

# **COMMUNITY OPEN HOUSE**

## **MANITOBA HYDRO**

### **BRANDON GENERATING STATION**

#### **ENVIRONMENTAL LICENSE REVIEW PROCESS**

Manitoba Hydro is conducting a review of the Brandon Thermal Generating Station Environmental License. The station currently operates under a license received from Manitoba Conservation in 1993, and last updated in 2001.

The license review is required in order to reflect the continued operation of the station at Brandon until 2020. The license review process will assess the operating role of the station and the intended upgrades and modifications to the plant. Upgrades to the plant will include new pollution control equipment to reduce air emissions.

A community open house to present the details of the station operation until 2020, the license review process, and the opportunities for public participation within this process will be held on:

Date: Wednesday, June 30, 2004  
Time: 4:00 pm - 8:00 pm  
Place: Manitoba Hydro Thermal Generating Station  
2201 Victoria Avenue East  
Brandon, Manitoba

### **EVERYONE WELCOME !**

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***FOR FURTHER INFORMATION CONTACT:***

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Plant Manager  
Brandon Generating Station  
XXX-XXXX

Mr. Dave Olinyk  
Sr. Environmental Officer  
Manitoba Hydro (Winnipeg)  
474-3690

Mr. David Klassen  
Environmental Scientist  
UMA Engineering Ltd. (Winnipeg)  
928-7411

# WELCOME

## PURPOSE OF THIS PUBLIC OPEN HOUSE

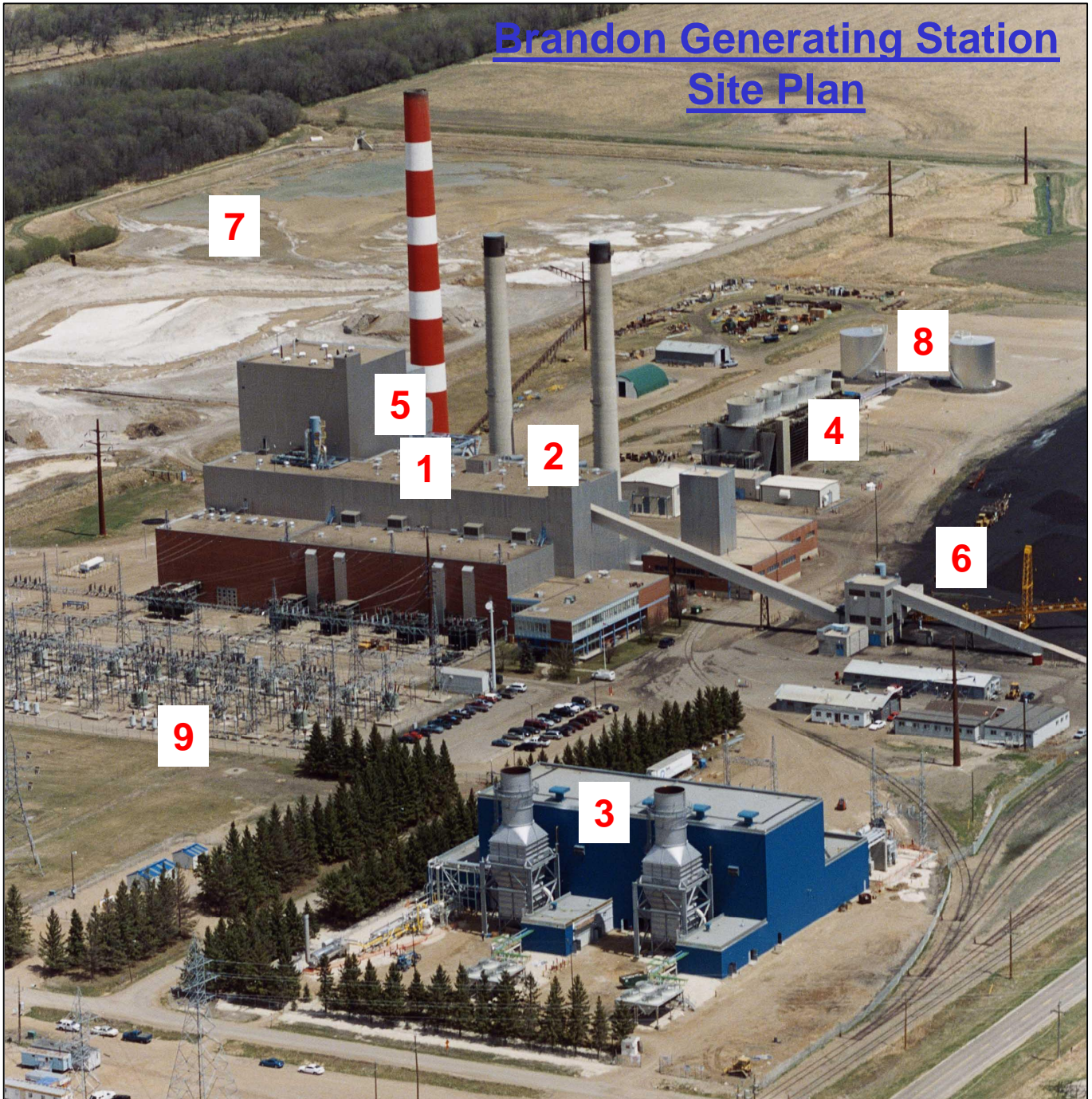
- ◆ To provide information on the process that is being undertaken to Review the [Environment Act Licence](#) that governs Brandon Generating Station's operation of Unit 5.
- ◆ To provide a forum to [solicit your comments](#) at the start of this review process.
- ◆ We welcome your comments and input!

WE WOULD BE PLEASED TO TALK WITH  
YOU AND ANSWER ANY QUESTIONS

# WHAT IS BRANDON UNIT 5?

- ◆ Unit 5 is a thermal electric generating unit.
  - It generates electricity by heating water to produce steam that rotates a turbine.
  - A generator attached to the steam turbine converts the rotational energy into electrical energy.
  - Unit 5 burns low sulphur, low ash, and high heat value coal as a fuel source to heat the water.
- ◆ Unit 5 has a maximum power output of 105 MW.
- ◆ Unit 5 is one of five thermal generators on Manitoba Hydro's system and the only one that is coal-fired.
- ◆ Unit 5 operates under Environment Act Licence No. 1703R issued by Manitoba Conservation.

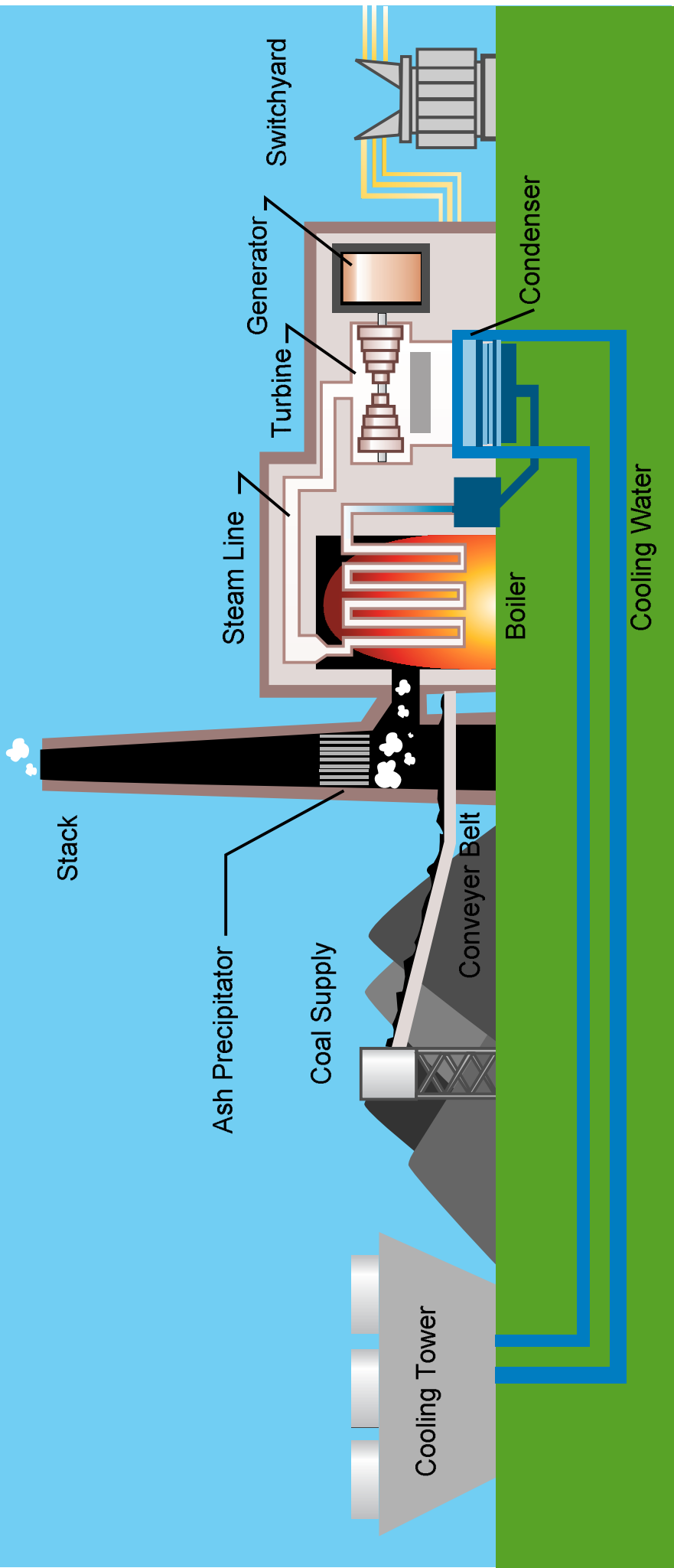
# Brandon Generating Station Site Plan



## LEGEND

1. Unit 5 – commissioned in 1969, coal fired, operates under Environment Act Licence 1703R.
2. Units 1-4 – commissioned in 1958, coal-fired, mothballed in 1996.
3. Units 6-7 – commissioned in 2002, natural gas and fuel oil-fired, operates under separate Environment Act Licence (2497R).
4. Cooling Tower.
5. Electrostatic Precipitator.
6. Coal Pile and Conveyors.
7. Ash Lagoon.
8. Fuel Oil Tanks for Combustion Turbine Units 6-7.
9. Switchyard.

# Coal-Fired Power Plant







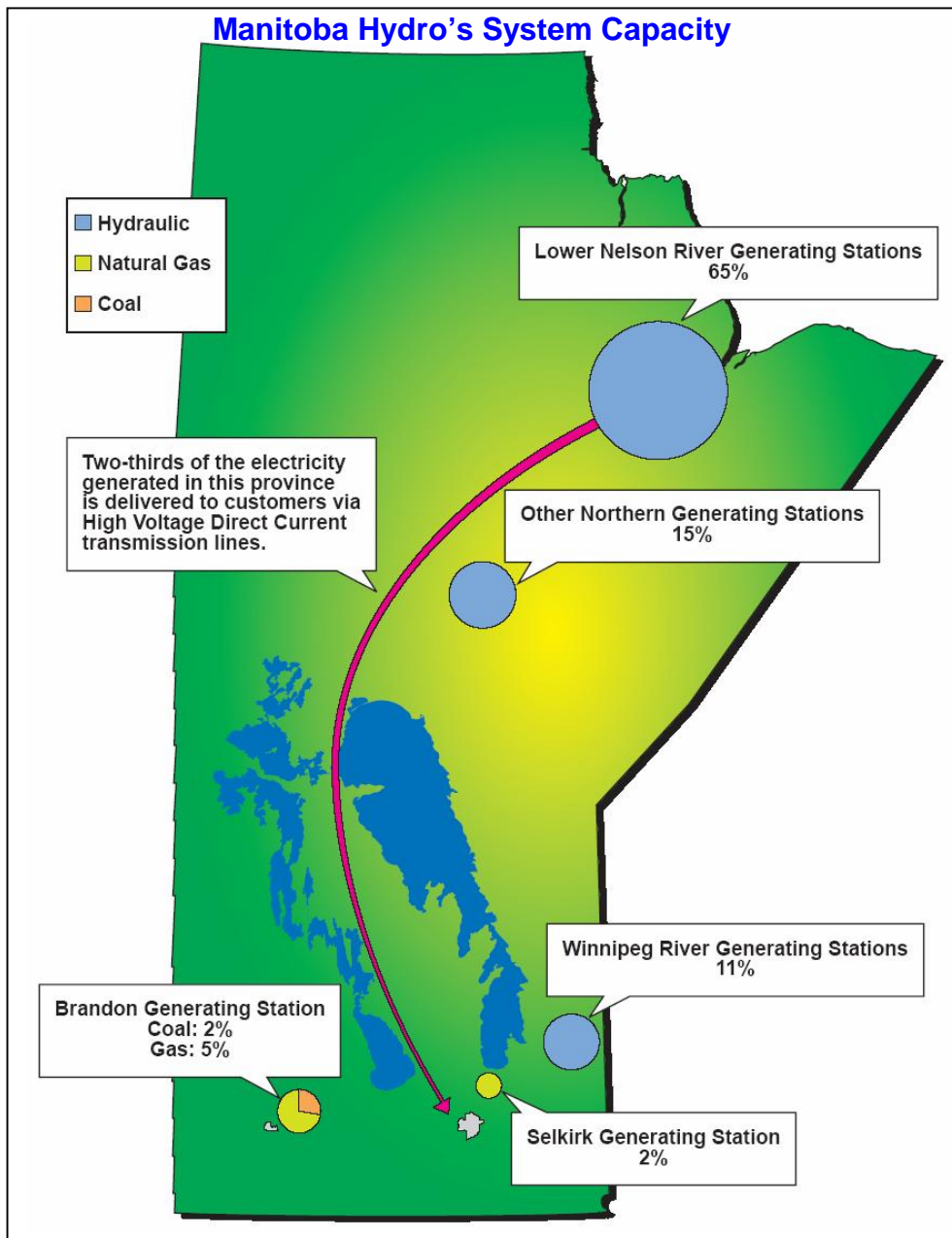
BRANDON GENERATING STATION

# WHY IS BRANDON UNIT 5 SO IMPORTANT?

- ◆ Unit 5 helps to keep electricity rates in Manitoba among the lowest in North America by:
  - Providing reliable and economical back-up power during:
    - § Times of drought;
    - § Periods of high demand (e.g. winter); and
    - § Emergencies and Major transmission and generation equipment outages.
  - Supporting exports from the Manitoba Hydro system. By guaranteeing delivery, Manitoba Hydro maximizes export revenues.
  - Providing fuel source diversity at stable production costs (i.e. due to stable fuel prices).

# IMPORTANCE (CONTINUED)

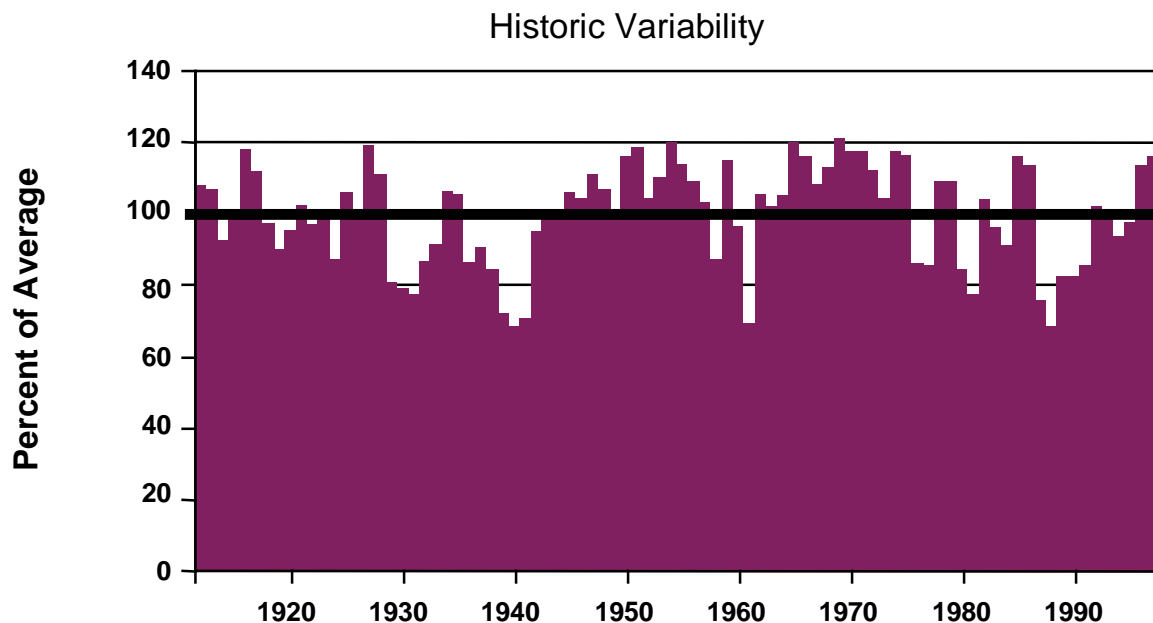
- ◆ Brandon Unit 5 is a reliable source of power located near the load centres in the more densely populated region of southern Manitoba.





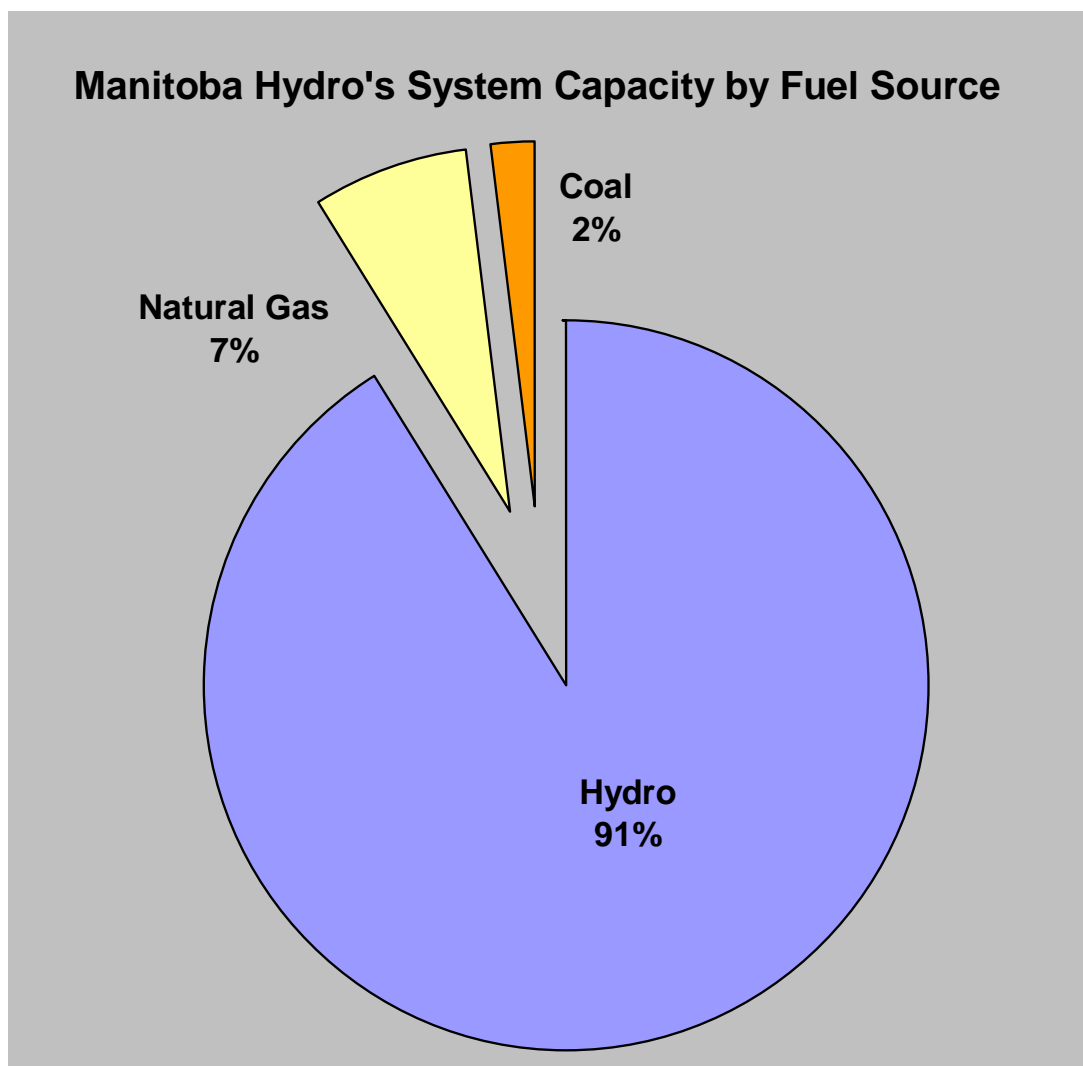
# IMPORTANCE (CONTINUED)

- ◆ Manitoba Hydro experiences highly variable water inflows. Brandon Unit 5 helps to fill in the valleys (i.e. the periods when inflows are poor).



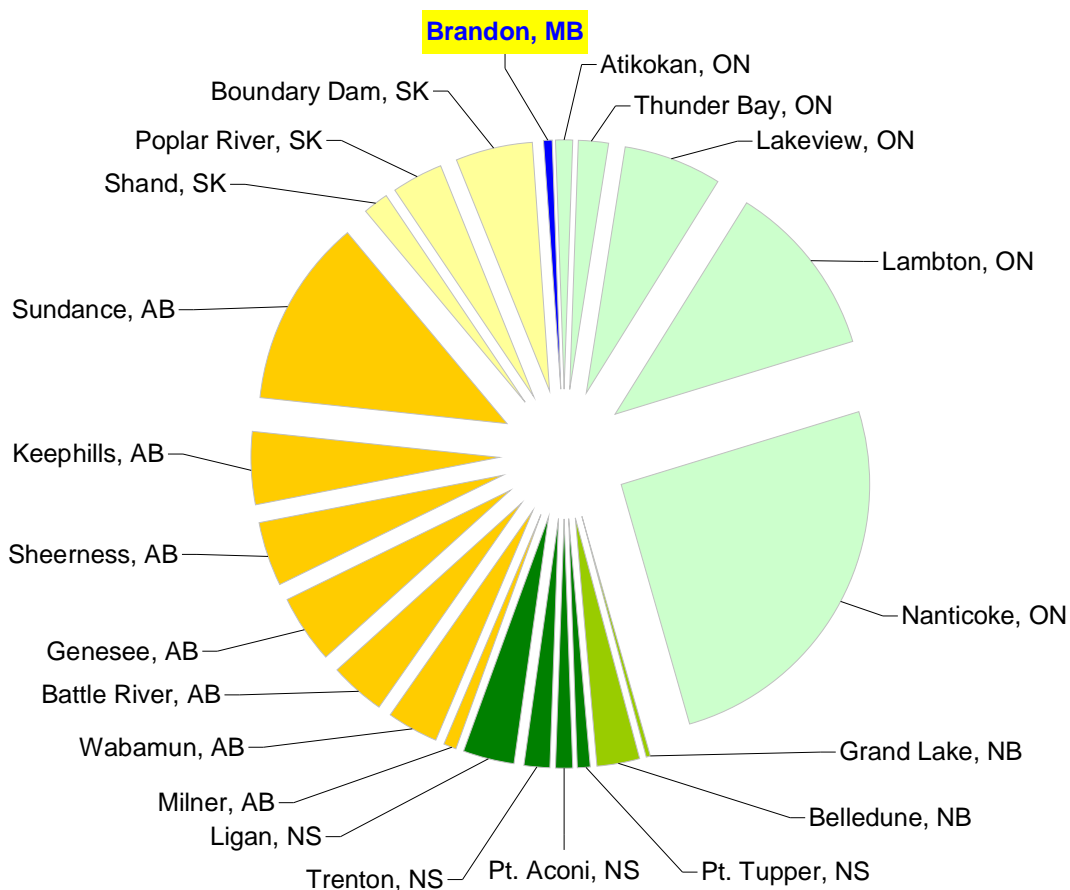
# IMPORTANCE (CONTINUED)

- ◆ Manitoba Hydro benefits from a certain mix of thermal generation to back-up its primarily hydraulic system. Natural gas and coal are the primary fuels used at thermal generating stations. Diversity of fuels leads to financial stability.



# BRANDON UNIT 5 IN THE CANADIAN CONTEXT

**Coal-Fired Generation in Canada (by Capacity)**



- ◆ Brandon Unit 5 is one of the smallest coal generating stations in Canada.

# LOCAL EMPLOYMENT AND ECONOMIC BENEFIT

- ◆ The operation of Brandon Unit 5 directly employs 50 people at the generating station.
- ◆ About 5 people are employed by CP Rail as part of the coal transportation system.
- ◆ Economic spin-offs for local material and equipment suppliers total \$360,000 per year.
- ◆ Manitoba Hydro pays \$460,000 per year to the City of Brandon in grants (in lieu of taxes).
- ◆ Support for community projects such as:
  - Brandon Emergency Support Team;
  - Assiniboine riverbank rehabilitation;
  - Bike path extension (Victoria Avenue East);
  - Career training for local college students; and
  - Others





Manitoba Hydro staff celebrate ISO 14001 registration for Environmental Management Systems



Spill Response Training Exercise  
Brandon Emergency Support Team (BEST)

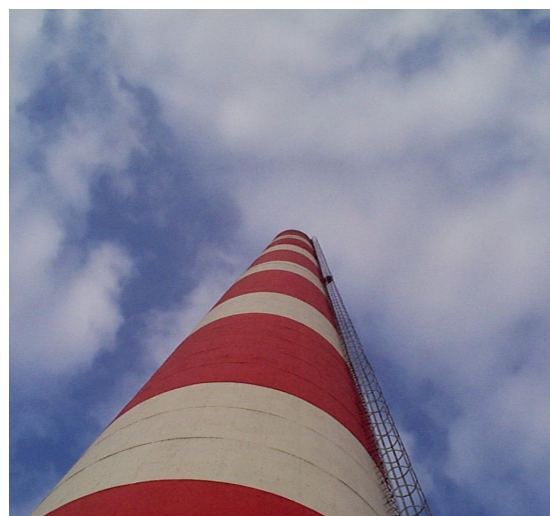
# BRANDON UNIT 5

## ENVIRONMENT ACT LICENCE

◆ The existing Environment Act Licence places environmental limits on the operation of Unit 5.

◆ Restrictions are in place on air emissions of:

- SO<sub>2</sub> (sulphur dioxide);
- NO<sub>x</sub> (oxides of nitrogen);
- PM (particulate matter);
- Fugitive dust; and
- Noise.



◆ Restrictions are in place on liquid effluent:

- pH (how acidic or basic the discharge is);
- TSS (total suspended solids);
- Oil and Grease; and
- Copper and Chlorine.

# WHY A LICENCE REVIEW?

- ◆ The Licence Review is an administrative requirement of Manitoba Hydro's Environment Act Licence for Brandon Unit 5.
- ◆ Manitoba Conservation is directing the Licence Review.
- ◆ The Environment Act Licence Review will include a comprehensive up-to-date Environmental Impact Statement for Unit 5.
- ◆ This Environmental Impact Statement will serve as a benchmark and source of reference for the future operation of Unit 5 until approximately 2020.
- ◆ The Environment Act Licence Review will assess the environmental performance of Unit 5 and determine if the Environment Act Licence governing operations needs revision.

# ENVIRONMENTAL ISSUES

- ◆ The Environment Act Licence Review will address the environmental effects resulting from:
  - Air emissions;
  - Noise emissions;
  - Liquid effluent;
  - Water use; and
  - Storage and handling of chemicals and other hazardous materials.
- ◆ The Environment Act Licence Review will specifically assess regional air quality and aquatic effects to the Assiniboine River.
- ◆ The Environment Act Licence Review will include cumulative effects from other regional sources.
- ◆ A Human Health and Ecological Risk Assessment will be completed for the Environment Act Licence Review.

ARE THERE OTHER POTENTIAL ISSUES  
YOU WOULD LIKE STUDIED?



## Brandon Unit 5 Environmental Emissions and Controls



### LEGEND

1. Air emissions from Unit 5.
2. Electrostatic Precipitator – removes 99.5% of particulate air emissions.
3. Liquid Effluent from Ash Lagoon – water is used to sluice ash to lagoon where it settles and the decant water is discharged to the Assiniboine River
4. pH control of Ash Lagoon effluent discharge.
5. Drainage Ditch (off-site sources).
6. Fugitive dust from coal pile and ash storage. Water sprayed on coal pile or activities stopped to reduce dust.
7. Cooling Tower to prevent heated water discharge to Assiniboine River.
8. In-plant controls: Oil containment/mitigation equipment, coal dust collection system, on-site emergency spill response crew and equipment.
9. Noise.





## ASH LAGOON SETTLING POND

Water is used to sluice ash generated from burning coal to the ash lagoon where it settles. The decant water is discharged to the Assiniboine River.