



PORT HOPE COMMUNITY HEALTH CONCERNS COMMITTEE
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Mr. Roger Hillier
Manager of Petitions
Office of the Auditor General of Canada
Ottawa, Ontario

January 2, 2008

Dear Mr. Hillier,

**Re: Petition: Nuclear-Related Health Concerns in Port Hope
Impacting Residents and Workers in the Nuclear Industry**

The Port Hope Community Health Concerns Committee (PHCHCC) is an incorporated non-profit organization of current and former residents concerned about health issues relating to the operations and potential health and environmental impacts of two nuclear industries in our community and the presence of radioactive and heavy metal wastes in hundreds of locations within the town for more than 70 years, still awaiting a federal cleanup.

We are submitting this petition because the federal departments who have responsibilities to protect our health and safety have repeatedly failed the community and we are asking for intervention through the Office of the Auditor General of Canada in the hope that it will result in long over due accountability and government actions to benefit the people of Port Hope.

Section 1: Introduction

Our Committee formed in 1995 in an effort to obtain comprehensive, independent health studies for our community due to decades of exposure to radioactive materials from careless historic waste disposal practices and daily radioactive and heavy metal emissions from two facilities. Our goals were to work with a multi-disciplinary team of professionals to develop a design for independent community health studies that would be relevant for Port Hope's situation, and also to secure promised federal funding for the health studies dating back to 1979 when a commitment of \$5 million was made to the town. This commitment occurred when the news of extensive radioactive contamination throughout our town became very public with extensive national media coverage and questions raised in the legislatures as to the possible effects on the people and the obvious need for health investigations. The only health outcome study to result directly from this public commitment was the small Lees Study of radon and lung cancer which is described later.

Our Committee established a multi-disciplinary roundtable of local residents and professionals which included representation from Health Canada, the Atomic Energy Control Board, Atomic Energy of Canada Ltd., the Ontario Ministry of the Environment, Environment Canada, the local Medical Officer of Health, independent epidemiologists and professors of environmental science, etc. Together we produced a community health study design for Port Hope in 1995 which would include a variety of methodologies such as a community health survey, selected biological testing of people, high level statistical studies of disease incidence and mortality to see if trends emerged, case control studies of specific disease trends, cohort studies of particular populations at-risk, and a complete inventory of contaminants and locations.

The 1979 federal commitments have not been fulfilled despite the ongoing efforts of our Committee and others before us and with us, to have a variety of health studies included in facility licensing and environmental assessment processes. Despite elevated rates of disease for Port Hope in the limited data available, and the elevated levels of radiation and other contaminants to which we are exposed, Health Canada and the federal nuclear regulator have held to their positions for many years now that no health effects should be expected from our increased levels of exposure to radioactive and heavy metal pollution in our environment, including daily inhalation of emissions from two facilities.

A number of promises for studies have been broken starting with 1979 when people living in contaminated properties were supposed to be studied including those who had already moved away, and again when our Committee worked with the AECB in the late 1990's to select and implement studies of value to the community. Several examples:

- a) The AECB funded Dr. Trevor Hancock to design an excellent community health survey for Port Hope (which he did using Health Canada survey tools as models) then, when the work was completed in 1998, AECB announced it would not be implemented as the AECB did not believe in health surveys.
- b) The AECB told us in writing it would fund a tracking study to locate and survey people who had lived in the core zone of greatest air emissions near the plant. They subsequently said this would not be useful and it never happened.
- c) The AECB announced at a Cameco re-licensing hearing in 1999 that it would work with the local Medical Officer of Health to implement a bio-study of 600 school-age children in Port Hope to look for signs of early kidney problems possibly due to uranium exposure. Funding was not made available to the Health Unit and this study never happened.
- d) The two Health Canada/CNSC statistical studies that were released in 2000 and 2002 (although not done independently as we requested) were done to determine if there were elevated rates of certain diseases and if so, detailed follow-up studies would be done. In spite of the fact that elevated rates of diseases did emerge in the data, the follow-up studies were never done and these elevations have been consistently dismissed as unimportant even though a number were statistically significant and an environmental causal factor was possible.

We have been dismayed by the theoretical reassurances given by public health guardians and regulators in the face of documented increased risks to our health; this contradicts science with respect to there being no safe level of radiation exposure (US American Academy of Sciences) as well as strong public health advocacy in Canada, including by Health Canada, and other nations against particle inhalation in public health debates on smog and smoking.

Excerpts below from Health Canada web site “Health Effects of Air Pollution”:

The health of our lungs and entire respiratory system is affected by the quality of the air we breathe. In addition to oxygen, this air contains other substances such as pollutants, which can be harmful. Exposure to chemicals by inhalation can negatively affect our lungs and other organs in the body. The respiratory system is particularly sensitive to air pollutants because much of it is made up of exposed membrane. Lungs are anatomically structured to bring large quantities of air (on average, 400 million litres in a lifetime) into intimate contact with the blood system, to facilitate the delivery of oxygen.

Lung tissue cells can be injured directly by air pollutants such as ozone, metals and free radicals. Ozone can damage the alveoli -- the individual air sacs in the lung where oxygen and carbon dioxide are exchanged. More specifically, airway tissues which are rich in bio-activation enzymes can transform organic pollutants into reactive metabolites and cause secondary lung injury. Lung tissue has an abundant blood supply that can carry toxic substances and their metabolites to distant organs. In response to toxic insult, lung cells also release a variety of potent chemical mediators that may critically affect the function of other organs such as those of the cardiovascular system. This response may also cause lung inflammation and impair lung function.

The cardiovascular system has two major components: the heart and a network of blood vessels. The cardiovascular system supplies the tissues and cells of the body with nutrients, respiratory gases, hormones, and metabolites and removes the waste products of cellular metabolism as well as foreign matter. It is also responsible for maintaining the optimal internal homeostasis of the body and the critical regulation of body temperature and pH.

The inhalation of air pollutants eventually leads to their absorption into the bloodstream and transport to the heart. A wide spectrum of chemical and biological substances may interact directly with the cardiovascular system to cause structural changes, such as degenerative necrosis and inflammatory reactions. Some pollutants may also directly cause functional alterations that affect the rhythmicity and contractility of the heart. If severe enough, functional changes may lead to lethal arrhythmias without major evidence of structural damage to the myocardium.

There also may be indirect actions secondary to changes in other organ systems, especially the central and autonomic nervous systems and selective actions of the endocrine system. Some cytokines released from other inflamed organs may also

produce adverse cardiovascular effects, such as reducing the mechanical performance and metabolic efficiency of the heart and blood vessels.

Many chemical substances may cause the formation of reactive oxygen. This oxidative metabolism is considered to be critical to the preservation of cardiovascular function. For example, oxygen free radicals oxidize low-density lipoproteins, and this reaction is thought to be involved in the formation of the atherosclerotic plaques. Oxidized low-density lipoproteins can injure blood vessel cells and increase adherence and the migration of inflammatory cells to the injured area. The production of oxygen free radicals in heart tissues have been associated with arrhythmias, and heart cell death.

After reading just these excerpts, one has to ask, how and why can particle inhalation of radioactive and heavy metals in Port Hope be considered safe by Health Canada and on what medical basis? We have challenged their position with respect to Port Hope which is primarily based on risk assessments and guesswork. Assumptions have been made about radiation exposures, calculations have been done and predictions made over the years by federal departments and their agents about what our health outcomes should be. Risk assessments, based on incomplete information and inappropriate models, have been relied upon to excuse not examining health outcomes for real people as a result of their unique living and working situations surrounded daily by contaminants.

The fact is that the limited health outcome data for Port Hope available years ago, as far back as 1984 (the Lees Study on lung cancer), tells a very different story from the “predictions” and reassurances. The data of several studies contradict what we are repeatedly told by the departments with the duty to protect us and act on our behalf. We have been and continue to be subjected to sweeping reassurances not supported by science and medicine, the outright misrepresentation of report findings (see below) and a refusal to properly investigate and monitor public health. We can only conclude that these departments are more concerned about their liabilities if harm has been caused, than they are for our wellbeing and protection into the future. Clearly this is unacceptable.

Just recently, when contamination was documented in the bodies of 9 former nuclear workers and local residents including a child, Health Canada has re-stated its position both in person to Town Council and on its web site that “all of this monitoring consistently indicates Port Hope residents are not at risk”. This position by a federal guardian of our public health is not precautionary as it should be, it is not defensible and it is not acceptable. It is not supported by science or medicine and must be challenged – it must be changed.

Please receive this petition on behalf of the Committee with our questions for federal departments with a responsibility for nuclear matters in Canada.

Key Questions:

1. On what scientific, peer-reviewed basis does Health Canada tell Port Hope that there is no health risk from particle inhalation of uranium, uranium compounds, fluoride, ammonia, arsenic, among other toxic materials released daily?
2. Why does Health Canada not have a radiation in air detection system operating in Port Hope when it has them elsewhere in Ontario?
3. Why does Environment Canada not have a wind and weather monitoring capacity for Port Hope specifically given the emissions and possibility of serious accidents?
4. How has Port Hope's geography of hills and valleys, wind patterns and maritime climate due to location on Lake Ontario been factored into the dose calculations?
5. Has the Government of Canada ever done a true cost estimate to determine costs of all liabilities related to nuclear activities in Port Hope?

Section 2: Background

History of the Nuclear Industry in Port Hope (1)

Canada began mining uranium ores in the early 20th century for their radium content. In 1930, uranium ores were discovered in the Great Bear Lake deposit in the North West Territories and were developed by Eldorado Gold Mines for radium and uranium extraction. The refinery in Port Hope, Ontario was the first facility of its kind built and the only one in North America in the early 1940s that was equipped to refine uranium.

Uranium concentrates (yellowcake) were shipped to the refinery where uranium was refined into uranium oxides (UO₂ and UO₃) as well as uranium hexafluoride (UF₆). From 1941 to 1945, the entire production of refined uranium was supplied to the United States for use in the Manhattan project. The Port Hope facility had hundreds of tons of uranium concentrate on site from years of radium extraction but to meet demand Eldorado reopened the mine at Great Bear Lake which had shut down two years earlier. The facility also refined uranium from ores purchased by the US from Union Minière, a Belgian company that developed a deposit in the African Congo. Canada's uranium mining and processing industry continued to sell uranium for nuclear weapons until 1959 when United States stopped purchasing uranium from Canada. Production slowed but continued under the Canadian government's uranium stockpiling program until the mid 1980s.

Eldorado Nuclear built a new uranium refinery at Blind River, Ontario (early 1980s). The Blind River facility refined uranium concentrate into UO₃ which was shipped to Port Hope. In Port Hope, UO₃ was converted into UO₂ and UF₆. The UO₂ was then sold as fuel for CANDU reactors. The UF₆ was exported to enrichment facilities. The Port Hope facility also produced depleted uranium metals until 1992 and processed enriched uranium from 1966 to 1987. Port Hope also blended enriched and depleted uranium powders to specific isotopic concentrations.

In 1988, Cameco Corporation was formed by the privatization of Canada's uranium industry and the merger of two government owned corporations Eldorado Nuclear and Saskatchewan Mining Development Corporation. Cameco is the only Canadian company and one of only four companies currently providing uranium refining and conversion services to the western world; the other three being Honeywell in the United States, British Nuclear Fuels Limited in the United Kingdom, and Comurhex in France. Cameco is the world's largest uranium producer with four operating mines in Canada and the United States and two new mines being developed, one in Canada and the other in Central Asia. It has about 40% of the capacity in the western world to produce UF₆. It is also the only producer of ceramic uranium oxides for fuel in Canadian built CANDU reactors.

Port Hope is also home to a facility established in 1965 to develop fuel to support Canada's nuclear energy program. This facility produces fuel pellets from refined UO₂ and assembles fuel bundles for CANDU reactors. In 2006, the plant was acquired by Cameco from Zircatec Precision Industries.

(1. Source: The Quantitative Analysis of Uranium Isotopes in the Population of Port Hope, Asaf Durakovic, Axel Gerdes, Isaac Zimmerman, 2007)

Section 3: Current Context

Facility Operations:

Cameco continues to operate its two nuclear facilities in Port Hope, each with a five year license issued by the Canadian Nuclear Safety Commission. The two current licenses were issued in 2006 following public CNSC hearings. Both facilities are located within the community and are licensed to emit uranium and other heavy metals/chemicals materials to the air and water.

No human health studies or monitoring have been required as part of the licensing process.

Environmental Assessments in Port Hope

No baseline human health studies have been required as a component of any of the environmental assessments.

i. Cameco Screening Level EA 2003 (withdrawn 2006)

In September 2006, Cameco withdrew its proposal at the conclusion of a Screening Level Environmental Assessment process to blend Slightly Enriched Uranium (SEU) at its Port Hope waterfront location. One of the main reasons Cameco cited for withdrawing the proposal just prior to a public CNSC hearing on the EA report was public opposition to

the plan. At a CNSC hearing regarding the Scope for the Cameco SEU EA in November 2003, CNSC staff stated that Zircatec's role in the project would not require an EA. (Source CNSC transcript November, 2003)

ii. Cameco Comprehensive Study EA 2006

An environmental assessment is underway for Cameco's 2010 Plan for Port Hope's Waterfront site. The Canadian Nuclear Safety Commission is conducting a comprehensive study which began September 15, 2006. Cameco proposed the Vision 2010 project which involves a comprehensive redevelopment of its Port Hope Conversion Facility located in Port Hope, Ontario. The project consists of decommissioning and demolishing approximately 20 old or underutilized buildings, removing contaminated soils, building materials and stored historical wastes, and constructing new replacement buildings. On-site plant operations are to be maintained while the work is carried out. Three of the twenty buildings that will be decommissioned include: North UO₂/Waste Recovery Building; Metals Plant; and East UF₆ Plant. Each of these three buildings are Class 1B nuclear facilities used to refine or convert uranium with a capacity of more than 100 tonnes per year. (Source: CNSC web site)

Details on this process are not yet available to us.

iii. Zircatec Screening Level EA 2006 (CNSC hearing January 9, 2008 on final report)

This environmental assessment is nearing completion. Zircatec submitted notice to the Canadian Nuclear Safety Commission Staff (CNSC) on June 6, 2003 and an updated proposal on May 19, 2006 (Zircatec 2006a) of its intention to build and operate, at its Port Hope Facility, two new lines to produce two types of nuclear fuel components: Slightly Enriched Uranium (SEU) dioxide containing approximately 1.0 wt% U-235 enrichments, and Blended Dysprosium oxide/natural uranium dioxide (BDU). The two fuel components would be used to manufacture SEU CANDU CANFLEX Fuel Bundles (SEU Fuel Bundles) for use at CANDU power reactors. (source: Zircatec Draft Screening Report prepared by CNSC, September 2007)

A CNSC hearing is scheduled for January 9, 2008.

iv. AECL Low Level Radioactive Waste Management Office Screening Level EA (ongoing)

A project description for a long-term low-level waste management facility was submitted to Natural Resources Canada (NRCan) by the Low-Level Radioactive Waste Management Office (LLRWMO) in November 2001. The proposed project (Port Hope Project) includes the remediation of sites containing low-level radioactive wastes located in the former Town of Port Hope and in the former Township of Hope, as well as the management of waste in a long-term low-level radioactive management facility in Port Hope. A Screening Level Environmental Assessment was initiated. NRCan assumed the position of lead Responsible Authority⁴ (RA) for the EA. The CNSC, as well as the Department of Fisheries and Oceans Canada (DFO), declared itself to be an RA. Health Canada, Environment Canada, the Canadian Environmental Assessment Agency and

Transport Canada identified themselves as federal authorities for the purpose of providing expert assistance during the environmental assessment.

(source: CNSC decision document January 2007)

We have many concerns regarding the operation of the LLRWMO in Port Hope, the lack of testing at Dr. Power's Public School among many other issues, which are documented in the Committee's submission to Natural Resources Canada in September 2006. It is imperative that this process be the subject of a review panel.

Section 4: Port Hope Radio-Biological Test Project, 2007

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 ^{236}U (Uranium 236) – a waste and spent fuel product of nuclear reactors.
3. Enriched levels of the ^{234}U 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 do not show the contaminants or characteristics of the Port Hope subjects.

Uranium Facts

- Uranium is an alpha radiation emitter. Alpha emitters are carcinogens. Alpha emitting radionuclides are classified as Class I Carcinogens by the World Health Organization's International Agency for Research in Cancer.
- The decay of one uranium atom inside a human body, adjacent to a human cell, can begin a process that leads to systemic dysfunction, genetic malformations, cancer and death.
- ^{234}U is the most radioactive of the isotopes of uranium found in Cameco's "natural uranium" UO_3 feedstock; it is 18,000 times more radioactive than the most common uranium isotope, ^{238}U , which makes up 99% of Cameco's products.
- The manmade nuclear reactor isotope ^{236}U – this isotope of uranium is man made; it is produced by being bombarded by neutrons inside nuclear reactors. Its presence is conclusive evidence of "dirty uranium" processed/handled in Port Hope. It is illegal in Canada to pollute the environment and humans with nuclear reactor spent fuel.
- Enriched ^{234}U – this isotope is a naturally occurring uranium isotope but its quantity in the study subjects' bodies indicated it is a modified isotope. According to the International Atomic Energy Agency, enriched ^{234}U in the nuclear fuel cycle is a forensic indication of down-blended, recycled and reprocessed enriched uranium (i.e. the SEU and enriched uranium circuit at Cameco and Zircatec process materials containing enriched ^{234}U).
- Depleted uranium – DU is the tails of the uranium enrichment process at the US Enrichment Corporations Paducah, Kentucky facility. Cameco processed DU metals and Eldorado Nuclear processed DU metals for the US uranium weapons used in Iraq, Kosovo, Serbia, Afghanistan and more recently in Lebanon.
- Test results of Port Hope subjects show industrial uranium is being released in urine 23 years after exposure and elevated concentrations of total uranium containing contaminants.
- People in Port Hope may be exposed to internal alpha and gamma radiation through inhalation of uranium dust and its decay products such as radon in air, and through ingestion of dust, garden produce, etc. People are exposed to external gamma and neutron radiation from air emissions and uranium hexafluoride cylinders sitting or traveling in public areas.

Excerpts from CNSC Transcript for Cameco SEU, November, 2003

- Enriched uranium was processed safely in Port Hope from 1966 to 1987, and some of our current employees were involved (Bob Steane, Cameco).

- In addition to the natural uranium supply, Port Hope is already routinely engaged in blending uranium powder of different isotopic concentrations as we currently blend our natural UO₂ with depleted uranium powder to specific isotopic concentrations for reactor needs (Bob Steane, Cameco)

Key Questions

6. How do Natural Resources Canada and CNSC explain how ²³⁶U has come to be in the bodies of former Port Hope nuclear industry workers years after employment when it is not a substance known publicly to be in Port Hope?
7. Are NRCan and/or CNSC approving recycled and/or blended uranium at any facility in Port Hope? Has approval been given at any time in the past for Cameco, Eldorado or Zircatec to have such material in Port Hope? If so, when? If not, how have regulators determined whether or not this has occurred without their approval?
8. The Low Level Radioactive Waste Management Office stated in June 2007 that they have not tested waste materials for ²³⁶U in spite of the fact that depleted uranium was known to be processed in Port Hope and also known to be contaminated. Why not?
9. Is ²³⁶U (and other likely materials such as plutonium) present in the estimated 3.5 million cubic metres of radioactive wastes in Port Hope (the 2005 federal estimate of waste volume if cleaned up to background levels)?
10. Why has the response of Health Canada (Dr. J. Cornett, Director of the Radiation Protection Branch) to the town of Port Hope in November, 2007 been to call these results good news, to say the levels are the same in all Canadians and to further dismiss the need for any health studies or monitoring when this is not accurate?
11. Why is the presence of commercial industrial uranium in civilians including a child in Port Hope NOT telling the federal departments that industrial radioactive materials are bio-available to Port Hope people in air and soil, presenting elevated risks, and that these departments must take corrective actions including: comprehensive independent health studies with ongoing health surveillance, more detailed routine testing of workers, implementation of appropriate safeguards, including zero emissions to the environment from industries without buffer zones from people?.
12. How does Health Canada support its public statement that all Canadians show content of depleted uranium, ²³⁶U (signature of spent nuclear reactor fuel), and ²³⁴U (commercial industrial uranium) and are no different from Port Hope?
13. Which communities in Canada similar to Port Hope's environment have had radio-biological testing of residents done, when and why was it done?
14. Please provide all test results for all communities in Canada that have been tested for uranium isotopes and all test results that are similar and/or not similar to those of the Port Hope subjects?
15. Please provide data tables for comparison purposes of the above other communities and Port Hope test results.
16. Why isn't Health Canada concerned about increases of the abundance of ²³⁴U inside human bodies in Port Hope instead of billing the findings "good news"?

Section 5. Diseases Associated With Ionizing Radiation in U.S. Law

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). Table 1 summarizes the key provisions of RECA by type of claim, prior to the RECA 2000 Amendments.

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.

United States Dept. of Justice: Conditions recognized in law as associated with radiation exposure	Health Canada/CNSC -4 conditions associated with radiation in analysing two Port Hope cancer and mortality studies - “sentinel cancers” (2000,2002 reports)
1. leukemia, lymphoid (except chronic lymphatic leukemia)	leukemia
2. leukemia, myeloid	
3. leukemia, monocytic	
4. leukemia, hairy cell	
5. leukemia, other	
6. leukemia, unspecified cell type	
7. thyroid cancer	thyroid
8. breast cancer	breast
9. lung cancer (trachea, bronchus and lung)	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	
37. other conditions may be recognized in future	

Key Questions:

17. 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 when the United States Dept. of Justice recognizes at least 36?
18. Will the Government of Canada recognize all of the diseases recognized by the United States listed above as associated with ionizing radiation exposure and provide a detailed response for each disease with a rationale for the decision which may then be subjected to cross-examination in an inquiry forum?
19. Will the Government of Canada agree to develop legislation which will protect communities, nuclear industry workers and military personnel and provide compensation for illnesses subsequently determined to be associated with radiation exposure?
20. When will the Government of Canada develop legislation that recognizes the potential harm caused by exposure to ionizing radiation, develops standards in accordance with that recognition and provides compensation to community down-winders, nuclear workers and military personnel who are exposed to radiation and placed at increased risk?

**Section 6: Cancer Incidence Study (Health Canada/CNSC, 2000)
Cancer and General Mortality Study (Health Canada/CNSC, 2002)**

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”.

Condition	Dr. Mintz Analysis of Federal 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, an average of 10 per year.

Key Questions:

21. What are Health Canada’s standardized norms for each of the conditions listed in the two reports?

22. What are Health Canada's norms for Port Hope for each of the conditions listed in the two reports and please comment on any anomalies noted?
23. The original purpose of doing these two studies was to see if elevated rates of diseases emerged statistically and to follow up on those directions. Why has this not been done?
24. Why has the independent analysis of both federal reports by Dr. Eric Mintz and submitted to the CNSC, been consistently ignored even though Dr. Mintz was paid as a reviewer by the Atomic Energy Control Board to review the 2000 report?
25. On what basis have these elevated rates of disease and the possible impact of radiation exposure, heavy metal and chemical exposures and daily inhalation of particulate for Port Hope people been consistently dismissed by federal departments?
26. Please provide data tables from similar studies of other communities in Canada which show Port Hope data to be the same?
27. Please provide detailed data for children for cancer incidence and mortality and general disease incidence and mortality.
28. Why is the scientific and medical research regarding impacts of radiation exposure, heavy metal exposure and particle inhalation with respect to cardiovascular and respiratory systems not incorporated into the analysis of impacts on elevated disease rates for Port Hope people and particularly the significant elevated cardiovascular mortality?
29. Will the federal government commit to begin multi-year funding for independent multi-disciplinary health investigations in 2008?

Section 7: "A Case Control Study of Lung Cancer Relative to Domestic Radon Exposure" Port Hope 1984 (Lees R.E., et al.)

Health Canada, CNSC, and LLRWMO as well as Cameco have referenced this study to say that it did not show any anomalies that could be associated with radon exposure. This is not factually correct and while we have stated this on numerous occasions including in CNSC interventions and at Cameco public forums by speakers when the results are continually misrepresented, the misinformation continues from so-called experts.

In fact, this study of 27 Port Hope subjects with lung cancer, who met the strict study design criteria, did in fact, show an association between exposure to domestic radon gas and lung cancer incidence (1. Mintz report, 2004. Hardy Stevenson Peer Review team for Port Hope town council, 2006). Neither the full report nor the full results were publicized in Port Hope at the time, and as we can see from Health Canada's recent statements, the true result is still being obscured. Another study of this kind in Port Hope was not conducted after 1984 despite the fact that this was only intended to be the first step in a series of investigations.

Key Questions:

30. Why are the results of this study inaccurately presented?
31. Why was no followup done, given that exposure to radon gas, a decay product of uranium, is the second leading cause of lung cancer in the world according to the World Health Organization and was thought to be the primary exposure pathway for Port Hope residents?

Section 8: 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

CNSC and Health Canada's position has been that this is another study that does not show any health effects from past or present exposure to radiation. It was recently cited again by Dr. Cornett to Port Hope for this reason.

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.

Key Questions:

32. Why have the real findings been ignored since 1998 by the same department for public health in our government that compiled them?
33. Why has there been no follow up on this data despite pressure from our Committee and meetings with the International Joint Commission Chair, The Honourable Herb Grey, and other federal departments?
34. Which department is actually responsible for protecting the health of the people of Port Hope and which department is actually accountable for not doing it?

Section 9: Need for the Highest Levels of Environmental Assessments for Nuclear Projects in Port Hope with Comprehensive Health Data

Key Questions:

35. Why is the CNSC a regulator whose job is to regulate based on risk, not to act in the public interest as is the National Energy Board. (CNSC Director Clarke, CNSC meeting in March, 2005 explaining why NEB has review panel EAs and CNSC does not)?

36. How can major nuclear related projects be assessed utilizing the lowest level of EA process available?
37. Are CNSC policies and procedures with respect to Environmental Assessments written and applied in accordance with the Canadian Environmental Assessment Act and its intentions for public participation?
38. Is the experience and performance of the owner/operator factored into decisions on the level of EA to be ordered?
39. How many nuclear-related projects under the auspices of the CNSC and Natural Resources Canada have been assigned to each of the four EA categories in the past 6 years and on what basis?
40. On what supporting documentation did the CNSC staff base their decision in 2003 that Zircotec would not be required to undergo any Environmental Assessment to process increased quantities of enriched uranium in Port Hope?
41. On what basis did the CNSC staff change their previous decision (above) in 2006 to decide there would be an EA?
42. Why did CNSC staff designate Zircotec the lowest level, a Screening Level EA, when there had never before been a public EA process, given the nature of the material planned for Port Hope, and given the mismanagement of other sites by the new owners, Cameco?
43. On what supporting documentation did CNSC staff designate the Cameco SEU proposal in 2003 as a Screening Level EA?
44. Why is the planned federal cleanup of radioactive wastes (approx. 3.5 million cubic metres present to date) throughout our functioning community assigned as a Screening Level EA despite public requests for the highest level EA?
45. What powers are given to CNSC staff to approve incremental increases in projects or operations without triggering an EA (e.g. increases in levels and quantities of enriched uranium, or recycled materials)?
46. Why isn't all material related to and referenced in every EA process made available on the CNSC web site and in a timely way for public review and comment?
47. What is the CNSC benchmark for "public concern" that would warrant referral to the Minister to call a review panel? And has this benchmark ever been met?
48. Why doesn't the CNSC require factual human health baseline data in Port Hope to meet the cumulative effects requirements of the CEAA?
49. Why doesn't the CNSC require factual environmental impact baselines, including the degree of ongoing deposition of uranium to our soil or accumulation in our bodies, to meet the cumulative effects requirements of the CEAA?
50. Why is the LLRWMO not required to make public the locations of all contamination as a public health issue?
51. Why is the LLRWMO not required to notify all former inhabitants of the presence of contamination on properties?
52. Why can't people find out readings on homes they used to live in, schools they attended, the beach they played on, etc?
53. Why are no baseline health studies included in the scope of the cleanup and why are no specific monitoring studies put in place when the inhabitants of the

properties are clearly known, names of students and staff over the years who attended the contaminated schools are found?

54. How can the Government of Canada justify nuclear matters relating to an operating license, disposal, storage, construction being undertaken without the highest level of EA given the lethal life span of the materials and potential for harm?
55. Given the high degree of linkage between the government departments, industry and the regulator, will the Government of Canada commit that all nuclear related projects in Port Hope will be subject to the highest level of environmental assessment (review panels) with comprehensive health studies mandated under that umbrella?

We have many resource documents, research papers, previous submissions to federal departments that we would be pleased to cite for you and provide to you to assist your consideration of our petition. We would also be very pleased to meet with you to discuss our concerns in detail. You may be interested in our web site www.porthopehealthconcerns.com which also contains links and references.

Thank you for your anticipated cooperation and assistance in addressing our concerns,

Sincerely,

Faye More, Chair
Port Hope Community Health Concerns Committee

16 Ralston Drive
Port Hope, L1A 2C1

(905)885-7991

Attachment:
PHCHCC-UMRC Radiological Studies Report