



Federal-Provincial-Territorial Radiation Protection Committee – Canada

Response Statement to the Issue of Power-Frequency Magnetic Fields and Childhood Leukemia – Issued on January 20, 2005

The Federal-Provincial-Territorial Radiation Protection Committee (FPTRPC) is aware of concerns about possible health risks from exposure to power frequency electric and magnetic fields (EMFs). In response, the FPTRPC developed a Position Statement to address the issue*. Of particular interest is the risk of cancer from living near power lines and other sources of EMFs. These concerns appear to arise as a result of the controversial and contradictory findings in scientific research, especially from epidemiological studies.

The outcome of a recently conducted pooled analysis of several epidemiological studies shows a two-fold increase in the risk of leukemia in children living in homes, where the average magnetic field levels are greater than 0.4 microtesla (4 milligauss)[†]. The explanation for this elevated risk estimate is unknown, but the authors of the pooled analysis suggest that it may be accounted for, in part, by selection bias of cases and controls in the original studies used for the pooled analysis. However, the number of subjects in the greater-than-4-milligauss group is very small, and thus the significance of the finding is questionable. More refined statistical and epidemiological methods will be needed to clarify this finding. Further, no mechanism has been identified in the research literature that supports the suggestion that these fields can cause or promote the development of cancer.

It is the opinion of FPTRPC that the epidemiological evidence to date is not strong enough to justify a conclusion that EMFs in Canadian homes, regardless of locations from power lines, cause leukemia in children.

* Position Statement for the General Public on the Health Effects of Power-frequency (60 Hz) Electric and Magnetic Fields; issued by the Federal Provincial Territorial Radiation Protection Committee – January 20, 2005

[†]Ahlbom A, Day N, Feychting M, Roman E, Skinner J, Dockerty J, Linet M, McBride M, Michaelis J, Olsen JH, Tynes T and Verkasalo PK. A pooled analysis of magnetic fields and childhood leukaemia. *Br J Cancer*. 2000;83(5):692-698.