Ontario Power Generation (OPG) has been safely transporting radioactive material in Ontario for over 40 years.

**Safe, Responsible Management of Nuclear Materials**

Operating Ontario’s nuclear generating stations produces waste, used equipment and materials, and other by-products much like any other industry. Some of it is radioactive and must be shipped within the province to be stored as waste, cleaned for re-use or examined for research and development. Some products can be used as key components for medical, scientific or commercial applications.

When it comes to transporting these radioactive materials, OPG has a simple bottom line: the safety of employees, the public and the environment comes first. All aspects of the transportation program, from drivers to vehicles to packaging containers, reflect rigorous safety standards.

**A record of safety**

OPG makes approximately 800 shipments of radioactive materials per year, and has done so safely for the past 40 years. After thousands of shipments and millions of kilometres, radioactive material has never been released into the environment from our transportation operations.

**About the program**

The objective of OPG’s Radioactive Material Transportation Program is to ensure safe, regulatory-compliant, and efficient transportation of radioactive material. This program is supported by a well-developed Radioactive Materials Transport Emergency Response Plan.

OPG conducts regular audits and safety assessments of our transportation practices to ensure they conform to regulation by Transport Canada and the Canadian Nuclear Safety Commission (CNSC).

OPG is responsible for the transportation of:

- Low- and intermediate-level radioactive waste to OPG’s Western Waste Management Facility, located in the Municipality of Kincardine from the Darlington, Pickering and Bruce Nuclear Stations. Low-level waste is minimally radioactive material that has become contaminated during routine clean up and maintenance and consists of used clothing and cleaning materials. Intermediate-level waste consists primarily of used reactor core components and resins and filters used to keep the reactor water systems clean;

- Tritium used for commercial purposes such as manufacturing radio luminescent signs and biomedical tracers; and

- Cobalt-60, a radioactive isotope which is used for a variety of biomedical purposes. It is picked up by our customer and transported from our facility in certified containers.
Packaging and Containers — Built for Safety

Many different types of packaging are used to transport radioactive materials.

All of the transport packages are built to requirements specified by the Canadian Nuclear Safety Commission’s Packaging and Transport of Nuclear Substances Regulations. For example, Type B packages for intermediate and high level waste are designed to retain their contents even in severe accident conditions. These packages must be able to withstand a nine-metre drop onto an unyielding surface; a one-metre drop onto a steel pin; 30 minutes in an 800-degree celsius fire; and eight hours immersed in 15 metres of water. Only after field testing and/or computer analysis has demonstrated that the Type B packages can survive testing will a certificate of approval to use the packaging be issued by the Canadian Nuclear Safety Commission (CNSC). A quality assurance program is applied to the design, manufacture and maintenance of the packages to ensure their integrity.
Radioactive Material Transportation

OPG makes approximately 800 shipments of radioactive materials per year and has done so safely for the past 40 years.

Highly trained drivers

OPG ensures that Radioactive Material Transport drivers are highly trained with both classroom sessions and advanced defensive driving training. This ensures that our drivers achieve qualification standards that exceed Ontario Ministry of Transportation requirements. OPG operates a safe and well maintained fleet of tractors, trailers, and packaging containers to carry out our Radioactive Material Transportation program.

Regulations on and off the road

Radioactive material transportation is regulated by Transport Canada’s Transportation of Dangerous Goods Regulations and by the CNSC’s Packaging and Transport of Nuclear Substances Regulations. These regulations specify the documentation and administrative requirements to transport radioactive material on public roadways.

The equipment and work programs reflect regulations set by the International Atomic Energy Agency. The documentation must include specification of the contents on the shipping document, the labeling and placarding requirements, driver training requirements and the approved transportation emergency response plan. In the unlikely event that an accident should occur while radioactive materials are in transit, OPG maintains an approved Transportation Emergency Response Plan with Transport Canada and has a team of highly trained personnel ready to respond.
Emergency Preparedness

Tracking shipments — safe and secure

Every package shipped is logged into an OPG database, which contains information about the type of material being transported, points of origin and destination. This information is also carried by the drivers in the transportation vehicles.

The use of Global Satellite Positioning (GPS) means OPG line management knows precisely the location of the radioactive shipments in real time, and it also alerts line management to unplanned stops made by the shipment.

OPG’s Radioactive Material Transportation Program is further supported by:

- Regular audits and safety assessments of transportation practices;
- An ongoing training program, including mock emergency training involving local police, fire, and other officials;
- Regular maintenance and inspection of tractors and trailers based on Ministry of Transportation standards;
- Routine package inspection and periodic maintenance (prior to and after each shipment); and
- Audits of the Transportation Emergency Response Plan both internally and externally by authorities such as Transport Canada.

Communicating our program

Our relationship with the people of Ontario is very important to us. The safe transportation of nuclear materials is done in a very transparent manner. Over the past 30 years OPG has been providing information on Radioactive Material Transportation to the public through a variety of methods.

OPG ensures ongoing communication with police, fire and other emergency management and municipal officials along our transportation routes through face to face presentations. For the general public, information about transportation is covered in presentations given to community group meetings and at the visitor centres. More information is also available within waste management brochures and video and on the OPG website.

For more information on our activities, please visit www.opg.com or email nwmd@opg.com, or call 519-360-6414 ext 2764.