

# 2009 Performance Report

## DARLINGTON NUCLEAR

This report discusses performance for Darlington Nuclear in the areas of safety performance, electricity production, environmental performance, and significant accomplishments achieved during 2009.



### OPG continues to maintain a high standard of Public Safety

OPG's ongoing goal is to maintain and continue building a strong safety culture at each of our nuclear stations to ensure that there are no public or employee safety concerns as a result of our operations.

In the four decades that nuclear energy has served Canada's electricity needs, no member of the public has ever been harmed as a result of a radiation emission from a nuclear power plant or waste storage facility. An excellent measure demonstrating that the public is protected at all times from radiation emissions, is provided by the continuous measurement of radiation exposure at the perimeter of our stations. All Canadians are exposed to naturally-occurring radiation, mostly from the sun and from radon which is found in soil. The average exposure of Canadians is 1,770 microsieverts a year.

For Darlington Nuclear, the estimated additional exposure during the third quarter of 2009 for people living nearest the station, based on their actual lifestyle characteristics and food consumption patterns, was 0.2 microsieverts. This is a very small percentage of the amount we each receive naturally and much lower than the 1,000 microsieverts permitted by the Canadian Nuclear Safety Commission regulation.

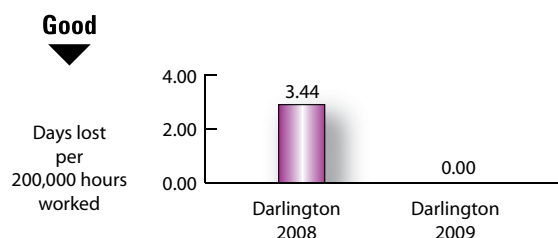
### Keeping Our Employees Safe

OPG's first priority is the health and safety of employees and the public. In 2009, OPG received a ZeroQuest Gold Award from the Electrical and Utility Safety Association. The award recognizes OPG's effort to continuously improve our safety performance, health and safety management systems and safety culture. OPG was first recognized with the Gold Award in 2005, this latest award recognizes OPG's maintenance of this high level of performance for four consecutive years.

At OPG's nuclear operations, we are on a continuous journey toward excellence in our safety performance. Its defining features include striving for zero injuries and creating a work environment where approximately 2,500 employees at Darlington Nuclear take personal responsibility to consistently build safety into every task they perform.

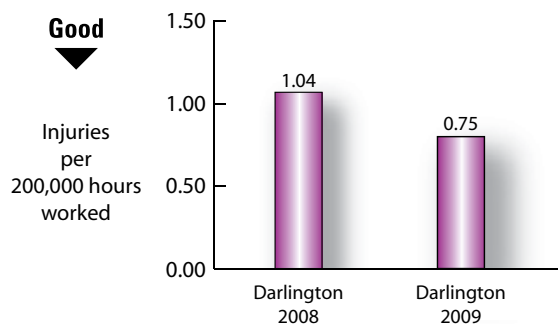
### Employee Accident Severity Rate

Darlington's employee safety performance is measured against other companies. One measure is the employee Accident Severity Rate (ASR) which measures the number of days lost due to injuries per 200,000 hours worked. In 2009, Darlington recorded 0.00 days lost per 200,000 hours worked. This is excellent performance and better than Canadian Electricity Association (CEA) top quartile performance.



### Employee All Injury Rate

Another key safety measure is the All Injury Rate (AIR) which measures the number of workplace injuries per 200,000 hours worked. In 2009, Darlington recorded 0.75 injuries per 200,000 hours worked. This is good performance and better than CEA top quartile performance.



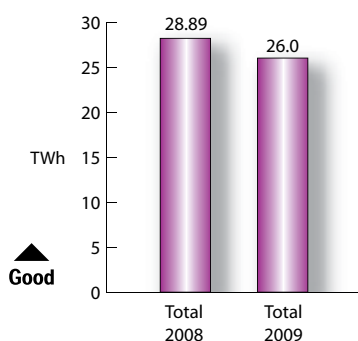
## Safety Milestones

The safety of our employees, like the safe operation of our nuclear reactors is a top priority. In 2009:

- Darlington employees achieved over 5 million hours without a lost-time injury.
- Darlington Tritium Removal Facility employees achieved 10 years without a lost-time injury.
- Darlington, Chemistry & Environment Services employees achieved 10 years without a lost-time injury.

## Electricity Production

### Darlington Electricity Production (TWh)



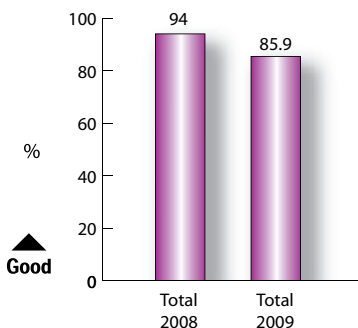
Production from Darlington's four units in 2009 was 26 TWh, a decrease from 2008. This can be largely attributed to the planned Vacuum Building Outage (VBO). The VBO completed in the spring was OPG's largest and most complex nuclear project.

Darlington received a very strong evaluation in 2009 following its latest peer review by the World Association of Nuclear Operators (WANO). WANO's assessment is a strong indicator of Darlington's continued improved performance.

Darlington Units 1, 2, and 4 achieved top quartile performance compared to other CANDU units worldwide.

## Unit Capability Factor

### Unit Capability Factor (%)



Another measure of the station's performance is its unit capability factor, basically a percentage of perfect generation a unit is capable of producing during a specified period. Darlington reported a capability factor of 85.9 per cent compared to 94 per cent in 2008. The lower unit capability performance was due to the VBO and the Darlington Unit 3 planned outage. Both outages were safely and successfully completed.

## Protecting the Environment

In December 2009, Darlington Nuclear inadvertently released 210,000 litres of demineralized water to the environment. The release was quickly identified and stopped. The water released to the environment contained very low levels of tritium and hydrazine, but had no impact on local drinking water. All appropriate agencies, the community, and media were notified.

## Milestones & Items of Interest

Some of the milestones and items of interest achieved by Darlington Nuclear and across OPG include the following:

- OPG was recognized in 2009 with the Zero Quest Gold Award from the Electrical and Utilities Safety Association. The award recognizes a company's ability to maintain a high level of safety management and safety performance for four consecutive years. OPG is the only company in the Zero Quest Program to reach this milestone.
- Employees at Darlington Nuclear safely completed the largest and most complex project for the year – Darlington Vacuum Building Outage. Occurring every 12 years, the Darlington VBO was launched on April 15 following more than two years of preparation. The outage lasted 40 days and involved over 4,000 OPG staff and contractors.
- As part of OPG's annual charity campaign in 2009, employees across Durham Region donated more than \$900,000 to charities and local organizations.
- The Darlington New Nuclear Project achieved a significant milestone in OPG's efforts to bring new nuclear to the Darlington site. OPG submitted the "Environmental Impact Statement" and the application for a "Licence to Prepare Site" to the federal authorities.
- The Canadian Nuclear Safety Commission released its annual assessment in which "CNSC staff concluded that nuclear power plants in Canada operated safely during 2008."

Do you have any questions about our performance results? If so, please give us a call at 905-623-7122.