

International Institute of Concern for Public Health (IICPH)

April 19, 2010

Ms Louise Levert
Secretariat, Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046
Ottawa, Ontario K1P 5S9
E-mail: interventions@cnsccsn.gc.ca

Re: SRB Technologies (Canada) Inc. (“SRBT”), Pembroke, Ontario: Application for renewal of Class 1B Nuclear Substance Processing Facility Operating Licence

Dear Ms Levert:

On behalf of the International Institute of Concern for Public Health (IICPH), please accept this written submission in response to a Canadian Nuclear Safety Commission (“Commission”) notice dated December 16, 2009 of a two-day public hearing concerning SRBT’s request to renew its operating license for a five-year period.

In addition to this written submission and in accordance with the Commission’s *Rules of Procedure* (“Rules”), as the representative for IICPH in this case, I am requesting the opportunity to make an oral presentation at day two of the public hearing on the SRBT application scheduled to occur on May 19, 2010.

A. Expression of Interest of IICPH

IICPH is a Canadian-based non-profit international organization founded in 1984. The key principle under which IICPH operates is that a safe environment is a fundamental human right. The Institute researches the science of the health effects of chemicals and radiation and provides advice to governments, organizations and individuals on these matters.

IICPH has been involved in examining various aspects of the nuclear industry, including the issues pertaining to this hearing. At the invitation of the Concerned Citizens of Renfrew County (CCRC) and on behalf of IICPH, Dr. Rosalie Bertell, an expert on the health effects of low-level radiation, made a submission to the Commission during the SRBT licence renewal hearings in 2006.¹ Our organization has also supported the concerns expressed in the interventions by CCRC and other organizations and individuals regarding the operations of SRBT.

This written submission provides an overview of the concerns of IICPH regarding re-licensing this facility, particularly related to the effects these operations have had and will continue to have on the health and well-being of the residents in the community. IICPH will further elaborate on these and other issues at the public hearing on May 19, 2010.

¹ [Health effects of tritium](#). (Rosalie Bertell, Ph.D., GNSH, *Health Effects of Tritium*, Submitted to the CNSC, November 27, 2006).

B. Overview of the SRBT Facility

SRBT manufactures self-illuminating exit signs and other illuminated products for a variety of uses, including watches, gun sights, compasses and other lighting applications. In operation since 1991, it is located on Boundary Road, Pembroke, Ontario, in an industrial park in a residential district. The nearest residence is 240 metres from the facility. During its peak period approximately 36-40 people were employed by SRBT. As of 2010, it employs 18 people.

The manufacturing process entails the use and release of tritium gas, a radioactive form of hydrogen, and a known carcinogen. The gas is used to fill glass tubes to produce the gaseous tritium light sources (GTLS) which are distributed in Canada and internationally. SRBT also receives expired or rejected GTLS from a variety of sources to “reclaim” the residual tritium.

The proximity of the facility to residents and recreational and business activities has been a concern of residents for years. Tritium pollution from SRBT has been found in vegetables grown in home gardens in the area, in groundwater, in wells, and in a nearby hockey arena.

C. Tritium Emissions

For several years releases of tritium from SRBT into the Pembroke environment have been inordinately high. For example, in the year 2000 alone, this facility released approximately 18,000 trillion Becquerels. This is more than six times the amount of tritium released from all of Ontario’s nuclear power plants for that year.² While emissions have decreased substantially over the last decade, for example, to 1200 trillion Becquerels in 2005, and most recently to just over 40 trillion Becquerels in 2009, these levels remain unacceptably high.

Over 800 residential wells are located within a 5 km radius of SRBT. Since 2006, SRBT has been asked by the regulatory commission to develop a solution to address the serious groundwater contamination problem stemming from the operation of this facility. Wells within a kilometre of this facility have been found to contain high levels of radioactive tritium, and many residents feel threatened by this contamination because of the serious health risks it poses.

Since the company’s inception, residents and organizations such as CCRC have advocated for tighter emission controls; mandatory monitoring and reporting of tritium levels in air, precipitation, local gardens, and groundwater; proper disposal and reclamation; and the enforcement of SRBT’s legally required contributions to a decommissioning fund.

For almost twenty years, residents have been exposed to inordinately and unacceptably high levels of tritium through inhalation, ingestion and dermal absorption. Considering that the half-life of tritium is 12.3 years, tritium levels in the environment will not dissipate for a number of generations, even with the “reductions” to date, or for that matter, even with the complete elimination of any further releases of tritium from SRBT. The cumulative effects of tritium exposure and its effects on the populations that are most vulnerable to low-level radiation, have not even been considered or addressed.

² Tritium on Tap, November 2009 Sierra Club Canada. pp. 9,27

D. Overview of Previous Hearings

SRBT was “ordered” by CNSC to stop processing tritium in December 1995, November 2005 and August 2006. SRBT appealed all these rulings, and was allowed to reopen within weeks. However, following a formal hearing in November 2006, the Commission overruled the recommendations of its staff, and declined to renew the company’s license to process tritium.

Subsequently, in January 2007, the Commission announced that SRBT would be issued a Facility Possession Licence for eighteen months, which would allow SRBT to possess, transfer, manage, store and dispose of nuclear substances at its facility, but not to process or use tritium for the purpose of manufacturing gaseous tritium light sources.

This decision was based on the opinion of the Commission that SRBT would not make adequate provision for the protection of the environment while carrying out their activities.³

After the eighteen-month period, SRBT re-applied for an operating licence to process tritium, which was granted by the Commission for a two-year period.

IICPH is very concerned that deficiencies in SRBT’s operations that have been clearly identified in previous hearings have still not been adequately addressed.

E. Issues Regarding SRBT Operations – IICPH Perspective

In addition to our concerns about the adverse health effects caused by tritium exposure from SRBT’s current and past operations, IICPH is also concerned about SRBT’s plans to partially capture waste tritium exiting from their stacks and then release it into Pembroke’s sewer system.

The resulting contamination of sewage sludge by tritium and the spreading of this tritium-contaminated sludge to other areas have health implications for workers exposed to tritium-contaminated mist in the pumping station and coming from sewage sludge. This practice would cause further contamination of the vegetation in the Ottawa valley for decades to come.

Furthermore, while the current Ontario Drinking Water Objective for tritium is 7000 Becquerels per litre (Bq/L), a recent review of this guideline by the Ontario Drinking Water Advisory Council (ODWAC) has recommended that the permissible limit be 20 Bq/L.⁴ Given the level of groundwater contamination in the Pembroke area, it is questionable whether SRBT could meet this proposed new level.

As has been addressed in great detail in Dr. Bertell’s submission in 2006, the methodology developed and used by the International Commission on Radiological Protection (ICRP) in assessing risk of exposure to tritium is not precautionary and requires serious revision.⁵ IICPH contends that area residents have not been adequately protected from tritium exposure because of the reliance placed on ICRP’s outdated methodology.

³ <http://www.nuclearsafety.gc.ca/eng/commission/pdf/2006-11-27-Decision-SRBT-e.pdf>

⁴ Report and Advice on the Ontario Drinking Water Quality Standard for Tritium
http://www.odwac.gov.on.ca/reports/052109_ODWAC_Tritium_Report.pdf May 21, 2009

⁵ Refer to [Health effects of tritium](#). (Rosalie Bertell, Ph.D., GNSH)

F. Additional Outstanding Issues


The health and environmental effects in the immediate and long-term are the most pressing concerns for IICPH. Several specific issues pertinent to licensing this facility are of interest to IICPH in that they lie at the very core of the problems of the operations at SRBT, and will be detrimental to the health and well-being of the affected communities for generations.

These concerns include;

- Levels of tritium released to the atmosphere
- Handling of waste
- Contamination of groundwater and rivers, including the Ottawa River
- Third-party monitoring
- Reclamation activities
- Decommissioning
- The use of uranium getter beds for processing and storing tritium
- Ensuring that qualified staff is always on hand to control the licensed activities at SRBT. According to e-mail correspondence dated April 19, 2010 from Marc Drolet, Public Affairs and Media Relations, CNSC, “regulations require that persons are trained and that the facility staff be qualified to carry out the activities that the licence authorizes them to carry out. Each CNSC licensee designates a Radiation Safety Officer who has knowledge of radiation protection”.

I look forward to having the opportunity to elucidate further on these and other health-related issues on May 19, 2010.

Sincerely,



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