



Finland

International Atomic Energy Agency

Technology Infrastructure for Prevention, Detection, and Responses Regarding Nuclear

Nuclear energy plays a critical role in energy production such as electricity generation. It is also used in many other important areas such as industry and medical applications. Despite all these benefits, nuclear energy can be very harmful and dangerous. We can give many examples that support this view. One of these examples is usage of nuclear weapons in a war situation such as World War 2. We as Finland like and want to discuss this topic and find beneficial solutions about the safety of nuclear energy sources by taking help from the new technological developments.

Nuclear energy plays a great role in Finland's energy strategy . Finland has five nuclear power units in operation and 42% of electricity production comes from nuclear energy. Currently there are no ongoing nuclear power plant projects. However the construction of the world's first underground final repository for spent fuel is being finalized at the Olkiluoto site. The first operating licence application has been submitted to the Government. The operation is expected to start in the mid 2020's.

Finland has played a significant role in electricity generation by investing in nuclear energy since the 1970s. This process has been shaped by the goals of increasing energy security, reducing external dependency and reducing carbon emissions. In 70s Finland decided to build the first nuclear source of the country. And since then, nuclear energy has gained a foothold in Finland. Of course we attach great importance to the security. We are trying to prevent bad situations with many kind of precautions.

Finland's cooperation with the IAEA and its investments in technology demonstrate that it supports the safe use of nuclear energy. Nuclear safety covers measures related to the operation of nuclear reactors, waste management and protection of radioactive materials. Finland is really careful about these topics. Finland has many nuclear waste repositories. The biggest example of this is Onkalo Nuclear Waste Repository. The Onkalo facility is a deep underground storage facility, described as a "massive underground tomb." It can store 6500 tons of waste in iron casks. The idea of such a facility is to store the waste safely underground, out of human reach, long enough for it to become harmless. This project set a great example for other countries. One of the biggest reasons of Finland being a very safe country is the results of Fukushima tests. Fukushima tests are a type of test which we invented after the nuclear accident in Fukushima. These tests main purpose is to test the nuclear energy sources' security and their resistance to natural disasters. Finland approved one more time that our nuclear sources are safe by passing this test.

As Finland, we are planning to further develop our already advanced security system with much newer technologies. Our proposal is to use thorium that is not as dangerous and radioactive as uranium, but is just as functional. Thorium is more abundant than uranium and is easily accessible, and also, as we mentioned earlier, it produces much less harmful waste and has the property of self-cooling. In uranium reactors, cooling systems are usually based on active cooling systems. When a problem occurs in reactors, it can become difficult to control the heat if these systems fail. However, thorium reactors can operate more safely without any interference from outside thanks to their natural cooling properties.

In short, we are extremely open to new and advanced ideas and would especially like to discuss the usage of thorium instead of uranium.

RESOURCES

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