EIA activity 1

13.What are the direct effects of EMF exposure on the human reproductive outcome (100 kHz – 300 GHz)? Are the studies conclusive? (G6 – G41 – G27 – G14)

**The effect of EMF exposure on reproductive function differs according to frequency and wave, strength (energy), and duration of exposure.Reproductive parameters reported to be altered by EMF exposure include male germ cell death, the estrous cycle, reproductive endocrine hormones, reproductive organ weights, sperm motility, early embryonic development, and pregnancy success.**

**During labor no evidence was found for harmful effects on the fetus for women treated with microwave diathermy however during pregnancy it is different as women ,some of tests were deemed positive and others were deemed negative like In some of the larger epidemiological studies of female plastic welders and physiotherapists working with shortwave diathermy devices, there were no statistically significant effects on rates of abortion or fetal malformation**

**As for males It induced decreases in serum levels of testosterone, sperm count, motility, morphometric abnormalities, and significant increases in serum luteinizing hormone level, lipid peroxidation, and DNA damage in sperm cells**

22. What are the SAR limits as basic restrictions according to Canada Safety Code 6? (G15 – G6 – G12)

**Any devices that have a radiating element normally operating at or below 6 Ghz with a separation distance up to 20 cm should undergo a sar evaluation , any other devices that operates above 6 Ghz or with a separation distance greater than 20 cm should undergo an rf evaluation, also sar limits differs for different part of the body and for different types of environment as for example:**

**1-sar limits for the head, neck and trunk, averaged over any one gram (g) of tissue is 8 for controlled environment and 1.6 for uncontrolled environment.**

**2-sar limits in the limbs as averaged over any 10 g of tissue is 20 for controlled environment and 4 for uncontrolled environment**

**Alas the average sar limit over the whole body and the recommended limitation is 0.4 for controlled and 0.2 for uncontrolled .**

**There are some provision needs to be taken in a sar evaluation such as :**

1. **If a device has push-to-talk capability a minimum duty cycle of 50% (on-time) shall be used in the evaluation as for those without this capability the cycle should be evaluated based on the designed of the phone.**
2. **The power output of channels need to be tested if it is more than 0.5 db of the middle channel , then the highest power output should be recorded**

**Reference:**

[**https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01904.html#s3.1**](https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01904.html#s3.1)

**Canada safety code 2009 page 11.**