

Nuclear Power – Pros and Cons

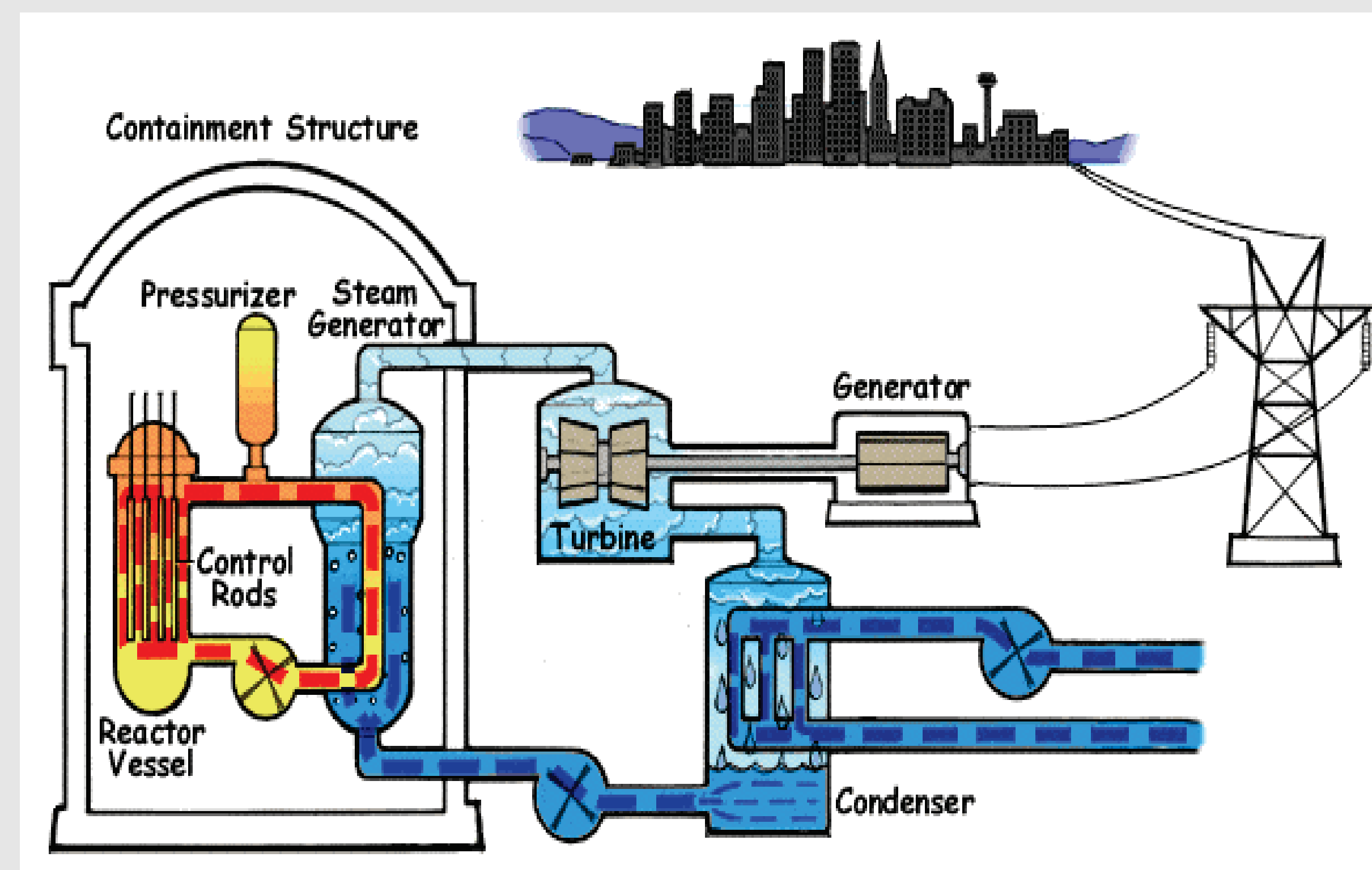
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Pros

- The technology needed for Nuclear Power plants is readily available, and can be made in almost any environment. Once constructed, the power plant has low operation costs. A single plant has the ability to generate a vast amount of electrical energy, meeting industrial and city needs.
- The existing and future nuclear waste can be diminished through waste recycling, as well as waste reprocessing (breeder reactors).
- Nuclear Energy provides a constant source of energy, running 24 hours a day, 7 days a week, without disruption or limitations depending on weather.
- Since 1990 Nuclear Power has accounted for about 20% of America's energy.
- Of all the nuclear meltdowns and disasters not one has been caused by system failure but rather through human negligence/ error or natural disaster.

Overview



Summary

Nuclear reactors work in a fundamentally similar way as many engines: heat water to steam, use the steam's pressure to drive some machine. Radioactive fuel rods heat pressurized water tubes, and then superheated water is piped into a turbine hall, where it vaporizes into steam. The steam drives giant turbines that in turn spin big electric generators, thus generating power.

References

1. Olson, Mary. *There Is No Credible Solution to the Nuclear Waste Problem.*
2. Sovacool, Benjamin K. *Nuclear Accidents Are Common and Pose Inevitable Safety Risks.*
3. <http://www.eia.gov/nuclear/>
4. <http://nuclearinfo.net/Nuclearpower/AboutThisSite> Dr. Andrew Martin (Lecturer, School of Physics, University of Melbourne) copyright 2013

Cons

- When compared to other energy sources, nuclear power ranks higher than oil, coal, and natural gas systems in terms of fatalities, second only to hydroelectric dams.
- The meltdown of a 500-megawatt reactor located 30 miles from a city would cause the immediate death of an estimated 45,000 people, injure roughly another 70,000, and cause \$17 billion in property.
- Every nuclear power reactor annually generates 20-30 tons of high-level nuclear waste.
- Unshielded, it delivers a lethal dose in seconds and will remain a hazard for at least 12,000 human generations.

