



# NUCLEAR ENERGY

Presented by: Fernandez, Tuazon

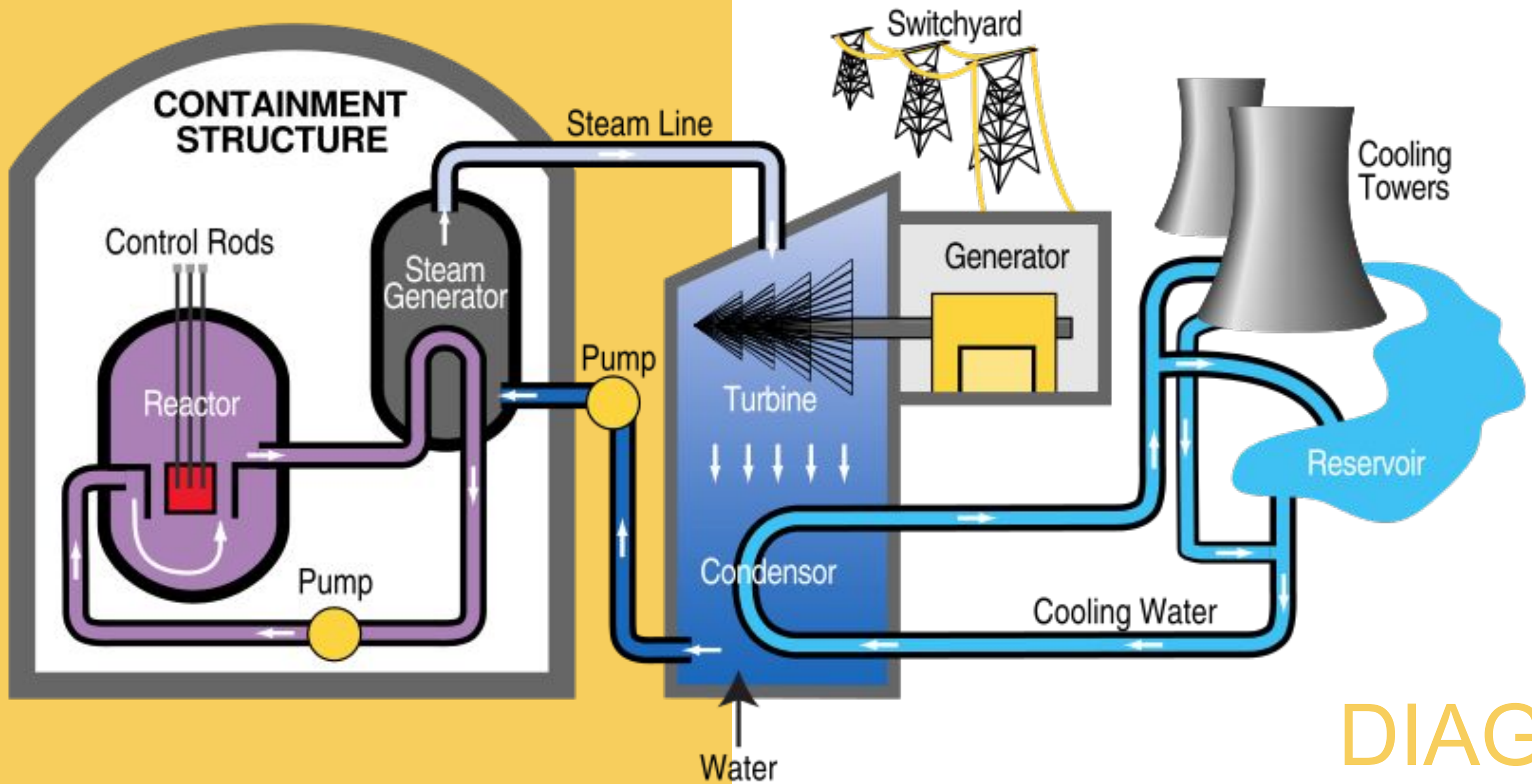
# Key Terms

Nuclear Energy - the energy released during nuclear fission or fusion, especially when used to generate electricity

Nuclear Fission - the splitting of an atom's nucleus into two smaller nuclei

U-235 - the fuel for the reaction is a large atom that has an unstable nucleus such as uranium-235.





DIAGRAM

NUCLEAR ENERGY (POWER PLANT)

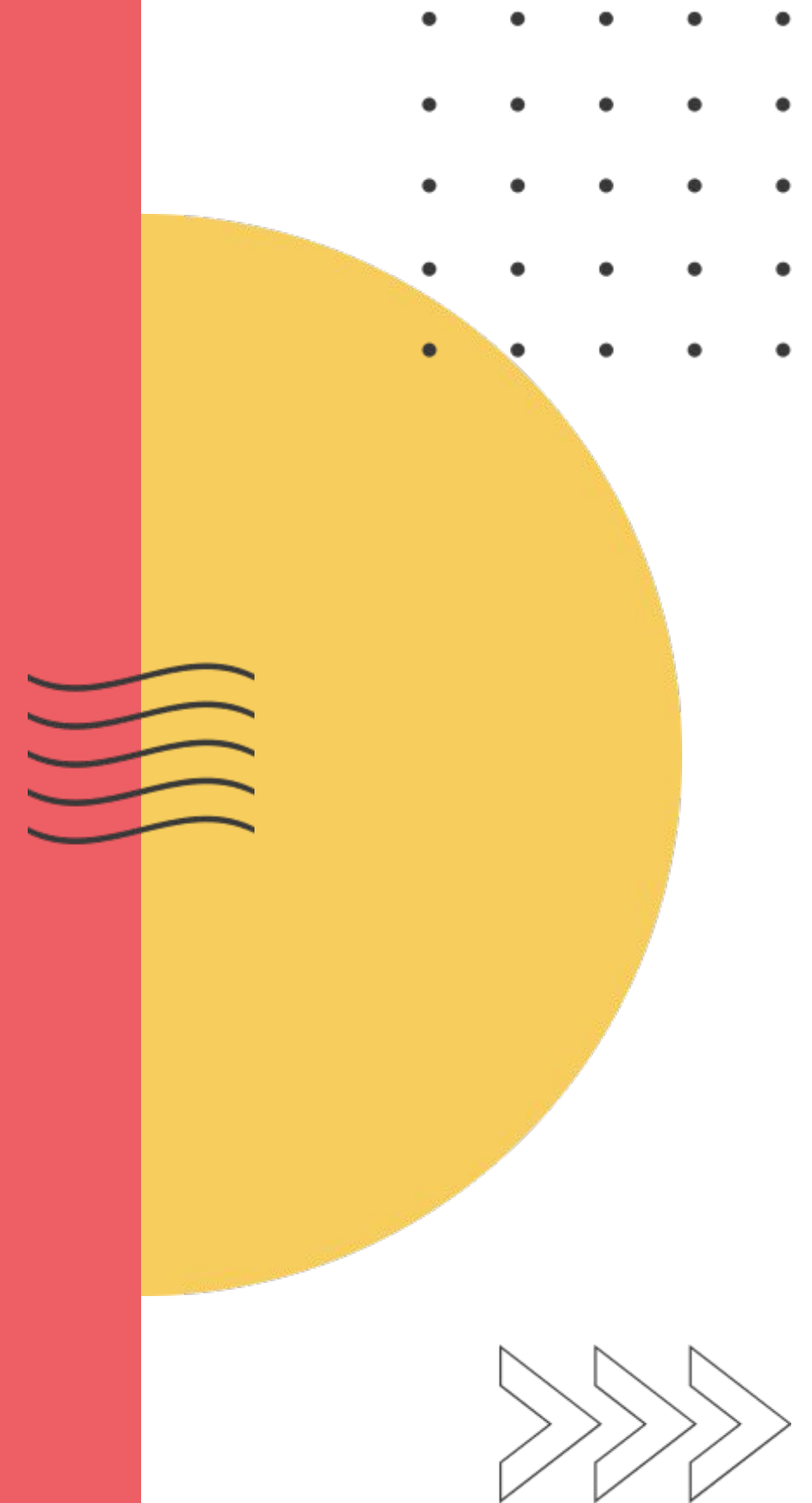
# PROS AND CONS

## • Pros

- Nuclear energy does not produce polluted gases
- It does not contribute anything to global warming
- It has very few fuel costs
- It has a very long lifetime

## • Cons

- The waste of nuclear power stations are radioactive
- Safe disposal could be difficult and expensive
- Could affect marine life
- The cost of building nuclear power stations could be very expensive.



# BEST PLACE TO BUILD PLANT

The best place to build Nuclear power is near water, like a river or lake, because they need water to operate.




- When the neutron hits the U-235(uranium-235) nucleus, the nucleus splits apart into two smaller nuclei and two or more neutrons.
- In a nuclear power plant, the heat released from the reactions is used to change water into steam. As in other types of power plants, the steam then turns the blades of a turbine to generate electricity.
- Two kinds of hydrogen nuclei are forced together in a fusion reaction.
  - hydrogen-2 : has one proton and one neutron
  - hydrogen-3 : has one proton and two neutrons
- reactor vessel - the section of a nuclear fission occurs
- fuel rods - the reactor contains rods of U-235, called fuel rods
- control rods - by placing this rods, that are made of the metal cadmium between the fuel rods, reactions are controlled
- meltdown - a condition when fuel rods generated so much heat that they started to melt

# IMPORTANT NOTES





# Mini Quiz

- What is Nuclear Fission?
  - What are the two types of hydrogen nuclei that are forced together in a fusion reaction? What are they composed of?
  - What is a “meltdown”?
  - Where is the best place to build nuclear power plants?
  - What does the "U" in U-235 stand for?
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# Answers

- What is Nuclear Fission?
  - the splitting of an atom's nucleus into two smaller nuclei
- What are the two types of hydrogen nuclei that are forced together in a fusion reaction? What are they composed of?
  - hydrogen-2 : one proton, one neutron
  - hydrogen-3 : one proton, two neutrons
- What is a “meltdown”?
  - a condition when the fuel rods generated so much heat that they started to melt.
- Where is the best place to build nuclear power plants? Why?
  - near water, because they need water to operate
- What does the "U" in U-235 stand for?
  - Uranium







# thank you for listening!

Works Cited:

- <https://www.bbc.co.uk/bitesize/guides/zyqnrwx/revision/2>
- Prentice Hall, Eath Science (SCIENCE EXPLORER)