

# Point Lepreau Generating Station Overview

January 2007

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A V I T A L P A R T O F N E W B R U N S W I C K



**Énergie NB Power**

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Nucléaire Nuclear



# System Map - Generation



- Thermal – 1,923 MW
- Combustion Turbine – 527 MW
- ◆ Hydro – 884 MW
- ▼ Nuclear – 635 MW
- Total – 3,969 MW

## Point Lepreau Generating Station

- Essential part of generation mix
  - not subject to fuel price fluctuations

# Point Lepreau Generating Station

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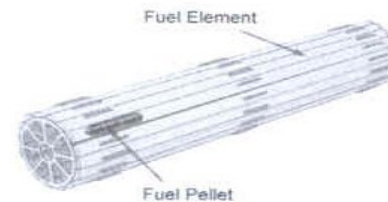
- 675 employees
  - large socioeconomic effects
  - ~100 million O &M budget
- 635 MW net CANDU 6 reactor
- Commissioned in 1983
- Supplies approximately 25% -30% of in-province load
- Since 1983, station's in-service capacity factor is 83%



# Facts about CANDU

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- CANDU - 6 stands for CANada Deuterium Uranium
- It is a pressurized heavy water reactor that uses natural uranium as its fuel

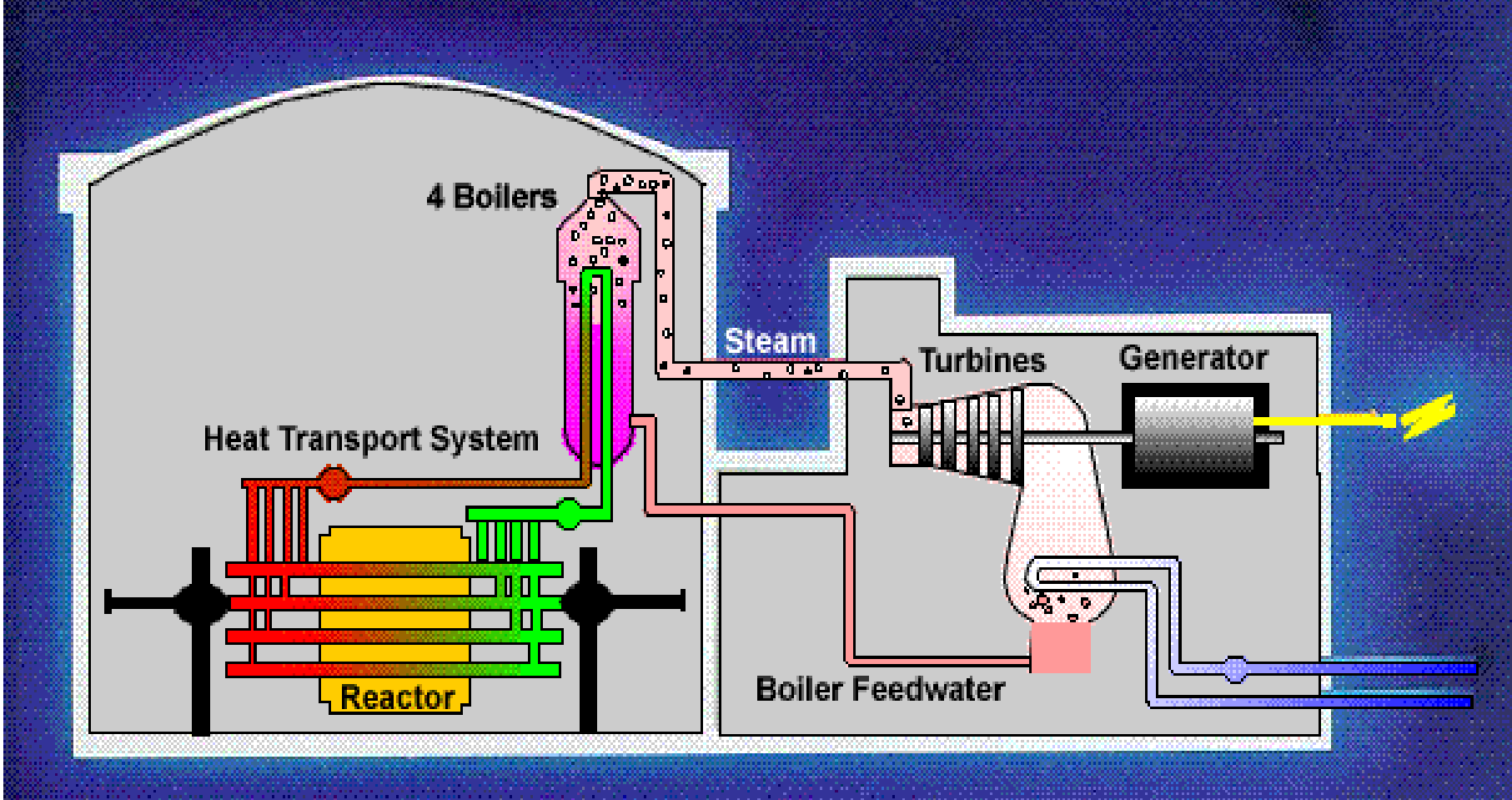


*A single fuel bundle can produce enough electricity for the average home for 100 years.*



*You would need 400 tonnes of coal or 1,500 barrels of oil to produce the same amount of electricity.*

# How a CANDU works



# Environment Management

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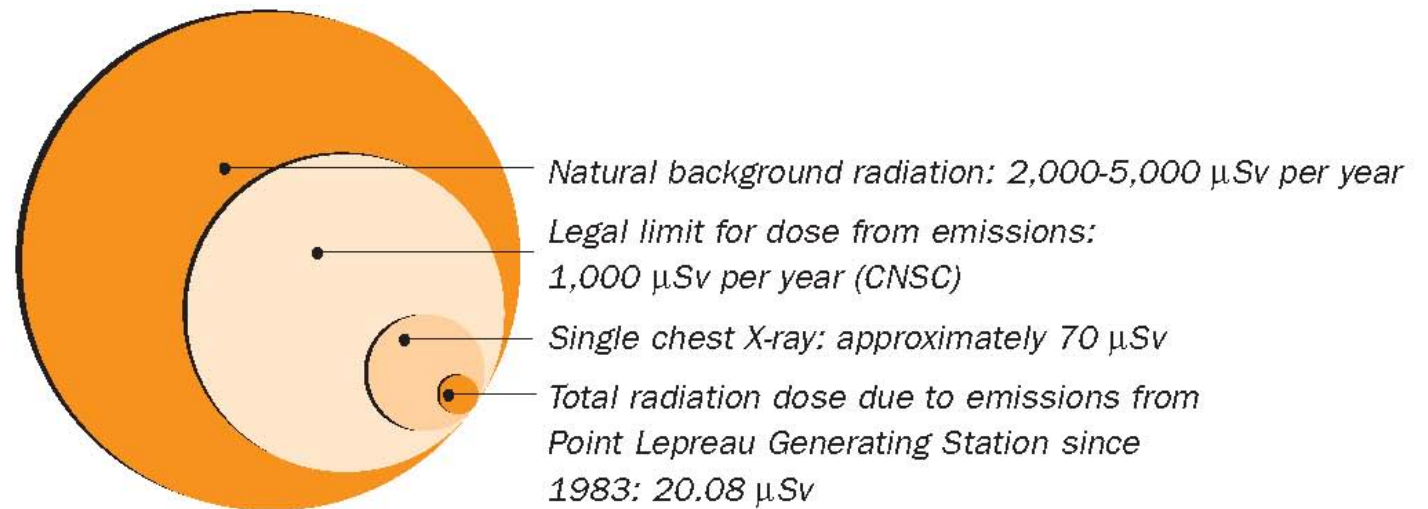
- Point Lepreau Generating Station is important to NB Power's climate change and sulphur dioxide initiatives
- ISO-14001 Registered since December 2001
  - Re-registered in 2004
- All radioactive waste and irradiated fuel stored on site
- Since 1983, Point Lepreau Generating Station has generated 105 million MWh electricity
- Avoided emissions since 1983
  - SO<sub>2</sub>                    1,433,000 tonnes
  - NO<sub>x</sub>                    325,000 tonnes
  - CO<sub>2</sub>                    81,000,000 tonnes



# Environmental Performance

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Total radiation dose due to emissions:



\* Please note all doses are in microsieverts ( $\mu\text{Sv}$ ).

# CANDU Safety Performance

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- CANDU reactors are among the safest in the world
- Redundancy - using at least two components or systems for a particular function so that one will be available if the other is not
- Diversity - using two physically or functionally different means for a particular function in case there are flaws in either method
- Protection by design - seismically and environmentally qualifying all safety systems, equipment and structures required to support safety



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