

STAY
CLEAR
STAY
SAFE

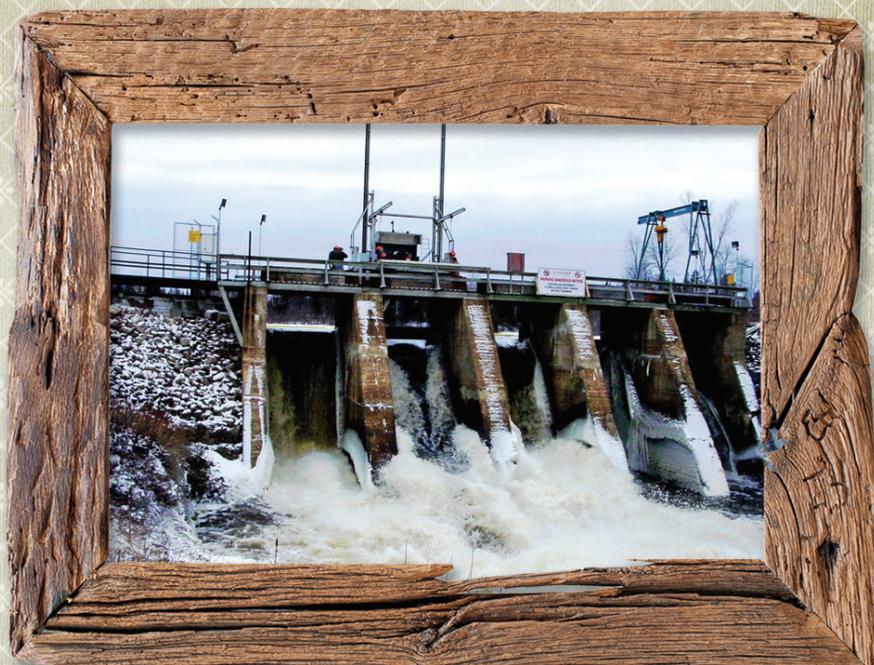


ONTARIO **POWER**
GENERATION

opg.com



In nature, beavers make dams so that they will have deep water to build their lodges where they will be safe.



At OPG, we use dams so that we can use the water stored there to make electricity!
Dams also help to control the level of the water on lakes and rivers.

What is Hydro?

Hydro means water so...

Hydroelectricity is electricity made from water!



OPG has 66 stations and 241 hydro dams across Ontario



- OPG operates stations in all regions of the province including Niagara, Muskoka, Ottawa, Timmins and Thunder Bay
- Our operations span 24 river systems

How Exactly Do We Get Electricity From Water?
Let's start with the basics.



A hydroelectric generating station needs falling, flowing water to power the generators to make electricity. That's why some hydro stations use the natural flow of a waterfall, and others create a bigger fall by building a dam.

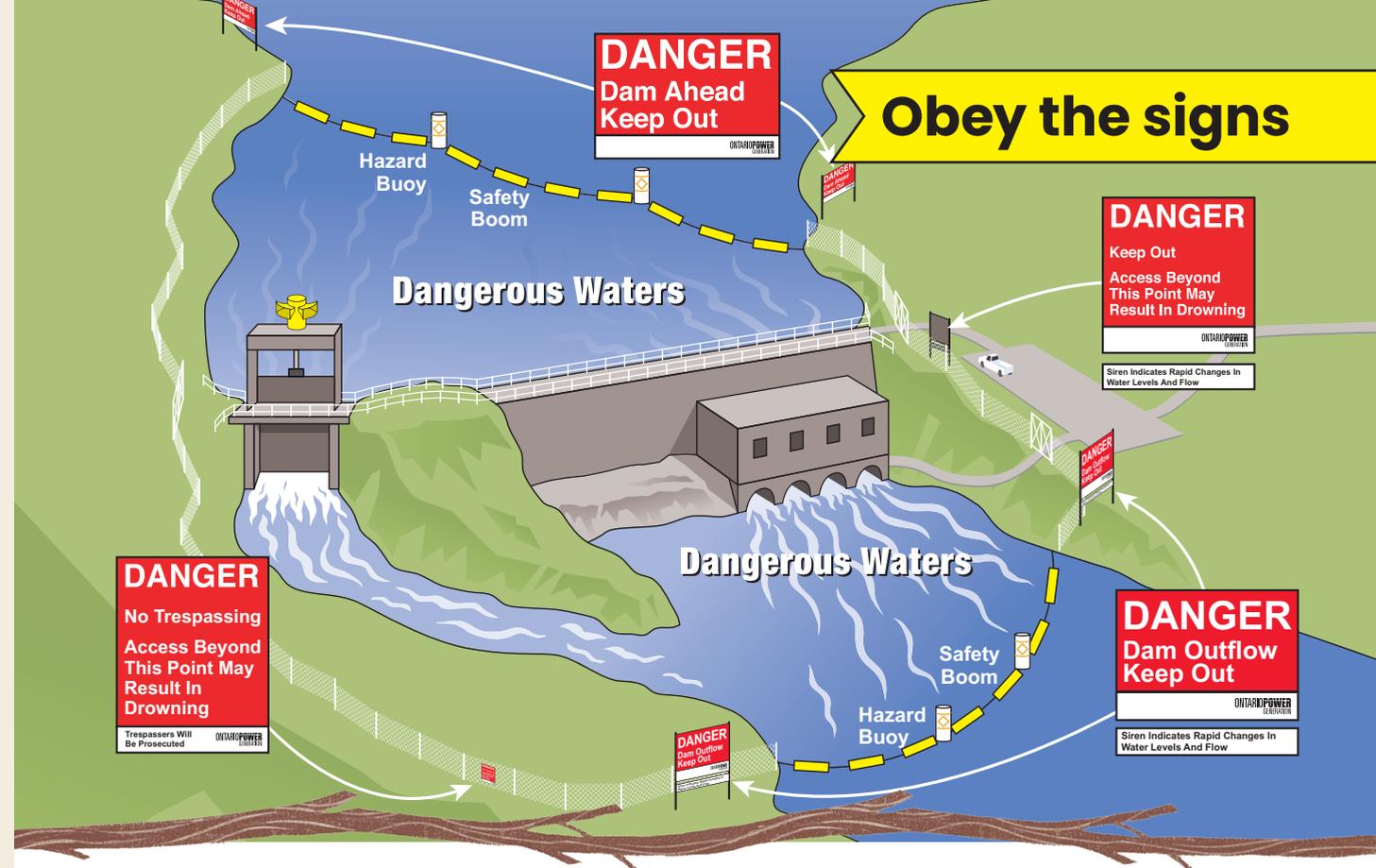
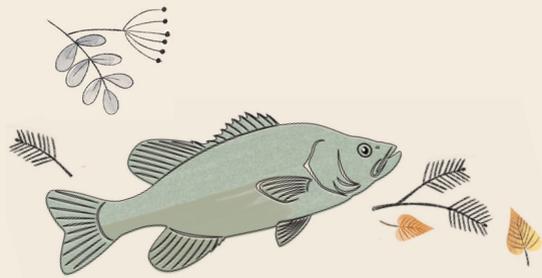
Here's a step-by-step guide of an OPG hydroelectric station.

1. Water at the higher level is called the **FOREBAY**.
2. Water flows through the intake into a big pipe called a **PENSTOCK**.
3. The water rushes through the penstock and down to a water wheel called a **TURBINE**. The moving water hits the turbine, causing it to spin.
4. The turbine is connected to a **GENERATOR**. Attached to the generator are some big **MAGNETS**. When the turbine starts to spin, the magnets spin too.
5. Once the turbine and generator magnets spin, the electrons in the generator's wire coils called a **STATOR** are forced to move. The generator converts this movement into **ELECTRICITY**.
6. Once electricity is produced, the water can go back to the river. Water leaves the generating station through a **DRAFT TUBE**.
7. The water rejoins the river at the **TAILRACE**. This water flows downstream and is ready to use again.



Danger!!!

Playing at or near hydroelectric stations is dangerous!



Areas surrounding OPG's dams and hydroelectric stations have signs like these to warn you. Obey the signs and other safety barriers and **always be alert for DANGER.**

Although these facilities are an important renewable energy source, they are **NOT places for recreation.** To help ensure you "**Stay Clear, Stay Safe!**" arm yourself with the facts! It could mean the difference between life and death!

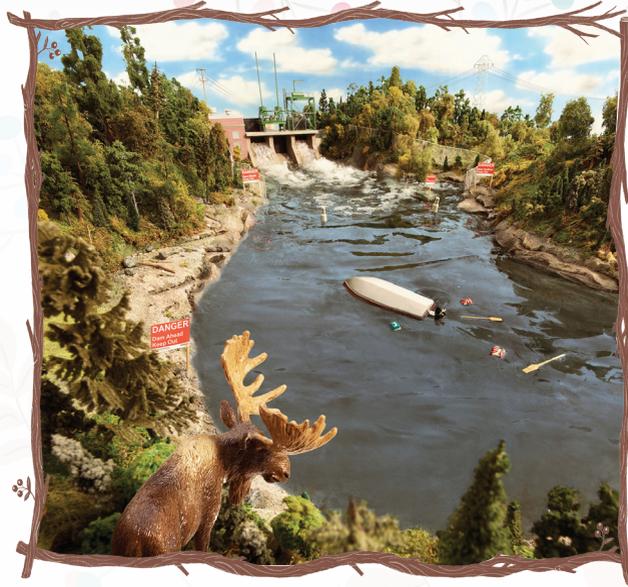
Remember, dams and hydroelectric stations, and the areas around them are:

- Not** fishing areas
- Not** boating areas
- Not** swimming areas
- Not** snowmobile or cross-country ski areas
- Not** camping sites or picnic areas
- Not** skating areas
- Not** safe places for recreation



In summer or winter...

Dry or calm riverbeds below dams may look safe but they can quickly change into rapidly flowing waterways with dangerous currents.



In cold weather, ice forming near dams is deceptively thin and can give way beneath you, plunging you into dangerously cold and turbulent waters.

**The dangers are real.
Stay Clear, Stay Safe!**



Word Search

Stay Safe
Generator
Electricity
Stay Clear

Dangerous
Station
Ontario
Tailrace

Thin Ice
Turbine
Hydro
Turbulent

Signs
Warning
Forebay
Currents

Penstock
Obey
OPG
Water

Lake
River

Dammy the Beaver Says:
"Stay Clear, Stay Safe!"

Hydroelectric generating stations use water to power our work and play. But go too close and those dams and stations can be dangerous – Be smart and stay away!

DID YOU KNOW...

- Many dams and stations are remote operated - there is no one on site to spot someone in trouble!
- Water can be deadly both above and below a power station - that's right kids, the danger here is double!



Visit www.stayclearstaysafe.ca for more safety information and materials.



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