



**Topic:** Nuclear and Radiation  
Regulatory Systems

**Committee:** International Atomic  
Energy Agency (IAEA)

**Chairs:** Emilio Hernández Rosales,  
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## **Background**

The International Atomic Energy Agency (IAEA) is the world's centre for cooperation in the nuclear field and seeks to promote the safe, secure and peaceful use of nuclear technologies. In modern times now the use of radiation is increasing.

There are many beneficial uses of radiation but the way people use it is the main problem. "Modern and sophisticated radiation-based technologies, advanced and powerful radiation equipment, and complex procedures, may present significant challenges to keeping radiation doses at acceptable levels." (Mroz D, 2019)

The International Conference on Effective Nuclear Regulatory Systems: Facing Safety and Security Challenges, was held in Moscow, Russian Federation, from 27 February to 3 March 2006, it was created for government regulators and industry representatives, to share their perspectives and experience in addressing these challenges that transcend national boundaries and propose solutions for this problem.

In 2018 twelve countries produced at least one-quarter of their electricity from nuclear plants. France gets around three-quarters of its electricity from nuclear energy; Hungary, Slovakia and Ukraine get more than half from nuclear, whilst Belgium, Sweden, Slovenia, Bulgaria, Switzerland, Finland and Czech Republic get one-third or more. South Korea normally gets more than 30% of its electricity from nuclear, while in the USA, UK, Spain, Romania and Russia about one-fifth of electricity is from nuclear. Japan is used to relying on nuclear power for more than one-quarter of its electricity and is expected to return to somewhere near that level.

One of the reasons why these plants are highly contaminants is because the reactor core contains uranium fuel, which is formed by ceramic pellets, where each one of these produces at least the same amount of energy as 150 gallons of oil; these pellets are located end-to-end in a 12-foot metal fuel rods, called fuel assembly, and a reactor is made by many of these.

Nuclear radiation is principally causing health problems. Radiation released from nuclear plants, weapons and reactors has two ways of harming the body, it can directly kill cells or it can affect the DNA by causing mutations, and if it gets worse it can cause cancer, and now it has gotten to a point where even children are exposed to radioactive material from eating contaminated vegetables. People are exposed to about 0.24 rem (2.4 mSv) per year from natural background radiation in the environment, the IAEA says.

It is important to look for regulations to solve and control this problem before it becomes bigger.

## References:

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