the literature: a radiation causation hypothesis and the Kinlen population-mixing hypothesis.

The CNSC's own published KiKK fact sheet identifies population mixing as "the most likely explanation" for the observed childhood leukemia signal near nuclear plants. Population mixing, on the Kinlen hypothesis, operates through the influx of a large mobile workforce into a small, geographically isolated, immunologically naive rural population during construction, creating conditions for a novel antigenic exposure event associated with childhood leukemia.

The Peace River project involves the largest nuclear construction workforce ever proposed in Western Canada, introduced into a small, geographically isolated rural community. The CNSC's own published position identifies precisely these conditions as the most likely explanation for nuclear-proximate childhood leukemia elevation. Yet no CNSC licensing requirement exists to assess this mechanism before construction begins. The draft TISG does not require the proponent to assess it.

4. THE MANDATORY CORRECTIONS TO THE DRAFT TISG

The six documented divergences between CNSC-published science and the peer-reviewed literature establish that the draft TISG's implicit reliance on CNSC published positions as settled science is scientifically untenable. The following amendments are required to ensure the final TISG produces an Impact Statement adequate for the Review Panel's independent section 46 function.

Amendment P1-A: Bibliographic Independence

AMENDMENT REQUIRED

The final TISG must require that the Impact Statement's health risk assessment chapter be grounded in a bibliography of peer-reviewed literature identified independently by the proponent. CNSC fact sheets, guidance documents, and previously issued regulatory conclusions may be cited as participant inputs but may not serve as the primary scientific foundation. Where a scientific question addressed in the health risk assessment is the subject of documented dispute on the IAAC registry, the Impact Statement must: (a) identify the disputed question explicitly; (b) present the full range of peer-reviewed positions; and (c) provide an assessment by an independent expert with no financial relationship to the proponent, AtkinsRéalis, the CNSC, or any body funded by nuclear industry licence fees.

Amendment P1-B: Radioiodine Source Term Validation

AMENDMENT REQUIRED

The final TISG must require that the Impact Statement's accident consequence assessment not use source term values from the CNSC's RADICON model. The proponent must disclose and independently validate the source term it proposes to use. The independent validation must be conducted by a qualified nuclear physicist with no financial relationship to the proponent or AtkinsRéalis, and the validation report must be submitted to the registry simultaneously with the Impact Statement.

Amendment P1-C: Tritium Reference Levels

AMENDMENT REQUIRED

The final TISG must require that the Impact Statement assess tritium risk at both the current Health Canada guideline (7,000 Bq/L) and the ODWAC 2009 precautionary recommendation (20 Bq/L). For each level, the Impact Statement must present health risk estimates for pregnant women, fetuses, infants, and children under five. The proponent must provide a written justification, supported by current peer-reviewed literature and independently reviewed, for whichever level it proposes as its compliance benchmark, addressing ODWAC 2009's specific finding regarding inadequate protection of the most sensitive subgroups.

Amendment P1-D: LNT Model Transparency and Sensitivity Analysis

AMENDMENT REQUIRED

The final TISG must require that the health risk assessment include a standalone section disclosing each of the four extrapolation steps applied in using the LNT model for CANDU chronic internal emitter exposure, and presenting a sensitivity analysis showing risk estimates under alternative dose-response assumptions. The sensitivity analysis must include a conservative high-end estimate, the central LNT estimate, and a BEIR VII-consistent estimate disaggregated by age and sex. The Review Panel must have sufficient information to independently evaluate the appropriateness of the model application.

Amendment P1-E: Non-Cancer Health Endpoints

Amendment P1-F: Kinlen Population Mixing Epidemiological Assessment

AMENDMENT REQUIRED

The final TISG must require an independent epidemiological assessment of whether the Peace River construction phase creates the specific conditions — large mobile workforce influx into a small, geographically isolated, immunologically naive rural population — associated with the Kinlen population-mixing mechanism. This assessment must be conducted by a qualified epidemiologist with peer-reviewed publications in radiation or infectious disease epidemiology, with no financial relationship to the proponent, AtkinsRéalis, the CNSC, or Canadian Nuclear Laboratories.

Amendment P1-G: Independent Expert Oversight

AMENDMENT REQUIRED

To support the Review Panel's independent section 46 function, the Impact Statement must be accompanied by independent technical review reports on: (a) radioiodine and tritium source terms and accident consequence modelling; (b) health risk assessment methodology and LNT model application; (c) systematic literature review on childhood leukemia and non-cancer endpoints; (d) comparative societal risk against alternative technologies under REGDOC-2.5.2 §2.2.1. Each report must be produced by an independent expert with no financial relationship to the proponent, AtkinsRéalis, the CNSC, or any nuclear industry body, and filed on the registry simultaneously with the Impact Statement.

PART 2

SPECIFIC TISG SHORTFALLS REQUIRING MANDATORY AMENDMENT

Part 2 identifies seventeen specific regulatory, scientific, and procedural requirements absent from the draft TISG, presented strongest first. Each is grounded in an identified regulatory instrument, statutory provision, or IAAC's own previously stated position. The remedies are stated in mandatory language as they constitute non-discretionary obligations.

A1

REGDOC-2.5.2 §2.2.1 — Mandatory Comparative Societal Risk Demonstration Absent

CNSC REGDOC-2.5.2, Design of Reactor Facilities (Version 2.1), §2.2.1 states: "Societal risks to life and health from reactor facility operation shall be comparable to or less than the risks of generating electricity by viable competing technologies." The word 'shall' expresses a mandatory requirement. The draft TISG does not require the proponent to provide this comparative demonstration. Without it, the Impact Statement cannot satisfy the CNSC's own primary design standard.

AMENDMENT REQUIRED

The final TISG must require a mandatory quantitative comparative societal risk assessment demonstrating that the aggregated MONARK societal risk (across all internal and external events) is comparable to or less than the societal risk of flex gas with CCS in the Alberta grid context. The assessment must use AESO data, apply REGDOC-2.4.2 PSA methodology, and be independently peer-reviewed.

A2

IAA s.22(1)(f)/(i) — Alternatives to Project and Alternative Means Not Required

The Summary of Issues raised "concerns regarding the readiness, proven track record and lack of clarity about stated outputs of the CANDU MONARK technology to be constructed and whether other technologies may be more appropriate for the Peace River region." This is a verbatim invitation by IAAC itself to require an alternatives assessment under IAA s.22(1)(f). IAAC has not translated this SOI concern into a TISG requirement. The omission is unexplained and constitutes an unjustified departure from IAAC's own stated position under Vavilov. Additionally, Energy Alberta's October 2025 partnership with Westinghouse to explore AP1000 deployment requires an "alternative means" assessment under s.22(1)(i): the TISG must address both reactor technologies.

AMENDMENT REQUIRED

The final TISG must require: (a) an "alternatives to" assessment under IAA s.22(1)(f) comparing nuclear with flex gas plus CCS, large-scale BESS, and renewable-plus-storage combinations as technically and economically feasible alternatives for the Alberta grid context; (b) an "alternative means" assessment under s.22(1)(i) comparing CANDU MONARK and AP1000 designs given the proponent's own technology pivot; and (c) the REGDOC-2.5.2 §2.2.1 quantitative risk comparison against all assessed alternatives.

A3

CANDU MONARK First-of-Kind — No Empirical PSA Safety Case Basis

The CANDU MONARK 1,000 MWe reactor has never been built or operated anywhere in the world. Its conceptual design was completed in September 2024. Preliminary engineering is targeted for 2027. The CNSC Vendor Design Review has not commenced — AtkinsRéalis is currently in a pre-planning special project to scope what a future VDR would require. CNSC REGDOC-2.4.2 requires PSA models to be validated against operating experience data. No operating experience data exists for the MONARK. The draft TISG does not require the proponent to address how a licensing-standard PSA safety case can be constructed for a reactor design with no operational history.

AMENDMENT REQUIRED

The final TISG must require the Impact Statement to address: (a) the methodology by which the proponent will validate its PSA in the absence of MONARK-specific operating data; (b) the stage of VDR completion as of the Impact Statement submission date; (c) any unresolved design issues identified in pre-licensing review. The Impact Statement must not be accepted as complete if no CNSC VDR Phase 1 summary or equivalent has been issued for the MONARK design.

A4

Wildfire-Nuclear Emergency Integration Deferred — Darlington November 2025 Precedent

The SOI identified wildfire emergency integration as a gap. The draft TISG defers emergency preparedness specifics to the Licence to Operate phase. On November 6, 2025, the CNSC issued a formal enforcement letter to Ontario Power Generation under GNSCR s.12(2) following the Darlington ‘Unified Command 2025’ emergency exercise. The CNSC found: failure to deploy Phase 1 and Phase 2 Emergency Mitigating Equipment; 4 out of 5 Portable Uninterruptable Power Supplies unavailable due to inadequate maintenance; staff lacking proficiency in EME deployment; non-compliance with REGDOC-2.10.1. Darlington has decades of operation, urban infrastructure, established evacuation routes, and full-time resident CNSC inspectors. If Darlington failed a scheduled exercise, the regulatory burden for a remote first-of-kind site in active wildfire country is substantially higher.

AMENDMENT REQUIRED

The final TISG must require: (a) a quantified wildfire hazard characterisation using current Alberta wildfire risk mapping; (b) a site-specific emergency preparedness plan demonstrating REGDOC-2.10.1 compliance without established municipal infrastructure; (c) an integrated wildfire-nuclear simultaneous-event scenario analysis; (d) a comparative baseline acknowledging the Darlington November 2025 exercise failures. Emergency preparedness adequacy must be demonstrated for site evaluation and construction licence stages, not deferred to the operating licence.

A5

Pre-Existing Elevated Cancer Baseline Invalidates Incremental Risk Methodology

Standard incremental risk assessment methodology requires a characterised baseline against which incremental risk is measured. The Peace Region has documented above-average cancer incidence of unknown etiology. No epidemiological study has characterised the cause of this elevated baseline. The TISG requires a human health risk assessment but not an independent epidemiological baseline study. An incremental risk finding calculated against an

uncharacterised elevated baseline is scientifically invalid: the increment cannot be meaningfully added to a baseline that is itself an unknown.

AMENDMENT REQUIRED

The final TISG must require that an independent epidemiological baseline study of Peace Region cancer incidence be completed and peer-reviewed before the Impact Statement's health risk chapter is submitted. The study must characterise incidence by type, geography, and demographic group; evaluate potential industrial and environmental causes; and assess whether the existing elevated rate is consistent with known radiological exposure profiles. The Impact Statement health chapter must not be accepted without this baseline.

A6

NWT Transboundary Agreement Excluded from Geographic Scope — Formal Government Objection on Record

On July 23, 2025, the Government of the Northwest Territories submitted a formal letter to IAAC stating that the draft TISG ignores the Alberta-NWT transboundary water agreement and that "excluding locations downstream of the NWT-Alberta border from the geographic scope of the Project will mean that transboundary impacts may not be considered, resulting in an incomplete assessment." The 1997 Mackenzie River Basin Transboundary Waters Master Agreement commits all six jurisdictions to cooperative management of the entire basin. The Peace River flows to the Slave River, to Great Slave Lake, to the Mackenzie River system — the largest river draining into the Arctic from North America, within whose basin multiple NWT First Nations exercise Treaty and constitutional rights.

AMENDMENT REQUIRED

The final TISG must extend the aquatic pathway study area to the NWT border for both routine operation and accident consequence assessments. It must require engagement with NWT Indigenous governments as potentially affected parties. It must require accident consequence modelling of radiological transport through the Peace-Slave-Mackenzie system, including worst-case scenarios for tritium and accident-release radionuclides. The NWT government's formal objection must be addressed on the record, not silently disregarded.

A7

CANDU Tritium Production Orders of Magnitude Higher Than PWR — Food Chain Pathway Not Required

CANDU pressurised heavy water reactors produce tritium orders of magnitude higher than light water reactors of equivalent output — confirmed in peer-reviewed literature and CNSC's own operational data (Darlington produces approximately 130 grams of tritium per unit per year). The MONARK is a CANDU-class reactor. Tritium air emissions from CANDU facilities enter the food chain through atomic exchange with hydrogen in all biota, including crops, livestock, and humans, within the study area. Organically bound tritium (OBT) has a biological residence time 20-50 times longer than tritiated water and accumulates near DNA. The draft TISG does not require a food-chain tritium pathway assessment or OBT accumulation modelling, despite the CANDU's structurally elevated tritium output relative to all alternative reactor technologies.

AMENDMENT REQUIRED

The final TISG must require: (a) a comparative analysis of MONARK tritium production and environmental release against LWR alternatives as part of the REGDOC-2.5.2 comparative assessment; (b) a food-chain tritium pathway assessment covering crops, livestock, surface water, and drinking water within a defined study area; (c) an OBT accumulation assessment specific to the Peace Region agricultural and boreal food chain.

A8

Technology Identity Drift — AP1000 Partnership Renders MONARK-Based TISG Potentially Void

On October 21, 2025, Energy Alberta announced a formal partnership with Westinghouse to explore AP1000 deployment at the Peace River site. The AP1000 is a fundamentally different reactor design from the CANDU MONARK: different coolant and moderator system, different fuel cycle, different safety systems, different PSA structure, different tritium output profile, different vendor design review history, and different emergency planning zone methodology. The draft TISG was written entirely around the CANDU MONARK. If Energy Alberta submits an Impact Statement for an AP1000 or a dual-technology assessment, the TISG requirements as drafted are inadequate for that design.

AMENDMENT REQUIRED

The final TISG must either: (a) lock the technology to CANDU MONARK and require any technology change to trigger a new TISG process with a new public comment period; or (b) require the proponent to demonstrate that all TISG requirements have been addressed for both technologies to the same standard before the Impact Statement is accepted. The proponent must confirm in writing, at Impact Statement submission, which reactor technology is proposed and demonstrate that all TISG requirements address that specific technology.

A9

Induced Seismicity from Montney/Harmon Valley Fracking Operations Not Characterised

The SOI specifically identified “increased seismicity/earthquakes in the adjacent Harmon Valley which correlates with uplift in oil and gas fracking operations” as a matter of concern. The Montney Formation is one of the most actively fracked geological formations in Canada, with production areas directly adjacent to the proposed site. Unlike natural seismicity, induced seismicity from ongoing industrial operations is not a fixed parameter: it may increase over the facility’s 70-year life as fracking activity intensifies. The draft TISG addresses seismicity generically under site evaluation criteria but does not require the proponent to characterise induced seismicity as a separate and ongoing external hazard.

AMENDMENT REQUIRED

The final TISG must require the proponent to characterise induced seismicity as a separate hazard category from natural seismicity, using a probabilistic model accounting for projected Montney production volumes over the full 70-year facility lifespan, with a sensitivity analysis for worst-case fracking-induced ground acceleration scenarios. The model must account for the dynamic and operator-uncontrolled nature of the induced seismicity source.

A10

70-Year Climate-Adjusted Hydrology for Cooling Water Supply Not Required

The SOI identified future changes to Peace River water quality and quantity from warming temperatures and reduced flows from key tributaries as a concern. A CANDU MONARK facility requires large, continuous volumes of cooling water. The draft TISG requires a baseline water characterisation but does not require the proponent to demonstrate that cooling water supply remains adequate under projected 70-year climate scenarios. This is a site suitability question under REGDOC-1.1.1, not merely an environmental effects question: if the hydrological basis for site suitability changes materially over the facility's life, the LTPS site evaluation is invalidated.

AMENDMENT REQUIRED

The final TISG must require a 70-year climate-adjusted hydrology model demonstrating that cooling water supply remains adequate under the full range of IPCC scenario projections for the Peace River watershed, with specified minimum flow conditions that would trigger mandatory operational curtailment.

A11

Nuclear Liability Cap vs. Actual Severe Accident Economic Loss Not Disclosed

The Nuclear Liability and Compensation Act caps operator liability at $1 billion for a nuclear incident. The actual economic loss from a severe accident at a 4,800 MWe facility connected to the Peace-Athabasca-Mackenzie drainage system — affecting agricultural land, Treaty territories, and the NWT watershed — would likely far exceed $1 billion. Fukushima total economic costs exceeded $200 billion USD. Chernobyl decontamination exceeded $700 billion over three decades. The draft TISG does not require the proponent to quantify the gap between worst-case accident economic loss and the NLCA cap, or to disclose the residual public liability burden.

AMENDMENT REQUIRED

The final TISG must require the Impact Statement to include: (a) a worst-case severe accident economic loss estimate for the Peace River site and its transboundary watershed; (b) explicit disclosure of the gap between that estimate and the $1 billion NLCA liability cap; (c) identification of the residual uninsured liability burden on the public, Indigenous rights holders, and the federal and provincial governments.

A12

IAA s.63 Public Interest — All Adverse Health Effects Must Be Quantified and Weighed

Under IAA s.63, the Minister cannot approve a designated project unless the Review Panel is satisfied that adverse effects in federal jurisdiction are in the public interest. Demonstrating regulatory compliance with dose limits does not discharge the s.63 public interest obligation: it is a broader weighing that explicitly includes health effects, Indigenous rights, and cumulative effects. The draft TISG does not require the proponent to identify and quantify all adverse health effects as inputs into a s.63 public interest analysis. The proponent cannot discharge s.63 through cost-qualification or dose compliance alone.

AMENDMENT REQUIRED

The final TISG must require a standalone chapter identifying every category of adverse health effect from the project, providing a quantum estimate for each using the best available science, and presenting a public interest analysis structured to address the s.63 weighing requirement explicitly. This chapter must address radiological cancer risk, non-cancer health endpoints, mental health and community wellbeing, and cumulative effects on the Peace Region population.

A13

Decommissioning Financial Assurance — Private Company, No Track Record, 70-Year Liability

Energy Alberta is a newly formed private company. CNSC REGDOC-3.3.1 requires financial guarantees sufficient to cover decommissioning costs for the full licensed life of the facility. Decommissioning costs for large Canadian nuclear stations are in the billions: Pickering decommissioning is estimated at $12.8 billion CAD. The Peace River site is remote, first-of-kind, and has no established decommissioning cost benchmark. The draft TISG does not require the proponent to demonstrate that an adequate decommissioning fund or financial instrument exists or has been committed. If the company fails commercially before decommissioning is complete, the residual liability falls on the public.

AMENDMENT REQUIRED

The final TISG must require the Impact Statement to include a decommissioning financial assurance chapter disclosing: (a) the estimated decommissioning cost for the specific facility; (b) the financial instrument proposed; (c) the proponent's financial capacity to fund that instrument given its corporate structure; (d) the government backstop arrangement in the event of proponent insolvency. This chapter must be reviewed by an independent financial analyst.

A14

AESO Grid Integration — No Connection Process Initiated, No Transmission NID Filed

No AESO System Access Service Request has been submitted for the Peace River project. No Needs Identification Document has been filed for the transmission infrastructure required to export up to 4,800 MWe from a remote northern site to Alberta's major load centres. The AESO's own reliability roadmap identifies low system strength and flexibility challenges as growing concerns, particularly in regions distant from load centres. Adding 4,800 MW of nuclear baseload at a remote injection point could itself create significant system strength problems on the Alberta grid.

AMENDMENT REQUIRED

The final TISG must require the proponent to demonstrate that AESO connection at the required capacity is technically feasible and to provide: (a) a transmission infrastructure assessment identifying required upgrades; (b) an estimated transmission cost and timeline; (c) an AESO-reviewed grid integration analysis of injecting up to 4,800 MW at the proposed remote location.

A15

Radioactive Waste — Interim On-Site Storage Without Licensed Permanent Pathway

Canada's deep geological repository entered its regulatory review phase in January 2026 following the NWMO's Initial Project Description submission. It will not be operational until the 2040s at the earliest. A second repository for intermediate and high-level non-fuel waste has no proposed site. The draft TISG requires a waste management plan but does not require the proponent to assess the scenario where on-site interim storage at Peace River extends for decades beyond the facility's operational life, or to address UNDRIP Article 29.2 obligations regarding waste storage on Indigenous territory.

AMENDMENT REQUIRED

The final TISG must require the Impact Statement to address: (a) the scenario where licensed permanent disposal pathways are not available for the full inventory of waste generated over the facility's life; (b) the management plan for interim on-site storage extending beyond the facility's operational life; (c) the FPIC requirements applicable to interim waste storage on or near Indigenous territory under UNDRIP Article 29.2.

A16

GBA+ Not Integrated into Radiological Risk Assessment

The draft TISG includes a Gender-Based Analysis Plus (GBA+) requirement at §1.3. GBA+ is not integrated into the health risk assessment chapter. The peer-reviewed literature is clear that women, girls, pregnant women, and fetuses face materially higher radiation-induced health risks per unit dose than the adult male reference person on whom the LNT dose-response model is calibrated. A health risk assessment that presents aggregate population risk without GBA+ disaggregation does not discharge the GBA+ obligation the TISG itself acknowledges.

AMENDMENT REQUIRED

The final TISG must require that the health risk assessment present all material risk estimates disaggregated by sex, age cohort, and pregnancy status. The assessment must specifically address differential radiation sensitivity for the most vulnerable subgroups in the Peace Region population and must not rely solely on aggregate population risk figures.

A17

CANDU Positive Void Coefficient — Site-Specific EPZ Sizing for CANDU Accident Sequences Not Required

CANDU reactors exhibit a positive coolant void coefficient of reactivity under certain conditions, meaning a loss-of-coolant event can cause a transient power increase before shutdown systems engage. This design characteristic is well-documented in the peer-reviewed nuclear engineering literature and distinguishes CANDU from most PWR designs. The 1952 Chalk River NRX accident — the world's first reactor meltdown — occurred at a CANDU-lineage reactor. The draft TISG does not require the proponent to size and justify the Emergency Planning Zone specifically for worst-case CANDU MONARK accident sequences, including loss-of-coolant with delayed shutdown, at a remote site with no established emergency infrastructure.

AMENDMENT REQUIRED

The final TISG must require the proponent to size and justify the EPZ specifically for the worst-case CANDU MONARK accident sequences under the site-specific conditions at Peace River, including loss-of-coolant scenarios with the positive void coefficient, and to demonstrate that the EPZ can be operationally implemented at a remote site without municipal emergency infrastructure.

CONCLUSION

The draft Integrated Tailored Impact Statement Guidelines for the Peace River Nuclear Power Project contains two categories of deficiency that must be remedied in the final guidelines.

The first category is structural. The draft TISG is premised on the assumption that CNSC-published science constitutes a settled evidentiary baseline. This premise is inconsistent with section 46 of the Impact Assessment Act, which confers Commission powers on the Review Panel for purposes of this assessment and requires the Review Panel to form its own independent scientific judgments. The six amendments in Part 1 are directed at ensuring the Impact Statement provides a scientifically independent evidentiary foundation adequate for the Review Panel's lawful section 46 function.

The second category is specific. The seventeen amendments in Part 2 identify discrete regulatory, scientific, and procedural requirements that are absent from the draft TISG and must be included in the final guidelines. Each is grounded in an identified mandatory regulatory instrument, statutory provision, or IAAC's own previously stated position. Each constitutes a matter that, if absent from the final TISG, will produce an Impact Statement that cannot support a lawful public interest determination under IAA s.63.

This submission requests that IAAC: (a) acknowledge the section 46 structural issue and amend the final TISG accordingly; (b) insert each of the seventeen specific amendments in Part 2 into the final guidelines; and (c) post this submission and any response to it on the IAAC registry as part of the formal record for the Peace River Nuclear Power Project assessment.

Regulatory instruments cited: Impact Assessment Act SC 2019, c.28, s.1 (ss.22, 46, 63); Nuclear Safety and Control Act SC 1997, c.9; CNSC REGDOC-2.5.2 v2.1 (Design of Reactor Facilities); CNSC REGDOC-2.4.2 (Probabilistic Safety Assessment); CNSC REGDOC-2.10.1 v2 (Emergency Preparedness); CNSC REGDOC-1.1.1 v1.2 (Site Evaluation); CNSC REGDOC-3.3.1 (Financial Guarantees); Nuclear Liability and Compensation Act SC 2015, c.4; Mackenzie River Basin Transboundary Waters Master Agreement 1997; Canada (Minister of Citizenship and Immigration) v. Vavilov, 2019 SCC 65; Ontario Drinking Water Advisory Committee Report on Tritium, 2009; CNSC-IAAC Memorandum of Understanding on Integrated Impact Assessments, 2019; CNSC DPRR Joint Audit 2025; CNSC Enforcement Letter to OPG re Darlington Unified Command 2025 (November 6, 2025).