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Written submission from the Port Hope Community Health Concerns Committee

In the Matter of

Application to consider a 1-year licence renewal from Cameco Corporation (Cameco) for its Cameco Fuel Manufacturing Inc. (CFM) facility

Public Hearing - Hearing in writing based on written submissions

December 2021

Mémoire du Port Hope Community Health Concerns Committee

À l'égard de

Demande de renouvellement de permis d'un an, présentée par Cameco Corporation (Cameco) pour son installation de Cameco Fuel Manufacturing Inc

Audience Publique - Audience fondée sur des mémoires

Décembre 2021

Canada

Port Hope Community Health
Concerns Committee

P.O. Box 62, L1A 3V6

November 16, 2021

Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046, Station B
Ottawa, ON K1P 5S9

Dear Chair Velshi and Commissioners:

Re: Re-license Application for Cameco Fuel Manufacturing Inc. Port Hope

The Port Hope Community Health Concerns Committee submits the following information for consideration in the matter of re-licensing this facility;

- PHCHCC Intervention for the previous re-licensing hearing in 2011 for consideration of the issues raised and information provided at that time which are important and still relevant today;

- Further concerns raised below in this letter.

1. **Recommendation to CNSC:**

That CNSC require Cameco to develop a detailed decommission plan with the necessary financial guarantees and approvals and fully decommission this facility within 2 years, by 2024.
That the current CFM site and all surrounding areas be remediated for contamination at Cameco's expense, not the taxpayers, and restored to unfettered use by the people of Port Hope.

2. **WSIB Claim and Appeals by Dan Rudka**

One of our board members, Dan Rudka, is a former nuclear energy worker at Zircatec Precision Industries, now Cameco Fuel Manufacturing facility. Dan sustained serious injuries as a result of poisoning by uranium including 236U (the isotopic signature of

recycled nuclear reactor fuel contaminating uranium in Port Hope) and possibly other toxic materials in the workplace over a very short period of employment in 1993/94.

Dan has detailed his experiences in the hope that he would one day receive justice. Over the many years, and in ill health which required a double lung transplant, he has made many requests for help - in interventions to CNSC, to his former employer, union, an array of health officials, and to Ontario's Workplace Safety and Insurance Board, all to no avail thus far. He is a persistent fighter and has another appeal scheduled with the WSIB soon with Cameco opposing him, once again. The CNSC should ask why - why is Cameco fighting repeatedly against recognizing harm caused to one of its employees- and you should intervene for Cameco to acknowledge harm done and finally agree to a favourable resolution for Dan.

3. Financial Guarantee for Decommissioning of Cameco Fuel Manufacturing Inc.

The decision by CNSC Chair Binder, acting as sole decision-maker, dated November 17, 2017 accepted a financial guarantee from Cameco of $21 million to fully decommission the Port Hope CFM site. This financial guarantee is insufficient and CNSC must require that it be reviewed and updated as soon as possible. This operation is located very close to an elementary school, railway line, Lake Ontario, beside a busy major highway and right beside a home for people with disabilities as you can see from Cameco's photo in their submission - it is the brown building on the left side. CFM has virtually no meaningful security nor does it provide any for the people of Port Hope from its risks with its central location in a neighbourhood. This facility is aging, has fugitive emissions not documented and should be decommissioned as soon as possible for the community's health and security. For CNSC Commissioners and staff to claim, as they do, no role in the siting of a nuclear facility when it poses such risks, is hypocritical to then claim that public and worker health and safety are your primary mandate.
No Commissioners - it cannot be both, It is past time for you, the regulator, to do your job and correct what is a historical mistake with the siting of this dangerous industry in the middle of our town without any buffer zone whatsoever.

4. Citizens Against Radioactive Neighbourhoods (CARN) and PHCHCC Questions

In a recent email to CNSC staff on Tuesday, October 26, 2021, Peter Harris of CARN and Faye More of PHCHCC wrote of their concerns regarding stockpiling of uranium at facilities in Canada with particular concerns for the nuclear facilities that are located

right in the hearts of their communities. The email is titled “speculative uranium”. Mr. Harris has filed an intervention with details on these concerns and we encourage Commissioners to address the important questions and concerns raised in this regard. The role of the CNSC should first and foremost be to protect the public and the workers who are at risk every day and it should regulate accordingly.

Submitted on behalf of the Port Hope Community Health Concerns Committee by

Faye More
Chair, November 16. 2021

PORT HOPE COMMUNITY HEALTH CONCERNS COMMITTEE
Box 476 Station Main • Port Hope, Ontario, Canada • L1A 3Z3
info@porthopehealthconcerns.com

Canadian Nuclear Safety Commission December 19, 2011

Dear Mr. Binder and Commissioners:

Re: Cameco Fuel Manufacturing Inc. in Port Hope, Ontario

The Port Hope Community Health Concerns Committee is submitting the following comments and recommendations to the Commission on the above noted matter.

> ***"For a given uranium intake the inhalation pathway gives doses 200 times greater than ingestion" - Ontario MOE Rationale Document, Draft Uranium in Air Standard, 2010***

Recommendations:

1. A two year license be issued to Cameco Corporation with the condition that within this two year time period, Cameco Corporation will prepare and submit a plan to the CNSC, the municipality and the public to fully decommission all of its sites within the boundaries of the community of Port Hope.
2. Decommissioning , including removal of all wastes and full restoration of all lands, to be completed by 2017.
3. Cameco's Vision 2010 project and the proposed investment of millions of dollars into the current sites, be halted and a new Environmental Assessment be ordered for the decommissioning and restoration process when the plan is received.

Rationale for Recommendations

Construction of a new designated Nuclear Facility at the current Cameco locations in Port Hope would simply not be permitted under current environmental legislation and community standards. The ongoing licensing of Cameco facilities is an exercise in CNSC continuing to grandfather and perpetuate what was a historical mistake and is today, unacceptable operating circumstances for this industry. It should be acknowledged as such now and a decision made to bring it to an end.

It is clear to us that many unresolved concerns raised by citizens over the years will only be addressed by the relocation of this industry away from our town, with a suitable buffer zone. We wish to add however, that the frightening , sad events at the Fukishima plant in Japan have alerted countries around the world to the global risks and lasting legacy of human and environmental contamination created by the nuclear fuel cycle. It is time for the future of the nuclear industry in Canada to be thoroughly debated and the future decided by means of a broad public inquiry and referendum in the very near future.

Summary of ongoing concerns

1. *No buffer zone:* As the pictures in Cameco's presentations clearly show, there are no buffer zones for any of the three Cameco sites within the town. They operate in neighbourhoods, beside outdoor recreational facilities, completely dominate our waterfront, presenting health and safety risks and severely restricting safe use and enjoyment of public areas.

2. *Cleaning up*: The community is facing a mulit-year, $300 million cleanup of historic and current radioactive wastes from this industry which will subject the population to increased uranium and other contaminants in air for years and will still leave us with contaminated soils due to the cleanup scope and criteria. It is contradictory and counter-productive to continue the Cameco operation which contributes measurable contaminants to our environment on a daily basis.

3. *Power lies elsewhere:* The public, including the municipal government, plays no meaningful role in regulating this industry although there is much busywork made to distract us from that fact. Decisions are always made out of our town, in Saskatchewan, at Cameco headquarters, and Ottawa, at the CNSC and Natural Resources Canada. There is a worrying trend to decreasing involvement with five and ten year licenses rather than the previous two years. For example, public participation was not invited by the CNSC at the Cameco mid-term review in 2009 despite its commitment to do so when the five year license was approved in 2006.

4. *No independent environmental monitoring*: There is no regular independent monitoring of Cameco's emissions and our environment and public reporting by bodies such as the Ontario Ministry of the Environment. Cameco essentially monitors and reports on itself. For example, it creates questions that Cameco's reporting of uranium in soil accumulation is at odds with findings of the Ontario MOE several years ago and the CNSC staff's remarks at a prior hearing, that uranium emissions were in fact accumulating in the soils of Port Hope. Further, the uranium emissions from the facility are more than 60% fugitive. Cameco is unable to commit to zero emissions in the near future. The actual level of uranium emissions should be verified by the Ontario MOE on a regular basis along with vegetation and water impacts.

5. *No neutron radiation monitoring and reporting*: Cameco and CNSC agree in the re-licensing documents with the findings of citizens in 2006 that neutron radiation is emitted from UF6

cylinders but has decided that it will not be included in exposure calculations and therefore, is not counted in doses received by employees or the public. This is unacceptable practice and appears to be the As Low As Reasonably Achievable (ALARA) principle applied to save the industry money it would have to invest for proper neutron detection equipment. Dose calculations for nuclear workers have recently been admitted to be wrong by federal officials which underscores the guesswork involved at the best of times especially for internal doses and impacts at the cellular/organ level. Since calculations for employee compensation are based on dose, they cannot be fairly treated by the current methods.

6. *Health effects*: Despite the health risks to our community from exposures to contaminants as well as previous health studies showing inhaled, insoluble uranium in a small sample of both workers and the public, and elevated rates of cancers, neurological, cardiovascular and respiratory diseases, the CNSC has stated that no further health studies or ongoing health monitoring is necessary for the people who live here. This position is indefensible in the face of existing study evidence and the daily exposures, and yet the decision stands because it can - the power is not with the people. Eliminating a major risk, Cameco, from our midst is one way to try to prevent further damage. We will continue to seek the full range of health studies that were promised but never done.

7. *Transportation of hazardous material:* Hazardous material such as fluoride, hydrogen fluoride and uranium travel in and out of our community in various forms. Trucks travel regularly through the streets of Port Hope on their way to the highways with cylinders of Cameco's UO2 and UF6 product that emit gamma and neutron radiation. There are ongoing individual public exposures from these cylinders. There is only one road entrance and exit to the facility which is also used by the public and employees. A more detailed description of our concerns is in the following Background section.

8. *Inadequate emergency measures:* Cameco and Port Hope are not listed as part of the Ontario Provincial Nuclear Emergency Response Plan despite Cameco being designated a nuclear facility by CNSC. It is completely unacceptable and mystifying that the significant resources quickly brought to help in a nuclear emergency by many Ontario ministries at nuclear reactor sites will not happen here automatically. Our Committee raised the concern ten years ago that we should be under the provincial umbrella of nuclear response and yet today, the emergency response will be only local municipal and Cameco personnel, placed in great danger and expected to cope. There are greater security risks to nuclear facilities following 9/11 for which we require adequate protection.

9. *Unidentified industry materials:* Despite acknowledging at previous hearings that 236U is present in some of the material at Cameco due to use of some recycled materials such as depleted uranium contaminated with high level transuranics, CNSC and Cameco still apparently do not test the isotopic content of the uranium used at Cameco currently, or found in the products and wastes. It is also not part of the urinalysis testing of employees. Further, CNSC has approved enriched uranium present at two of the sites in Port Hope without identification in the re-licensing documents as to quantity, level of enrichment, the process it is undergoing and the products, all of which have impacts including on the issues of security, criticality and dose, both external and internal when inhaled. That this is occurring in flood risk areas is also a serious

concern. The metals plant is also licensed and it is not clear from materials when it was last in operation and if not now, if it will be in the near future.

Further Considerations

1. **Dangerous Transportation of Radioactive Materials on Roadways, Lake Ontario and the St. Lawrence Seaway**

Excerpt from PHCHCC intervention to CNSC 2010 re Bruce Nuclear Transportation of Radioactive Steam Generators to Sweden

"The Port Hope Community Health Concerns Committee has previously brought to your attention in CNSC hearing interventions, our deep concern regarding the regular transport of uranium hexafluoride (UF6) cylinders through our town streets. We brought to the attention of the CNSC and Cameco, that these cylinders were tested independently in a public area and measurable levels of neutron and gamma radiation were recorded. This fact is known and confirmed by CNSC and Cameco, by testing and science, yet the trucks are still permitted to travel from the Cameco plant down the only road out from the west beach area and through our town streets. The trucks and cylinders pass beside unsuspecting children on bicycles, pedestrians and motorists in town until they go onto the main highways and continue to mingle with the public all the way to their destinations. This is a completely unacceptable situation and should be unacceptable to you as the regulator of radioactive material and public exposures. There is buck passing of responsibility but no actual accountability or change to protect the public.

Further, Commissioners should be aware that excerpts from documents released under Access to Information by Transport Canada confirm that in 2005, 156 cylinders of radioactive Uranium Hexafluoride (UF6) (approved for depleted, natural and enriched UF6) from Cameco Corporation in Port Hope, Ontario were to be transported to Oshawa, loaded at Oshawa harbour onto a vessel and transported to Rotterdam through Lake Ontario and the St. Lawrence Seaway. Documents indicate that this happens several times a year. Dockings at Port Hope apparently also occur on occasion. In these documents Transport Canada states that shipments of radioactive dangerous goods are routine and standard on the Great Lakes St. Lawrence Seaway system.

Many questions arise from review of these documents. For example, it was concerning to read that the European Union requires special blanketing of the cylinders as a protective measure apparently to prevent overheating of the UF6, but Canada does not. Why not? Is the blanketing also a measure to help reduce radiation exposures and of so, should these not be applied immediately in Port Hope. What other measures are possible to protect the public?

Also, nowhere in the documents was there mention of the high levels of neutron radiation emitted from full UF6 cylinders. The full nature of this material and its potential hazards are critical for a crew to understand, particularly with this quantity on a long voyage and this was disturbingly missing from the material we reviewed."

2. **The United States Dept. Of Justice recognizes diseases caused by ionizing radiation and compensates energy employees, military personnel, community down-winders. Why not Canada?**

: "Ionizing radiation is invisible, high frequency radiation that can damage the DNA or genes inside the body" – US Dept. of Health and Human Services

…"There is no level below which we can say an exposure poses no risk…radiation is a carcinogen. It may also cause other adverse health effects, including genetic defects in children of exposed parents or mental retardation in the children of mothers exposed during pregnancy" - US Environmental Protection Agency.

As of 2009, the US government had paid more than $4 billion in compensation to military personnel, community downwinders, and nuclear energy employees for a long list of cancers and other diseases under its legislation in point #4 and below:

Excerpt from the September 2001 United States General Accounting Office Report to Congress: Radiation Exposure Compensation – Analysis of Justice's Program Administration GAO-01-1043 Radiation Exposure Compensation

> "RECA (Radiation Exposure Compensation Act) establishes a procedure to make partial restitution to individuals who contracted serious diseases, such as certain types of cancers, presumably resulting from their exposure to radiation from aboveground nuclear tests or as a result of their employment in uranium mines. The law established three claimant categories—uranium mine employees (those who worked in underground uranium mines in certain specified states), downwinders (those who were downwind from aboveground nuclear weapons tests conducted at the Nevada test sites), and onsite participants (those who actually participated onsite in aboveground nuclear weapons tests)....
>
> In addition to RECA, other programs provide compensation to persons who have presumably become ill as a result of working for the federal government in producing or testing nuclear weapons. For example, the Radiation-Exposed Veterans Compensation Act of 1988, in general, provides monthly compensation to veterans who were present at certain atomic bomb exercises, served at Hiroshima and Nagasaki during the post World War II occupation of Japan, or were prisoners of war in Japan.9 In addition, on October 30, 2000, the President signed into law The Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001.10 Title XXXVI of this act establishes the "Energy Employees Occupational Illness Compensation Program" to, in general, compensate covered employees who contracted certain illnesses resulting from exposure to certain ultra-hazardous materials during employment in Department of Energy facilities that processed or produced radioactive materials used in the production of atomic weapons. Certain uranium employees who are eligible for compensation under RECA may also be eligible for additional compensation and medical benefits under title XXXVI.

3. **Radiation Disasters and Children**
    - **Excerpt from: American Academy of Paediatrics, November, 2008**

Radiation Biology

Radiation exposure can be divided into external, internal, whole body, or partial body. Internal irradiation can occur after inhalation of a radioactive gas or ingestion of contaminated food (including produce, grains, and milk from goats or cows that have been grazing on contaminated fields). Radiation effects can be direct, interacting with target tissues; or indirect, producing free radicals or other harmful molecules. The cellular effects of radiation are highly variable, correlating directly with the cell's typical rate of division and inversely with the extent of cell differentiation. The sensitivity of tissues to radiation, from most to least, is: lymphoid, gastrointestinal, reproductive dermal, bone marrow, nervous system. Ionizing radiation produces chromosome breaks in a variety of somatic cells; these breaks can persist for decades after exposure and may account for increased rates of cancer after irradiation. Other significant modulators of cellular injury after radiation exposure include dose, type of radiation, and age of the exposed person."

Vulnerabilities in Children

Children have a number of vulnerabilities that place them at greater risk of harm after radiation exposure. Because they have a relatively greater minute ventilation compared with adults, children are likely to have greater exposure to radioactive gases (eg, those emitted from a nuclear power plant disaster). Nuclear fallout quickly settles to the ground, resulting in a higher concentration of radioactive material in the space where children most commonly live and breathe. Studies of airborne pollutants are needed to test the long-held belief that the short stature of children brings them into greater contact than adults with fallout as it settles to earth. Radioactive iodine is transmitted to human breast milk, contaminating this valuable source of nutrition to infants. Cow milk, a staple in the diet of most children, can also be quickly contaminated if radioactive material settles onto grazing areas. In utero exposure to radiation also has important clinical effects, depending on the dose and form of the radiation; transmission of radionuclides across the placenta may occur, depending on the agent. After exposures to external radiation, fetal doses of 0.60 Sv (60 rem) have produced small head size and mental retardation (in Japanese atomic bomb survivors), when exposures occurred between 8 and 25 weeks of gestational age.2 A dose-response effect was found in the occurrence of small head size without mental retardation, which occurred in foetuses exposed to _0.2 Sv (_20 rem) between weeks 4 and 17 of gestation. Radiation-induced cancers occur more often in children than in adults exposed to the same dose. Finally, children also have mental health vulnerabilities after any type of disaster, with a greater risk of long-term behavioral disturbances.

4. **Canadian Employees and Community Residents Inhale Radioactive Emissions from Nuclear Facilities - Port Hope Radio-Biological Test Results, November 2007 (UMRC-PHCHCC joint project)**

From 2005 to 2007 the PHCHCC fundraised over $11,000 to pay for the laboratory costs for this project which is the first time radioactive materials have been identified and measured in the bodies of Port Hope civilians. The scientific and medical expertise of the Uranium Medical Research Centre was donated. The November, 2007 report of the Uranium Medical Research Centre on radio-biological testing of 9 Port Hope subjects (4 former Port Hope nuclear industry workers) and 2 controls from outside the area was peer-reviewed at the European Association of Nuclear Medicine in Denmark, October 2007. A copy is attached along with the curriculum vitae of Dr. Asaf Durakovic.

The study stated the following findings:

1. Chronic, long-term uranium contamination. Workers bodies releasing industrial and Depleted Uranium 23, 17 and 11 years since exposure.
2. Unexplained contamination by a man-made isotope 236U (Uranium 236) – a waste and spent fuel product of nuclear reactors.
3. Enriched levels of the 234U isotope in both retired workers and civilian Port Hope subjects, including a child.
4. A worker releasing Depleted Uranium >23 years since exposure – patient history refers to Eldorado Nuclear extruding DU metal rods for US weapons in 1980's.
5. One adult subject's uranium elevations 8 X's over average concentrations of the study's controls.
6. A child with uranium elevations ≈3 X's the controls' average concentrations of Uranium.
7. Exposure history, types of uranium and medical problems indicate contamination by inhalation.
8. Signatures of the uranium isotopes suggest exposure to recycled and blended uranium.
9. No health, radiological or industry reports identify the radioactive materials found to be in the bodies of the study subjects.
10. CNSC approved radiation protection standards (civilian and worker) do not include exposure to the toxic materials identified.
11. Control subjects <u>do not show</u> the contaminants or characteristics of the Port Hope subjects.

5. **Elevated Disease Trends for Port Hope Not Recognized by CNSC, Comprehensive Health Studies Never Done**

<u>Port Hope Harbour Area of Concern: Health Data and Statistics for the Population of the Region (1986-1992), Great Lakes Health Effects Program, Health Canada. November 1998</u>

CNSC and Health Canada's position is that this is another study that does not show any health effects in Port Hope from past or present exposure to radiation. This is not an accurate description of the study findings. The data in this report showed selected causes of death 1986-92 significantly higher than Ontario in the Port Hope area included: genetic, neurological, multiple sclerosis, Parkinson's disease, cardiovascular and respiratory diseases, and eleven cancers. Environmental contaminants were one of the possible causes described in the report.

<u>Cancer Incidence Study (Health Canada/CNSC, 2000), Cancer and General Mortality Study (Health Canada/CNSC, 2002</u>

Why does the Government of Canada recognize only leukemia, lung, breast and thyroid as sentinel cancers associated with ionizing radiation when analyzing Port Hope disease data and yet the U.S. Veteran's Administration and the U.S. Dept. of Justice recognize almost ten times as many to be associated with radiation exposure and provide compensation to Atomic Veterans, nuclear workers and community down-winders exposed to radiation?

The elevated disease rates for Port Hope contained in these two high level reports, have been consistently dismissed or ignored by Health Canada and the CNSC from the time the reports were publicly released. In his paper released in Port Hope in November, 2007, Dr. Jack Cornett, Health Canada, said about the findings of these two studies "that the cancer patterns in the Port Hope community were no different from similar communities in Ontario and patterns for Port Hope did not differ from other Ontario communities".

This is not factually correct. Independent analysis of the two federal reports and the data contained was done in February 2004 by Dr. Eric Mintz, epidemiologist. His two reports identify significant elevated disease rates for Port Hope when compared to the Ontario provincial average. These data were contained in tables at the backs of the federal reports and the same data were used in the text of the federal analysis.

Dr. Mintz reviewed these reports for the Atomic Energy Control Board (for the 2000 report he did so as a peer reviewer under contract with the AECB; for the 2002 report the CNSC declined to provide funding to him for peer review so the Committee made independent arrangements)/Canadian Nuclear Safety Commission and our Committee, said, among other important comments, that "the patterns of several cancer rates…are consistent with environmental contamination" and "…along with the brain cancer, colon cancer and some of the rare cancer results, the available evidence points to there being problems in Port Hope; the elevated cardiovascular death rate overall, and the dramatic increase in the death rate from 1986-1996 for women was a surprise finding that merited followup".

U.S. veterans' administration for Atomic Veterans - conditions recognized by statute or regulation as associated with radiation exposure	**Health Canada/CNSC** -conditions associated with radiation in port hope cancer and mortality studies "sentinel cancers" (2000,2002)
1. leukemia, lymphoid (except chronic lymphatic leukemia)	1. leukemia
2. leukemia, myeloid	2. lung cancer
3. leukemia, monocytic	3, breast cancer
4. leukemia, hairy cell	4. thyroid cancer

5. leukemia, other	
6. leukemia, unspecified cell type	
7. thyroid cancer	
8. breast cancer	
9. lung cancer (trachea, bronchus and lung)	
10. bone cancer	
11. liver cancer, primary	
12. skin cancer	
13. esophageal cancer	
14. stomach cancer	
15. colon cancer	
16. pancreatic cancer	
17. kidney cancer	
18. urinary bladder cancer	
19. salivary gland cancer	
20. multiple myeloma	
21. posterior subcapsular cataracts	
22. non-malignant thyroid nodular disease	
23. ovarian cancer	
24. parathyroid adenoma	
25. malignant tumours, brain and central nervous system	
26, lymphomas other than hodgkins disease	
27. cancer, rectum	
28. cancer, small intestine	

29. cancer, pharynx	
30. cancer, bile duct	
31. cancer, gall bladder	
32. cancer, renal pelves, ureters, urethra	
33. cancer, prostate	
34. brochio-alveolar carcinoma	
35. benign neoplasms, brain and central nervous system	
36. other malignancies not listed in the preceding diagnoses	

Independent analysis in February 2004 by Dr. Eric Mintz, Epidemiologist, of the limited data in the two Health Canada/CNSC reports cited above, identifies significant trends for Port Hope (below):

Condition	**Dr. Mintz Analysis of Health Canada Data on PH**
1. deaths -overall	13% elevation in Port Hope 1986-1997
2. cancer deaths-childhood	48% more than expected
3. leukemia -childhood	41% more than expected
4. lung cancer	elevated for men and women in different time periods; female rates significantly elevated 1986-1996
5. brain cancer -adult	elevated for men and women; women more than twice the expected rate 1986-1997 and significantly elevated entire study period
6. brain cancer-childhood	50% elevation entire study period; 4 times expected rate 1971-1985
7. Non-Hodgkins Lymphoma – childhood	statistically significantly elevated entire study period
8. nasal/sinus cancer	significantly elevated for men; over 5 times expected rate 1971-1985
9. esophageal cancer	twice expected rate for men 1971-1985; women have 50% excess entire study period

10. lip	more than twice expected rate for men 1986- 1996
11. bone	More than twice the expected rate for men 1986-1996
12. colorectal cancer	38% elevation for women 1986-1996
13. circulatory disease	15% excess deaths (300) over 42 year period – more than 7 per year. Female death rate rose dramatically 1986-1996 with 100 more deaths than expected.

6. **Recent Earthquakes in the Vicinity of Lakes Erie and Ontario - -Natural Resources Canada - Earthquakes Canada web site (1995-2007)**

1995-05-25 M=3.0 MN felt 11 km NE of Fort Erie, ON

1997-09-24 M=2.5 MN felt 19 km SE of Belleville, ON

1999-11-26 M=3.8 MN felt 23 km SE of Scarborough, ON

1998-12-25 M=3.6 MN felt 25 km SE of Cobourg, ON

1998-09-25 M=5.4 MN felt 95 km NE of Cleveland , OH

1998-06-09 M=3.4 MN 22 km NW of Plattsburgh, NY

2000-05-24 M=3.1 MN felt 12 km SE of Scarborough, ON

2001-01-25 M=4.4 MN felt 94 km NE of Cleveland , OH

2002-11-07 M=3.0 MN felt 19 km SW of Belleville, ON

2003-11-29 M=2.6 MN felt 20 km SW of Belleville, ON

2004-08-04 M=3.8 MN felt 32 km SW of Cobourg, ON

2006-01-05 M=2.8 MN felt 43 km NE of Cleveland , OH

This geographic area of the Great Lakes basin has regular seismic activity and is not suitable for high risk nuclear facilities.

Submitted for consideration of Commissioners,

Yours truly

Faye More
Chair, Port Hope Community Health Concerns Committee