

NUCLEAR POWER MERITS AND DEMERITS



Vocabulary

Reactor : An apparatus or structure in which fissile material can be made to undergo a controlled, self-sustaining nuclear reaction with the consequent release of energy

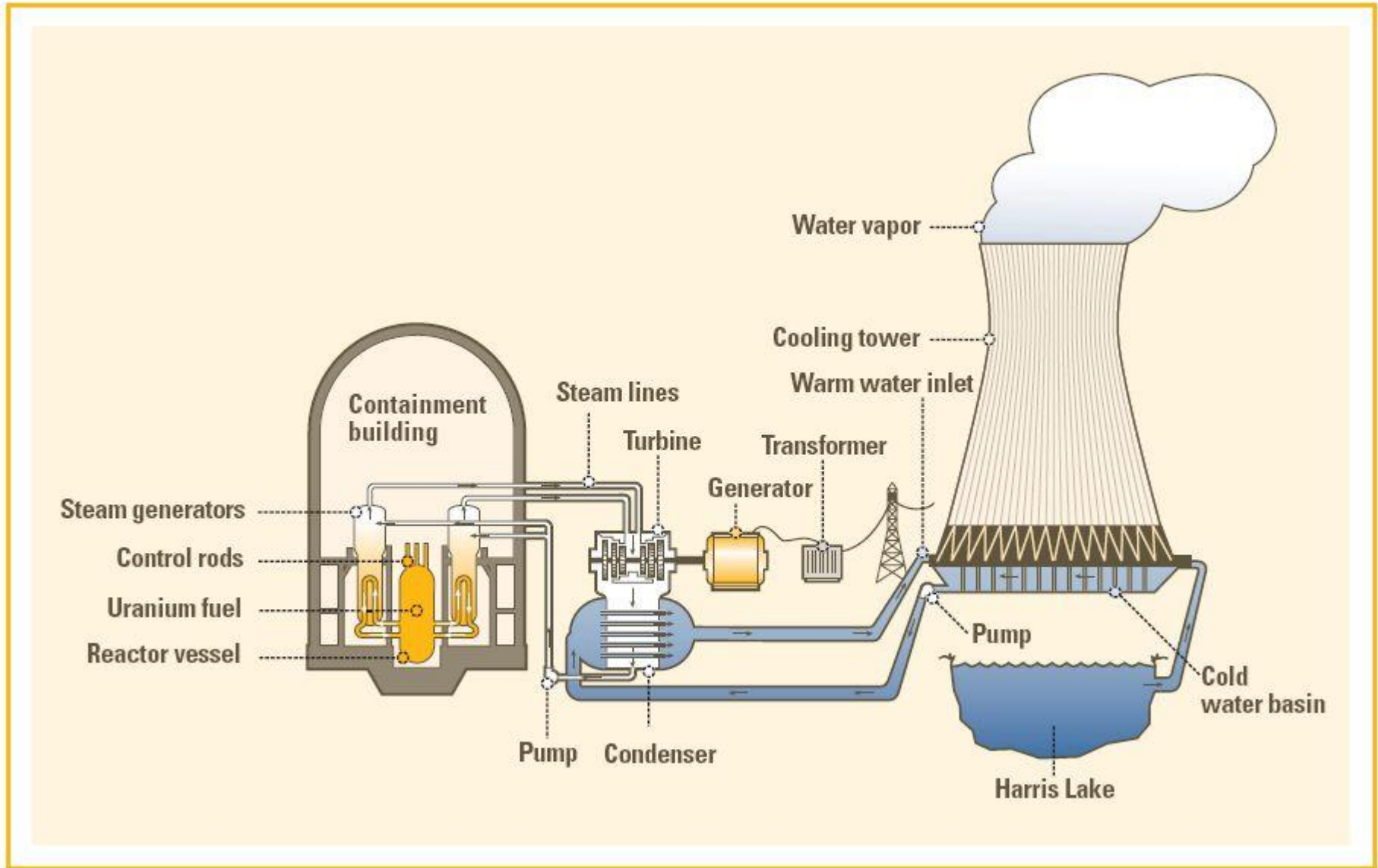
Fission : Division or splitting into two or more parts

Extraction : Remove or take out, especially by effort or force

Turbine : A machine for producing continuous power in which a wheel or rotor, typically fitted with vanes, is made to revolve by a fast-moving flow of water, steam, gas, air, or other fluid

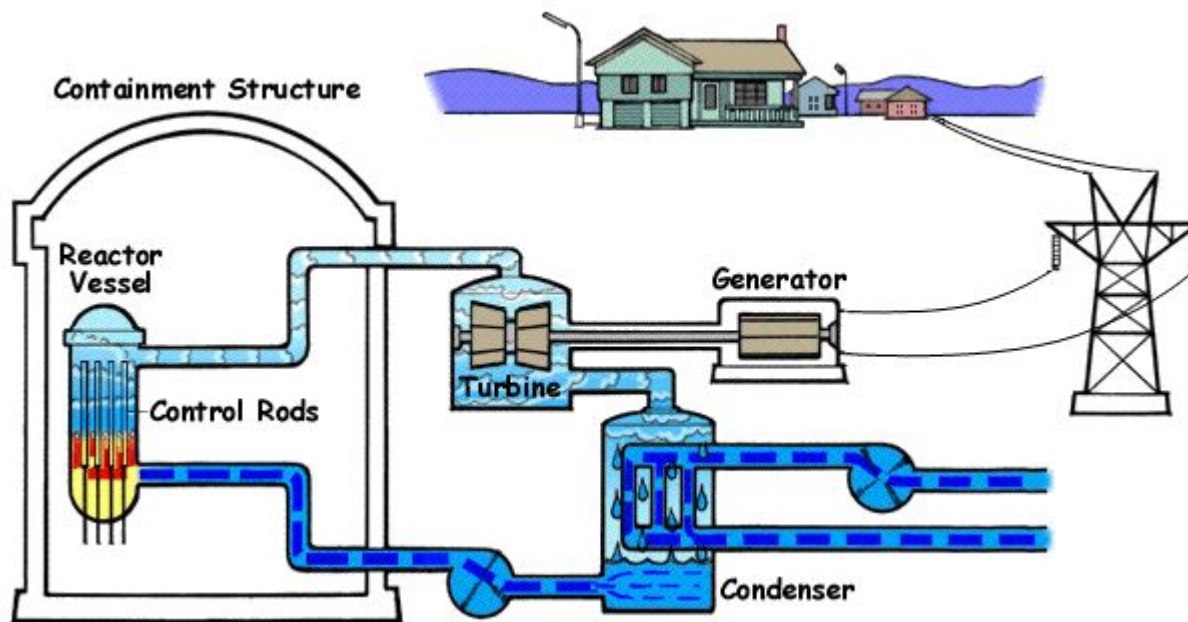
Contentious : Causing or likely to cause an argument; controversial

Emissions : The production and discharge of something, especially gas or radiation



- Nuclear power, also called nuclear energy, is power that is produced by human supervised nuclear reaction.
- It starts with the extraction of uranium, a naturally occurring element buried in the earth following its formation.
- Uranium is radioactive and therefore is dangerous to handle and dispose of, but when put into a nuclear power system, it reacts with other elements in a fission reaction that splits the uranium nucleus.
- This reaction creates heat, which is used as a heat source that turns water into steam, which drives a turbine, which then spins a generator to produce electricity.
- The nuclear power plant stands on the border between humanity's greatest hopes and its deepest fears for the future.

Working of a Nuclear Power



Nuclear power is a highly contentious issue in the environmental community.

Nuclear power pros: Nuclear energy is carbon-free, making it an excellent solution to our climate change challenges.

Nuclear power cons: The toxic waste, used or depleted uranium, which is still radioactive and highly dangerous, is very difficult to safely dispose of. The extraction of uranium ore is also a polluting process.



MERITS OF NUCLEAR POWER

- Nuclear energy has the lowest impact on the environment since it does not release any gases like carbon dioxide, methane.
- It is very powerful and efficient than other alternative energy sources and at present, a small portion of world's electricity comes through it.
- Nuclear energy can be produced from nuclear power plants even in the cases of rough weather conditions.
- It is one of the major sources of electricity throughout the nation. It has a continuous supply and is widely available, has huge reserves and is expected to last for another 100 years.
- Production of nuclear energy needs very less amount of raw material hence transportation of fuel is much easier than fossil fuels.

DEMERITS OF NUCLEAR POWER

- Nuclear energy helps to produce more weapons and they are hot targets for militants and terrorist organizations.
- Nuclear bombs were dropped over Hiroshima and Nagasaki and even after five decades of the mishap, children are born with defects because of the nuclear effect.
- Radioactive wastes take almost 10,000 years to get back to the original form.
- Unlike fossil fuels which are available to most of the countries, uranium is very scarce resource and exist in only few of the countries.
- The waste produced by nuclear reactors needs to be disposed off at a safe place since they are extremely hazardous and can leak radiations.
- People who work at nuclear power plants and live near those areas are at high risk of facing nuclear radiations.

Questions

- 1) Name 5 countries who have nuclear power plants.
- 2) Name 5 countries who have nuclear weapons.
- 3) What were the effects on people of Hiroshima and Nagasaki of the Nuclear bombs?
- 4) Should a country make its own Nuclear weapons? Why?
- 5) Should we use the Nuclear energy as an alternative source of energy?

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Aditi	12.09.2015	Formatted the name of the presentation