Miljörörelsens Kärnavfallssekretariat, Milkas,
The Swedish Environmental Movement´s Nuclear Waste Secretariat Tegelviksgatan 40, SE-116 41 Stockholm,Sweden
Tel: +46-8-841490, info@milkas.se
www.milkas.se, www.nonuclear.se
Handläggare: Britta Kahanpää, tel: +46-768-993447

Till Naturvårdsverket
registrator@naturvardsverket.se espoo@naturvardsverket.se
kirjaamo@syke.fi
transboundaryEIA.SEA@syke.fi.

2025-08-22
SYKE/2025/1436

The Environmental Movement's Nuclear Waste Secretariat's
REFERENCE VIEWPOINTS
regarding plans for "Finland's legislation on radiation and nuclear technology".

Questions that Milkas, the Environmental Movement's Nuclear Waste Secretariat, wants answers to before STUK begins work on reviewing changes to the legislation.

1. Has STUK studied the death rates in Sweden's cancer statistics during the 20th century and come to any conclusions regarding the impact of foreign radionuclides? Source: Cancer Trends During the 20th Century. Olle Johansson, Assoc. Professor,
Karolinska Institutet. **Appendix 1.**
See also all types of cancer combined in a single diagram from 1910-1998, where you can clearly see how little cancer there was before 1945**. Appendix 2.**

2. Has STUK studied "Causes of Death in Sweden" from Statistics Sweden, unique statistics from the 19th century?
What conclusions does STUK draw when you study the development of all gene mutation diseases after 1945 when humans began releasing foreign radionuclides into our circulation?

3. Does STUK know that radionuclides inside the body can cause mutations in DNA, RNA, mRNA, microRNA, tRNA, rRNA?

4. Does STUK follow modern genetic research?

5. Does STUK realize that the mutational capacity of radionuclides inside tissues is much greater than the old calculations show?
This applies to humans, animals and plants.
This applies to bacteria, viruses, cells, proteins, microbes.

6. Does STUK know that in Sweden and Germany there are one-year-old wild boars that have ingested a lot of radionuclides through their food, and show incredibly high Bq values, 40,000 Bq! Source SSM.
Are there one-year-old wild boars with 40,000 Bq in Finland too?

7. Does STUK know about mutations that cause species extinction?
Does STUK know that a mutated elm fungus is now, after 1945, eradicating all elms, which were formed and existed in the Tertiary period on, among other places, Spitsbergen 66-2.58 million years ago?

8. Does STUK think that we have the right to use foreign radionuclides to eradicate trees?

9. Does STUK know that a mutated ash fungus is eradicating all ash trees? Ash trees have also existed for millions of years.

10. Does STUK think we have the right to mutate a bacterium with foreign radionuclides, so that horse chestnuts become extinct?
11. Does STUK think we have the right to mutate a frog fungus so that frogs die? How many millions of years have frogs existed?

12. Has STUK realized that the nuclear industry uses an outdated way of calculating the mutational capacity of radionuclides in human, animal and plant tissues? (They have calculated cancer cases from, for example, Hiroshima and the gamma radiation coming from outside, instead of the more dangerous alpha and beta radiation from inside our tissues, the conclusions of which can be drawn from old Swedish statistics.)

13. Does STUK think it is **immoral** that nuclear power plants produce the world's most dangerous toxic waste?

Finland enables significant cross-border impact on Sweden, the environment, health and other interests.

Milkas does not accept that Finland exports food with elevated levels of unnatural radionuclides, which Swedes ingest and give us an increased number of mutational diseases.
Milkas does not accept that Finland exports goods of various kinds that contain unnatural radionuclides, which ultimately end up in the cycle, into the soil, thus in our food and into our tissues, the tissues of animals and plants.
Milkas does not accept such a risky industry as nuclear power plants are, where STUK must be prepared for a worst-case scenario with a catastrophic explosion and radioactive clouds to Sweden.
The law of physics: Everything spreads.
Milkas does not accept the weekly radioactive emissions from the nuclear power plant's sewage into the Baltic Sea, where the radionuclides spread, are taken up by plants and animals and also enter the Swedes' food chain.
Milkas does not accept the daily radioactive emissions from the nuclear power plant's chimneys and the increasing emissions from fuel breaks. Some radionuclides come to Sweden with winds and water.

STUK should **improve** the level of safety in the use of nuclear energy, not just maintain the current level of safety.

As this text shows, we must reduce the unnatural radionuclides in our cycle to the 1945 level, in order to reach the correct level of safety.

The waste?
The technology to transmute waste in new nuclear power plants is dead.
Researcher Janne Wallenius, who has a doctorate in the subject, says that it is not possible.

Half of the waste is still radioactive when the sun goes out, and can therefore still cause mutations.

Claes Thegerström, who worked on the nuclear waste issue for 30 years, CEO of SKB and presented the KBS method, the method that Finland first chose, said that if they had the knowledge they have now about the dangerous radionuclides, they would never have built any nuclear power plants.
14. Does STUK know about the decay chains of radionuclides?
15. Does STUK know about the KTH researchers, led by Professor Leygraf? In 2017, Leygraf received the finest corrosion prize there is.
On November 21, 2022, they presented a scientific article in Corrosion Science about rapid corrosion of the copper canister, which could break after just 100 years.

16. Does STUK consider it deeply immoral to produce more waste in nuclear power plants, now that we know that we have to transmute the waste, since the KBS method with copper canisters does not work?

If STUK calculates how much the cost of transmutation of the waste will be, STUK will understand that no country can afford to produce more waste in a nuclear power plant.

Finland and other countries must greatly improve the development of licensing and regulation of old and new nuclear power plants towards more risk awareness.

Only when STUK has informed the public about how dangerous nuclear power plants are, will we succeed in shutting down nuclear power plants.
Milkas believes that
It is impossible to enable safe use with new nuclear power plants with new technologies and business models.

Sweden should continue to participate in upcoming consultations on the environmental assessment.

Further views on the focus and scope of the environmental assessment.

Where do the unnatural radionuclides come from?

1. The unnatural radionuclides first came from atomic bombs over Japan.
2. Then followed 2060 atomic bomb test explosions, of which 500 were carried out in the atmosphere or underwater in the 1950s.
In the 1950s, it was discovered in the USA that children had radioactive Strontium-90 in their baby teeth and that cancer rates were increasing.
In 1963, test explosions in the air were banned.

3. But after 1963, underground test explosions have still leaked radionuclides, which have spread all the way to Sweden, and have been measured several times by the Swedish Environmental Protection Agency.

4. Since the 1970s, all nuclear power plants have been releasing radionuclides daily through their tall chimneys into our atmosphere. A nuclear power plant releases about 58584294549500 Bq = number of decays/second from 3180000000 m3 of radioactive gas emissions. (Lovisa, Fortum Annual Report 2020.)

5. About once a week they release contaminated wastewater into our cycle. About 16090000000000 Bq. (Lovisa, Fortum Annual Report 2020.)

6. In the event of a fuel failure in our old nuclear power plants, the emissions to air and water become extra large.

7. In 1986 the Chernobyl disaster. Ongoing releases to the groundwater. There is still no solution for how to decontaminate the meltdown.

8. In 2011 the Fukushima disaster. Ongoing releases to the groundwater. There is still no solution for how to decontaminate the meltdown. Contaminated water is also being released into the sea every week.

9. Every year several releases are measured over Sweden from an unknown country of origin.

10. After a while, all different types of nuclear waste repositories have started to leak radionuclides into the cycle, and the repository has had to be repaired.

Explanation in easy Swedish how cancer is formed:
Radioactive ionizing radiation causes mutations mainly in immature and fresh cells.
What is evolution? = cells are changed by radionuclides.

When a radionuclide decays, radioactive ionizing radiation is formed, which has the ability to cut the DNA strand.

If both DNA strands break, they cannot be repaired. If 4-5 mutations occur in the cell, the cell may die, but if growth is disrupted so that the cell begins to multiply rapidly, then a cancer cell may have formed.
Cancer cells arise every day in our bodies, which our strong immune system fights off.
In older age, the immune system weakens.

1. There must be growth factor receptors that form a mass of immature cells that mature and become fresh cells.

2. There must be radionuclides that decay into alpha or beta radiation near the immature or fresh cell in the tissue.
Achondroplasia = short stature is due to a mutation in the gene for growth factor receptor called FGFR3. Between 80-90% are caused by new mutations.
Short people cannot get other mutational diseases such as cancer, even if they live an unhealthy lifestyle and, for example, smoke.

3. There must be a lot of immature or fresh cells.
In inflammation, many new cells are formed to heal the inflammation.
The sun can cause inflammation in the skin, which causes many new cells to form during healing.
Newly formed cells are sensitive to radionuclides.
(Healthcare uses this. The cancer cell is a fresh cell, sensitive to radiation, while older cells survive the radiation.)
The sharp needles of asbestos penetrate the cells of the lung tissue and cause inflammation.
Poisons such as Dioxin and PFAS cause inflammation in various tissues.
Viruses cause inflammation, for example, in the cervix. Fresh new cells are formed, which are sensitive to the radiation of radionuclides.
Blood cancer is the most common form of cancer.

How do radionuclides enter the body, into the tissue?

In the event of large releases, we inhale radionuclides.
In everyday life, we, the animals and plants inside us get most of the radionuclides through food.
Different substances are absorbed by different tissues, and how long they remain in the body varies.
The radionuclides that are absorbed by the skeleton remain in the body the longest, and therefore have time to do the most damage.
Blood cancer is thus the most common form of cancer.

New releases are added to yesterday's releases.

Since many radionuclides are long-lived, the new emissions increase the radionuclides in our circulation, thus in our food and into our tissues and the mutational diseases increase.

Milkas does not accept this increase.

Women should not have to worry about the possibility of fetuses and children suffering from mutational damage.
Milkas demands that radionuclides be reduced to natural levels, to 1945 levels.

Milkas demands that uranium mining be banned in Sweden, because uranium mining increases the radionuclides in our circulation.

Milkas demands that uranium be classified as a nuclear material and always controlled. Uranium can decay into the world's most dangerous radioactive substance, plutonium. A handful of uranium is enough to kill all of humanity.

Cancer development in Sweden, see the cancer appendix.

We have unique disease statistics from the 19th century to the present day.

There you can see that the mortality rate from mutational diseases was fairly constant until 1950. Then the mortality rate begins to rise.
The report was published in 2013, but the curves have risen at the same rate until 2024.

If you draw a horizontal line in the diagrams, **Appendix 2,** at 1950, the lower part will show the cancer cases that occurred due to the mutating radionuclides of the natural background radiation. The cancer cases that are above the horizontal line have been caused by the human intake of radionuclides from atomic bombs and higher up on the diagram, our radionuclides come from nuclear power emissions.
Although almost every working teenage boy smoked in the 19th century, this is not reflected in the statistics.
This may be because the tobacco soil was not contaminated by radioactive fallout.
Only after the atomic bombings after 1945 did soils become contaminated with radionuclides, whose substances were absorbed by tobacco plants. A radionuclide often decays in many different stages and over different periods of time before the final product becomes a stable element.

In nuclear waste, half of the radioactivity remains when the sun goes out, unless we process the radionuclides with random mutation, so they quickly become stable elements.

Radionuclides inside the body cause mutations in cells and
DNA, RNA, microRNA, mRNA, tRNA, rRNA can mutate.
When proto-oncogenes mutate, they can become oncogenes that turn the cell into a cancer cell.
New research shows that more and more of our diseases are mutational diseases.
Ex: Proteins mutate: Alzheimer's, ALS, mad cow disease.
Viruses mutate: covid-19, bird flu, swine flu, other pandemics, Ebola HIV, monkeypox.
Bacteria mutate: resistant bacteria.

WE should not accept that nuclear accidents happen, and that nuclear power plants produce the industry's most dangerous and long-lived radioactive poison.

Life on Earth has no future if we do not manage to reduce the amount of radionuclides to the natural 1945 level, to which humans and nature's immune system are adapted.

Mutations are already accelerating, which has resulted in the extinction of species for plants and animals. The mutations could easily wipe out humans.

Norrköping, Sweden 2025-08-22
Britta Kahanpää
Administrator, Environmental Movement's Nuclear Waste Secretariat, Milkas