

CNEN - CDTN

SINCE 1952

CDTN

NUCLEAR DEVELOPMENT CENTER

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THE TOUR

The first part of the trip was a 40 minutes lecture about the history of the center and its functions. After that, we visited the isolation test labs. There a chemist performed experiment to make sure the radioactive materials were secure and did not leak inside concrete tubes. Concluding our visit, we were taken to a building where things such as food and beverages were irradiated with gamma radiation to last longer.



THE LECTURE

We learned mostly about radiation itself. It is divided in three groups: alpha, beta and gamma. The alpha is composed by two protons and two neutrons, and it can be blocked by our skin. The beta radiation is composed only by energy it can only by energy and it can be blocked by lead. The gamma radiation is composed only by energy and it can only be blocked by a thick layer of concrete. a substance emits radiation when the nucleus of its atoms are unstable

The Lab

There we were taught about the process of cementation, which makes the radioactive trash safe to be thrown away. This process involves a chemical reaction of acid + bases and stops the radiation from leaking. Since it should last for more than a thousand years, the pieces were thrown into water, at the floor and even pressed, following the Brazilian safety laws.

IRRADIATION LAB

Radiation can be used in medical exams, medical treatments and in food and object sterilization.

Sterilization by radiation is the safest method, because it doesn't leave residue. In developed countries, that is how they clean the food that is given to immunodeficient patients. The radiation kills the microorganisms without affecting the food. It also makes it last longer. The machine that emits radiation is kept in a special building that resists to almost everything, from an earthquake to an airplane crash. This is necessary because if someone gets close to it, the person dies in hours.





CONCLUSION

This tour taught us the power of radiation! Also learned that it can be used for good purposes. It was a very interesting and informative field trip.

A grayscale photograph of a modern building at night, illuminated by streetlights. The building has a flat roof and large windows. In the foreground, there are several streetlights and a small tree. The word "THANKS!" is overlaid in large, white, serif capital letters across the center of the image. The background shows a dark sky with some distant lights.

THANKS!